



UNIVERSITY OF NATIONAL AND WORLD ECONOMY
„International Economics and Politics”
Faculty Department of „International Economic Relations and Business”

THE MEMBERSHIP OF BULGARIA IN THE EUROPEAN UNION: YEARS LATER

Volume II

Conference proceeding book with papers presented
in English language

October 2025, UNWE – Sofia

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Sofia, 2026

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COMPETE, COOPERATE, CO-EVOLVE: EUROPE'S CIRCULAR STRATEGY WITH INDIA AND CHINA

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Abstract

This paper offers a concise perspective on how Europe can balance competition and collaboration with India and China in the area of circular economy. Using the “compete, cooperate, co-evolve” lens, it focuses on three levers: (1) standards and product-data interoperability, (2) secure and diversified secondary materials – especially critical raw materials, and (3) supply-chain partnerships. Two brief cases – batteries and textiles – illustrate where interests align and where frictions arise. The argument is that Europe should pair defensive resilience (due diligence, recycling, and diversification) with targeted cooperation: mutual-recognition pilots for product-passport data, joint urban-mining and repair/reuse initiatives with India, and selective alignment with China on recycling and safety standards without deep technological lock-in. The contribution is a pragmatic framework and a small set of policy options suitable for near-term implementation, aiming to advance strategic autonomy while avoiding zero-sum dynamics.

Keywords: circular economy; EU–India relations; EU–China relations; standards interoperability; critical raw materials

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INTRODUCTION

The European Union’s ambition to build a competitive circular economy intersects with shifting global value chains and regulatory competition. India and China are pivotal because of their roles in manufacturing, materials processing, and emerging standard-setting (OECD, 2024; UNCTAD, 2023). Existing analyses often treat Europe’s relations with each partner separately or focus narrowly on trade friction and critical raw materials. This paper proposes a unifying, policy-pragmatic perspective that balances defensive resilience with selective cooperation and co-evolutionary learning (European Union, 2024a; European Commission, 2024a).

The research question is how the EU can structure a circular strategy that manages rivalry yet leverages complementarities with India and China. The contribution is a compact analytical lens – compete, cooperate, co-evolve – operationalized through three levers and demonstrated in two sectors. The scope is intentionally limited to a short, perspective-style article; evidence is illustrative and anchored in recent regulations and official guidance to ensure verifiability via public links (European Union, 2023; 2024a; 2024b; 2024c; European Commission, 2022; 2024b; MoEFCC/CPCB, 2022–2024; PRC, 2008/2018).

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CONCEPTUAL FRAMEWORK: COMPETE, COOPERATE, CO-EVOLVE

Concept and definition

This paper defines compete–cooperate–co-evolve as a policy triad for governing international circular-economy relations. *Compete* denotes instruments designed to safeguard strategic autonomy and internalise externalities (e.g., due-diligence enforcement, market surveillance, diversification of secondary-materials supply). *Cooperate* refers to purposive alignment where interests demonstrably converge, privileging interoperability and mutual recognition over full harmonisation (e.g., core fields of the Digital Product Passport, shared audit protocols). *Co-evolve* captures the deliberate cultivation of joint learning and capability-building – through testbeds, standardisation feedback loops and talent mobility – under conditions that avoid deep technological lock-in and protect legitimate security interests (European Union, 2024b; 2024c; European Commission, 2024a; 2024b; IEA, 2024; GBA, 2023).

Intellectual genealogy

The triad synthesises insights from three literatures. In strategic management, the notion of *coopetition* formalised the coexistence of rivalry and collaboration, showing how actors co-create value while competing for capture (Brandenburger & Nalebuff, 1996). In parallel, the business-ecosystems perspective conceptualised industries as co-evolving communities linked by complementarity and contestation (Moore, 1993). In evolutionary economics and organisation studies, innovation and industrial change are path-dependent, selection-driven processes, giving rise to explicit *co-evolution* lenses that highlight reciprocal adaptation between organisations and their environments (Nelson & Winter, 1982; Lewin & Volberda, 1999). Finally, institutional and political economy clarified the conditions under which repeated interaction sustains cooperation despite competitive incentives (Axelrod, 1984). Together, these strands motivate a framework that goes beyond dyadic binaries.

From coopetition to a policy-oriented triad

Classical *coopetition* is necessary but insufficient for problems of *open strategic autonomy*. Regulations, standards, and capabilities evolve endogenously as actors respond to each other; policy must therefore address not only the balance of competition and collaboration, but also the trajectory of learning and adaptation. Recent EU communications on de-risking and economic security make this explicit by calling for calibrated, risk-sensitive responses that remain open to cooperation where possible (European Commission & High Representative, 2023; European Commission, 2024c; European Parliament, 2024). In the domain of technology and standards, scholarship likewise documents intensifying geopolitical competition alongside zones of technical alignment and mutual interest (Zúñiga et al., 2024). The triad operationalises these insights into a sequenceable toolkit: protect where vulnerabilities are material, align where interests and outcomes coincide, and invest in joint capability formation to expand future policy options.

Rationale for EU–India–China circularity

The EU’s circular transition is standards-intensive (ESPR and the Digital Product Passport), materials-constrained (Critical Raw Materials Act), and supply-chain-embedded (CSDDD and Waste Shipments). Given China’s dominant midstream processing and India’s scaling assembly and circular entrepreneurship, a strategy premised solely on competition risks regulatory fragmentation and technological lock-in, while unguarded cooperation risks dependency and moral-hazard in verification. The compete–cooperate–co-evolve triad is warranted in this setting: competition secures resilience (due diligence, waste-crime enforcement, diversification); cooperation prioritises interoperability and mutual recognition in data and claims; and co-evolution builds shared testbeds and skills pipelines that enable credible, cross-jurisdictional circular practices (European Union, 2024a; 2024b; 2024c; European Commission, 2024a; 2024b; State Council, 2022; MoEFCC/CPCB, 2022–2024; IEA, 2024; GBA, 2023).

Incremental contribution

Relative to generic *coopetition*, this framework contributes three refinements. First, it sequences instruments under risk-sensitive governance, acknowledging heterogeneity across sectors and partners. Second, it places standards and data at the core of circular trade, reflecting the market-shaping role of the DPP and related audit infrastructures. Third, it targets capability formation – measurement, verification, and skills – so that rules are not only promulgated but are implementable across jurisdictions. These refinements translate a broad literature into a pragmatic toolkit for circular batteries and textiles, guiding concrete pilots while avoiding premature technological lock-ins.

METHODS AND SCOPE

We undertake a policy-anchored comparative review across three levers – standards/data, secondary materials, and supply-chain partnerships. The analysis triangulates primary legal texts and official guidance – Batteries Regulation (EU) 2023/1542; ESPR (EU) 2024/1781; Critical Raw Materials Act (EU) 2024/1252; Waste Shipments (EU) 2024/1157; CSDDD 2024/1760; Digital Product Passport materials; and the EU Strategy for Sustainable and Circular Textiles (COM/2022/141) – with authoritative national sources for India (Draft National Resource Efficiency Policy, MoEFCC 2019; NITI Aayog reports; E-waste Management Rules 2022–2024) and China (Circular Economy Promotion Law; State Council textile-recycling guidelines, 2022). Evidence is illustrative rather than exhaustive, selected for comparability, verifiability via public links, and direct relevance to the batteries and textiles vignettes. No new datasets, tables, or graphs are introduced; instead, the paper synthesises existing regulatory and programmatic materials to derive operational policy options.

SECTOR SNAPSHOT I: BATTERIES

Importance of batteries for the circular strategy

Electrification of mobility and stationary storage is accelerating across the EU, making rechargeable batteries a systemic lever for decarbonisation, industrial competitiveness, and resource security. The battery value chain concentrates a suite of critical raw materials (lithium, nickel, cobalt, manganese, graphite) whose extraction and mid-stream processing are geographically concentrated, exposing Europe to supply- and compliance-risk (IEA, 2024; European Union, 2024a). Circular strategies – design for durability and repair, collection and high-quality recycling, second-life applications, and robust traceability – therefore have outsized impact relative to other product groups. Regulation (EU) 2023/1542 is the EU’s first end-to-end framework that couples product-level requirements with market-access, due-diligence and information-architecture rules, notably the digital battery passport (European Union, 2023; European Commission, 2024a; 2024b).

Regulatory architecture and information governance

The Batteries Regulation operationalises circularity through eco-design provisions (performance, durability, removability/replaceability), collection and take-back, recycling-process efficiency, recycled-content claims, and mandatory due diligence for supply chains. A digital battery passport (a domain-specific extension of the ESPR/DPP concept) is phased in to carry core technical identifiers, materials and recycled-content attestations, and end-of-life information, enabling verifiable, machine-readable claims across borders (European Union, 2023; European Commission, 2024a; 2024b). Complementary instruments – the Waste Shipments recast and CSDDD – shape cross-border flows and supplier-screening obligations, while the CRMA links circular outcomes to strategic-project financing and monitoring (European Union, 2024b; 2024c; 2024a). Together these rules create data-intensive compliance regimes in which interoperability and mutual recognition are essential to avoid duplication and friction at the EU’s external interfaces.

Structure of triangular interdependence

China retains global leadership in precursor and cathode active materials, graphite processing, and integrated cell manufacturing, with expanding recycling capacity; India is scaling in pack assembly, collection logistics, and early-stage recycling/repurposing, supported by evolving extended-producer-responsibility regimes; the EU is investing in cell plants and recyclers while relying on imports for mid-stream materials (IEA, 2024; NITI Aayog, 2023). This configuration implies: (i) competition in mid-stream processing and standards influence; (ii) cooperation opportunities in collection, logistics, and verification of recycled-content and state-of-health information; and (iii) scope for co-evolution via joint testbeds that refine measurement protocols and lower transaction costs in reverse logistics.

Friction points and alignment spaces

Main points of friction and the existing alignment spaces could be summarized in the following way:

1. Verification of recycled-content and end-of-waste status. Divergent definitions and sampling/audit practices raise the risk of *green-dumping* and double counting. The DPP/battery passport can anchor a core data layer for claims, while mutual-recognition pathways reduce duplicative audits (European Union, 2023; European Commission, 2024b).

2. Second-life and state-of-health (SoH). Lack of interoperable SoH metrics complicates cross-border reuse and repurposing. Shared testbeds – hosted by consortia spanning EU, India, and China – could converge on portable diagnostics and minimum-dataset requirements for warranty transfer (GBA, 2023; European Commission, 2024b).

3. Waste-shipment and repair logistics. The Waste Shipments recast tightens controls while enabling intra-EU circular flows; at external borders, clarity on repair vs. waste classifications is pivotal to prevent leakage to informal processing and to facilitate certified refurbishment corridors (European Union, 2024b). Targeted administrative cooperation with Indian and Chinese authorities can align documentary evidence for shipments destined for pre-approved facilities.

4. Due diligence and supplier screening. CSDDD obligations require risk-based screening of upstream actors. Shared reference taxonomies for salient environmental and social risks in battery supply chains can streamline vendor assessments and reduce survey fatigue (European Union, 2024c; IEA, 2024).

Illustrative cooperation mechanisms

In operational terms, the implementation of the *compete–cooperate–co-evolve* triad in the battery sector could proceed through a set of complementary cooperation mechanisms that prioritise interoperability, verification, and shared capacity building.

A first step would involve core-field alignment for the digital battery passport, where a minimum interoperable dataset – covering the unique battery identification code, chemical composition, recycled-content claim structure, state-of-health (SoH) metrics, and identifiers of certified end-of-life handlers – would be jointly defined. Such harmonisation would facilitate smoother customs and market-surveillance procedures in EU trade with India and China (European Commission, 2024a; 2024b).

A second strand concerns joint verification of recycled content, through *round-robin* audits across accredited laboratories in the EU, India, and China. Using common sampling protocols and chain-of-custody procedures, these trials would enhance trust in recycle claims in NMC and LFP material streams while reducing the need for duplicative testing (European Union, 2023).

Finally, cooperation could advance through urban-mining and second-life corridors, co-funded by public agencies and private operators. These hubs – strategically located near high-volume end-use clusters such as two- and three-wheeler markets in India or stationary-storage installations in Europe – would support certified collection, repurposing, and material recovery, all under transparent Monitoring, Reporting, and Verification (MRV) systems and traceable end-markets (European Union, 2024a; MoEFCC/CPCB, 2022–2024; NITI Aayog, 2023).

Together, these mechanisms would create an incremental architecture of trust, where verifiable data and shared infrastructure enable both regulatory compliance and learning-based co-evolution within the EU–India–China circular-battery ecosystem.

Risk management and safeguards

To avoid technological lock-in and data-sovereignty concerns, the triad relies on: (i) *modular interoperability* (core fields common; optional jurisdictional extensions); (ii) *IP-safe data rooms* for sharing sensitive performance parameters; and (iii) *time-bound pilots* with explicit exit ramps and periodic evaluation. Export-control and competition-law compliance are integrated from design to prevent collusive outcomes while enabling legitimate standardisation work (European Commission, 2024c; European Parliament, 2024).

Interim takeaway

In batteries, the compete–cooperate–co-evolve logic is not an abstract desideratum but a transaction-cost-minimising strategy. By anchoring claims in interoperable data and co-investing in verification and reverse-logistics capacity, Europe can defend strategic autonomy while unlocking credible, cross-border circular practices with India and China (European Union, 2023; 2024a; 2024b; 2024c; GBA, 2023; IEA, 2024).

SECTOR SNAPSHOT II: TEXTILES

The importance of textiles for the circular strategy

Textiles are a high-volume, fast-turnover product category with significant environmental externalities (microfibres, chemical use, landfill/exported waste) and complex, globally distributed supply chains. For Europe, the sector is pivotal because durability, repair, and design-for-circularity can measurably bend waste curves at relatively low capital intensity, while the emerging Digital Product Passport (DPP) promises market transparency on fibre composition, hazardous substances, and recycled content (European Commission, 2022; European Commission, 2024b). Given China’s manufacturing centrality and India’s deep ecosystems for repair, sorting, and remanufacturing, textiles provide a natural testbed for standards interoperability and skills partnerships within the compete–cooperate–co-evolve triad (OECD, 2024; ICLEI, 2024).

Regulatory architecture and information governance

The EU Strategy for Sustainable and Circular Textiles (COM/2022/141) articulates trajectories for eco-design, durability/repairability claims, green-claims substantiation, and phased DPP introduction, with links to ESPR and market-surveillance instruments (European Commission, 2022; 2024a; 2024b). In April 2022, China announced a guideline to significantly increase textile-waste recycling capacity, according to the State Council’s English portal (also carried by SCIO and China Daily). India’s national-level circular-economy agenda increasingly references textiles alongside e-waste and plastics, with state- and city-level pilots in sorting and repair ecosystems (NITI Aayog, 2023). Together, these moves point toward data-rich compliance regimes in which claim verification (recycled

content, durability) and end-of-waste determinations are central to trade in secondary materials (UNCTAD, 2023).

Structure of triangular interdependence

China dominates synthetic-fibre and blended-fabric manufacturing and is rapidly upgrading recycling capabilities. India concentrates in cotton, MMF blends, repair/remake services, and increasingly sophisticated sorting, and the EU sets demand via brands/retail and is moving toward design rules, market-surveillance, and DPP-enabled information infrastructures (European Commission, 2022; ICLEI, 2024). This configuration yields (i) competition around cost, quality, and speed; (ii) cooperation opportunities in data and quality protocols for secondary fibres and durability claims; and (iii) co-evolution via shared pilots that professionalise repair/remanufacturing and integrate traceability from collection through fibre-to-fibre.

Friction points and alignment spaces

Despite the growing convergence of policy objectives, several technical and regulatory friction points still hinder the formation of seamless circular textile flows between Europe, India, and China. These challenges – together with emerging spaces for alignment – can be summarised as follows:

1. Recycled-content and fibre identity. Accurate declaration of recycled content in blended fabrics is technically challenging; mis-labelling risks consumer deception and trade friction. Harmonised test methods and DPP core fields for fibre identity and claim provenance can reduce dispute frequency (European Commission, 2024b; UNCTAD, 2023).

2. Durability, repairability, and warranty transfer. Divergent testing protocols impede recognition of durability/repair claims across jurisdictions. Converging on portable test results and minimum datasets for warranty transfer would enable cross-border refurbishment markets (European Commission, 2022).

3. End-of-waste classifications and shipments. Secondary-fibre bales and repaired garments face inconsistent classifications at borders, leading to delays or rejections. Administrative cooperation to clarify pre-approved facility pathways and documentary evidence can reduce leakage to informal processing (European Union, 2024b; ICLEI, 2024).

4. Hazardous-substance management. Inadequate data on legacy chemicals in recycled streams threatens both safety and circularity. DPP-linked substance ledgers and common screening protocols can reconcile safety with material recovery (European Commission, 2024b; OECD, 2024).

Illustrative cooperation mechanisms

Translating the triad of compete–cooperate–co-evolve into practice within the textile sector requires mechanisms that embed interoperability, transparency, and human-capital development into everyday production and trade processes. A key starting point is core-field alignment for the textile Digital Product Passport (DPP). Developing a minimum interoperable dataset – encompassing fibre composition and detection confidence levels,

recycled-content claim structures, durability and reparability metrics, hazardous-substance flags, and identifiers of certified handlers – would enable greater data comparability across jurisdictions and simplify verification for both regulators and brands (European Commission, 2024b; 2022). Building on this foundation, round-robin testing for recycled fibres could be organised among accredited laboratories in the EU, India, and China. Inter-laboratory comparisons using shared QA/QC protocols would validate analytical methods for recycled-content quantification in cotton and man-made-fibre (MMF) blends, reducing uncertainty and enhancing trust in traded secondary materials (UNCTAD, 2023; ICLEI, 2024). Further cooperation can emerge through repair and remanufacturing hubs, jointly funded by public and private actors. Such accredited centres – based in India and China but serving EU brands – would perform repair, remake, and fibre-to-fibre pre-processing under transparent monitoring, reporting, and verification (MRV) systems, with DPP-based claim portability ensuring the credibility of sustainability declarations (European Commission, 2022; ICLEI, 2024). Finally, durable collaboration depends on skills partnerships that cultivate and mutually recognise competencies in textile sorting, repair, and remanufacturing, complemented by training in DPP data handling and circular-design principles (OECD, 2024; NITI Aayog, 2023).

Collectively, these cooperation mechanisms would transform regulatory compliance into a learning-based framework, promoting shared standards, verified data, and upgraded skills that enable Europe, India, and China to co-evolve toward a more transparent and resource-efficient textile ecosystem.

Risk management and safeguards

Safeguards mirror those in batteries: (i) modular interoperability (common core, jurisdictional add-ons); (ii) IP- and brand-protection by limiting disclosure of sensitive supplier information while ensuring auditability; (iii) time-bound pilots with explicit exit ramps; and (iv) integration of product-safety and competition-law compliance to avoid collusion while enabling legitimate standardisation work (European Commission, 2024a; 2024b; European Parliament, 2024).

Interim takeaway

In textiles, the triad supports credible claims at scale. By privileging interoperability, shared test methods, and professionalised repair/remake ecosystems, Europe can reduce compliance costs, expand high-quality secondary-fibre trade, and accelerate market adoption of durable, repairable products in concert with India and China (European Commission, 2022; ICLEI, 2024; UNCTAD, 2023; OECD, 2024; European Union, 2024b).

POLICY IMPLICATIONS FOR EUROPE

Europe's circular strategy toward India and China should combine risk-sensitive protection with interoperability-oriented engagement. The objective is not only to minimise transaction and verification costs but also to build shared capabilities that expand strategic

options over time. Translating this logic into practice calls for a portfolio of coordinated policy measures rather than isolated initiatives.

A first priority lies in advancing mutual recognition of Digital Product Passport (DPP) data fields. A trilateral technical working group involving the EU, India, and China could harmonise core datasets – such as product identifiers, recycled-content claims, and repairability or durability metrics – and pilot a sandbox for machine-readable attestations. This would provide a foundation for cross-border acceptance of verified product data while preserving the flexibility for jurisdiction-specific extensions (European Commission, 2024a; 2024b).

A second domain concerns recycled-content verification and end-of-waste alignment. Establishing reference taxonomies and shared audit protocols, consistent with existing EU legislation yet adaptable to Indian and Chinese regulatory systems, would substantially reduce duplicative compliance burdens. Such convergence would also reinforce trust in circular-trade claims and improve traceability across value chains (European Union, 2023; 2024a; State Council, 2022).

Third, co-investment in urban-mining and repair infrastructure can create tangible demonstration effects. Jointly funded collection, sorting, and remanufacturing hubs in key industrial corridors – such as second-life battery facilities in Europe and fibre-to-fibre pilots in India – could link CRMA strategic projects with India’s state-level extended-producer-responsibility (EPR) funds. Transparent Monitoring, Reporting, and Verification (MRV) systems would ensure accountability and comparability of outcomes (European Union, 2024a; MoEFCC/CPCB, 2022–2024; OECD, 2024).

Finally, talent-mobility compacts and joint testbeds should accompany these material investments. Short-cycle fellowships and industry exchange programmes focused on battery-passport interoperability, recycled-fibre quality assurance, and EPR logistics would institutionalise learning and prevent technological isolation. Reciprocal recognition of competencies, combined with export-control and data-protection safeguards, would balance openness with security (IEA, 2024; GBA, 2023).

Taken together, these measures translate the triad of *compete–cooperate–co-evolve* into an actionable policy sequence. They position Europe not as a defensive regulator but as an architect of interoperable circular governance, capable of protecting its strategic autonomy while fostering credible co-evolution with its key partners.

CONCLUDING INFERENCES

The analysis demonstrates that *compete–cooperate–co-evolve* is not merely a rhetorical balance but a sequenceable governance logic for the EU’s circular engagement with India and China. In batteries, transaction-cost reductions hinge on interoperable data and verification architectures; in textiles, credibility at scale depends on portable test methods and professionalised repair/remake hubs. Across both sectors, interoperability over full harmonisation emerges as the pragmatic choice: common core data and protocols paired with jurisdiction-specific extensions.

Strategic autonomy is best advanced by combining defensive resilience – due diligence, waste-crime enforcement, diversified secondary-materials capacity – with selective alignment that builds shared capability without deep technological lock-in. Implementing the proposed pilots would create learning loops that inform standard-setting and market surveillance, lower compliance costs for firms, and expand the feasible set of circular trade. In short, by organising policies around the triad, the EU can convert rivalry into disciplined co-evolution, accelerating credible circular outcomes while safeguarding European economic-security objectives.

NOTE

For stylistic refinement and grammar correction, large language models were used as editorial tools. All content development, analysis, and writing were carried out solely by the author.

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EVOLUTION OF STUDIES OF CIRCULAR ECONOMY IN BULGARIA – A LITERATURE REVIEW

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Abstract

Over the years the scope of circular economy (CE) research has expanded and filled certain previously existing gaps. Studies in EU countries are also developing in new directions. The aim of this paper is to track and analyse the scope of published articles on CE in Scopus journals, with Bulgaria as a main country of this study. The scope of the research includes a literature review from 2015 to 2025 in areas such as economics, business and management, econometrics and finance, agricultural and biological sciences. The limited number of publications in these areas gives a reason not only to show the achieved level of articles in refereed journals on the topic of CE in Bulgaria, but also to make some recommendations for researchers and interested business circles in Bulgaria.

Keywords: Circular economy, Bulgaria, recycling, waste management

JEL: O 13, Q 01, Q59

INTRODUCTION

The circular economy is a concept that links multiple aspects – from ecological economics, through waste management to innovative engineering, smart administration and transport, or behavioral economics. The circular economy has been with a special focus of research in the last decade due to its fundamental differences with the traditional and one-way consumer concept of a linear economy (take resources-make product/service-dispose waste). Despite the success of the linear economy in the years of industrialization, since the 1960s, water, air, and soil pollution have become noticeable, especially the accumulation of plastic waste and the significant increase in carbon emissions, which are mainly from energy sources. So, our world exceeds its assimilation capacity to “digest” various kind of wastes, because of the increasing number of environmental damages. Therefore, the circular economy proves to be the appropriate alternative for preserving natural resources and reducing pollution by closing the loop (make-use-reuse-remake-recycle-zero waste). Recycling turns out to be among the priority goals of the circular economy, which, together with appropriate eco-design of products, can lead to longer and safer use of resources, their recovery, with the end result being the achievement of zero waste in the economy and the regular application of waste prevention principles.

Undoubtedly, achieving circularity quickly is not within the capabilities of every country. The introduction of a circular economy depends on the country's available natural resources, its GDP, the structure of its exports, the use of environmental technologies, innovations and environmental awareness of the society, etc. To facilitate countries, the EU

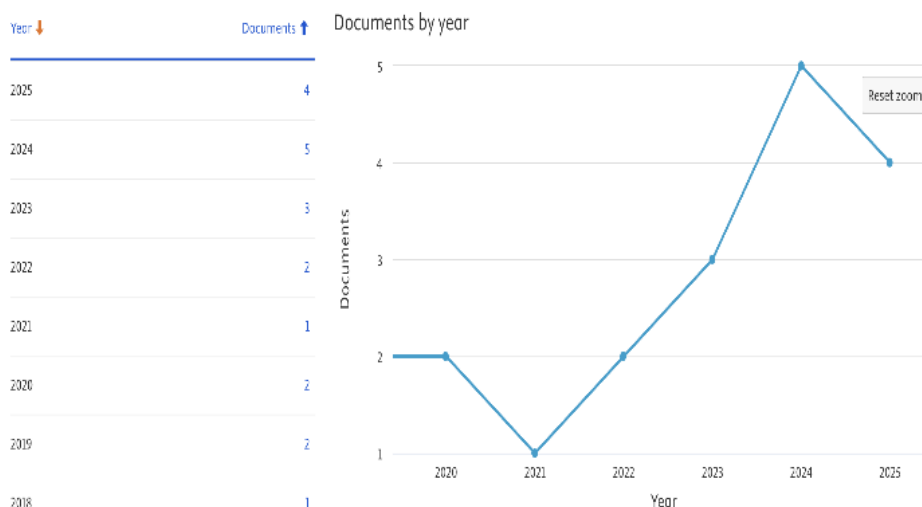
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introduces and promotes the implementation of certain waste regulations, following the principles of responsibility for resources by producers (Extended producer responsibility), who must recycle and reuse materials, or for the "Polluter-pays" principle for the responsibility of the polluter/producer. The EU is developing over 10 official documents only for the period 2014-2020, which set the path to a zero-waste programme for Europe, including Action plan for closing the loop, New industrial strategy for Europe, based on circular economy etc. An important place among these documents is for the Green Deal, the European strategy for plastics, and the Investment plan for sustainable EU. Due to the priority importance of waste management and recycling, key issues for EU countries are becoming Directive 2018/851 on waste framework about hazardous waste, reduction of food waste and maximum share of communal waste recycling (by 2035 to reach 65%), Directive 1999/31/EC on the landfill of waste and the transition period for member states (better up to 2030), Directive 2018/852 for minimal recycling goals (65% of total packaging by December, 31st 2025), Directive 2019/904 on the reduction of the impact of certain plastic products and obligations for manufacturers about the harmful effects of plastic products etc. For the realisation of circular economy package, EU countries continue the implementation of waste target review through Directive 2000/53/EC on end-of life vehicles, Directive 2006/66/EC on batteries and accumulations and waste, Directive 2012/19/EC on waste electrical and electronic equipment. The idea of EU is to help companies and consumers to make the transition to circular economy easier and faster.

The present analysis is dedicated to the role of circular economy in fostering sustainability in Bulgaria, particularly within research of Scopus database publications for the period 2018-2025. Therefore, the objective of the present study is to examine the research advanced achievements of circular economy principles in Bulgaria, so at national stratum. The limited number of publications in these areas gives a reason not only to show the achieved level of articles in refereed journals on the topic of CE in Bulgaria, but also to make some recommendations for researchers and interested business circles in Bulgaria.

METHODOLOGY

The Scopus study was conducted in September 2025. The searches covered article title, abstract evaluation and keywords on "circular economy", "Bulgaria", "recycling", "waste management". The subject is limited to Economics, Econometrics and Finance, Business and management, Agriculture and Biological Sciences. The languages are limited to English and Bulgarian. The check shows 20 scientific articles published for the period 2028-2025. After a relatively weak trend for the period 2028-2022, in the next three years the number of articles increases sharply to 5 issues in 2024. (see Figure 1)

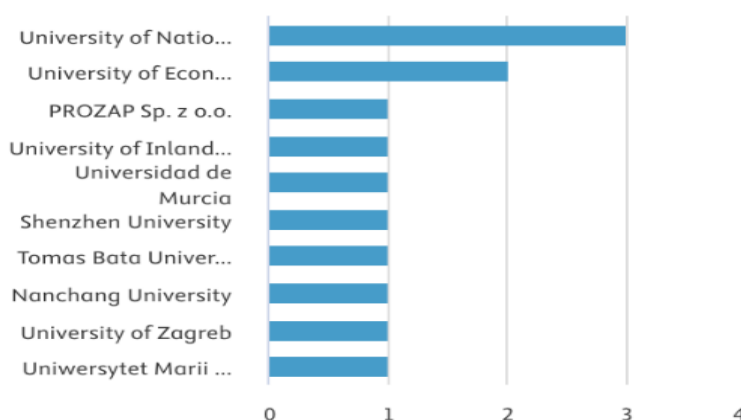


Source: Scopus, 2025

Fig. 1. Distribution of articles, per year

Bulgarian authors from the University of National and World Economy – Sofia and the University of Economics – Varna have the largest number of publications, the majority of which are entirely about Bulgaria. (See Figure 2)

Documents by affiliation

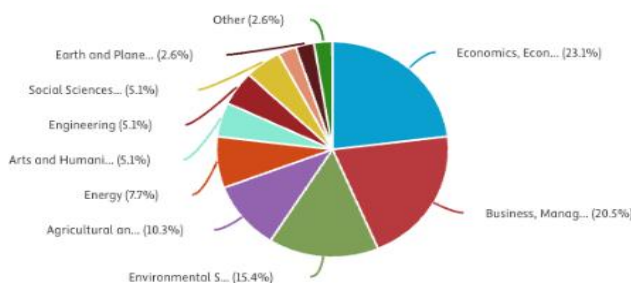


Source: Scopus, 2025

Fig. 2. Distribution of articles, per author's affiliation

The remaining articles compare mainly with Eastern European countries that are members of the EU. The largest number of articles for the period 2018-2025 are registered in the field of Economics, Econometrics and Finance (23.1%) followed by Business and management (20.5%) (See Figure 3)

Documents by subject area



Source: Scopus, 2025

Fig. 3. Distribution of articles per subject research area

The foreign teams investigating the topic are mostly interdisciplinary, representing various universities (including also from non-EU countries) and working on circular economy projects.

Main topics of circular economy research in Bulgaria

This paragraph provides a literature review of all 20 scientific articles based on the methodological framework. The scope includes recycling, waste management, material flow management, green energy and technologies, also eco-innovation, the quality of environmental policy, responsible production, specific industries and the application of the circular economy.

The study by D'Adamo et al. (2020) examines, based on Eurostat data, the end-of-life vehicles (Directive 2000/53/EC) among 28 EU Member States, including Bulgaria. The aim is to classify the performance of EU Member States by linear regression, F-test and average annual growth rate (standard parameter) also on the basis of Likert-based survey in order to outline CE policy alternatives until 2030. The issue is particularly relevant in view of the increasing volume of illegal waste. Data for Bulgaria indicate that the country is a typical example of a waste importer from Western European countries and generates high levels of recycling of wastes per unit of GDP, i.e. it has an excellent performance in achieving high levels of waste recycling. However, this does not mean that in the long-term period such decisions are valuable for the circular economy policy of the country. The responsibility of policy-makers for sustainability in Eastern European countries is extremely important. The authors point out for the correct implementation of the circular economy

paradigm. It is important to assess several interrelated factors: a) market distortions, b) environmental transparency policy (including renewable energy, material recovery, reverse logistics, collaboration for toxic substances), c) innovative technological level of the national business.

Skare et al. (2024) examine the relationship between income (GDP/capita) and recycled materials for the period 2010-2020 through correlation and panel regression. The relationship turns out to be positive for most of the countries, being clearly expressed in those with lower economic activity – Bulgaria, Romania, Hungary, Croatia. One of the possible solutions, according to the authors, is to increase the level of wages in the recycling sector.

The study by Hussain et al. (2025) points out that the circular economy is a potential bridge to the use of efficient energy resources by the public and private sectors in the 27 EU Member States, especially in view of the EU's desire to achieve climate neutrality by 2050. This issue is strongly linked to investment opportunities and the role of financial structures. Based on data from the World Economic Forum, World Bank, Eurostat, IMF etc. for the period 2020-2022, the authors develop an econometric model with panel data (C-Lasso classifier lasso) and PSTR (panel smooth transition regression). The results show that the effects of the circular economy on the energy transition of the 27 Member States are homogeneous, if financial systems are robust. Bulgaria falls into the group of countries for which the relationship is rather heterogeneous due to structural, economic, institutional and other differences with European countries that have high-value production, good infrastructure for renewable energy, effective urban solutions and appropriate solutions regarding synergy and cluster practices for the implementation of the Green Deal. At the same time, Bulgaria is among the countries that are strengthening the transition to a circular economy on their economic and business activities.

The analysis by Jakubelskas and Skvarciany (2023) also examines the capabilities of the 27 EU Member States in the context of the energy transition, including compliance with SDG 7 “Clean energy” and the use of renewable energy, including the reduction of greenhouse gas emissions. The study is important from the point of view of EU prevention of the extraction of existing limited resources. The authors note that Bulgaria is among the leaders in terms of the use of renewable sources of solar energy, which is typical for other Eastern European countries. For Western European countries, the leading renewable energy is wind energy. Bulgaria lags behind other EU countries in terms of the SDGs implementation index and the overall transition to a circular economy and sustainable development.

Dziekanski et al. (2024) also analyze the topic of the energy transition for the period 2013-2020. Using a synthetic measure for energy through CRITIC-TOPSIS method, the authors outline the slower dynamics of Eastern European countries, including Bulgaria, and the lack of some key data such as prices or environmental impacts, information on free supply from energy suppliers, etc. The problem is of utmost importance given the specifics of the energy sector in Eastern European countries and the opportunity for improving the quality of life when changing the energy mix.

Chipeva and Ivanova (2022) examine Bulgaria's transition to a low carbon economy through indicators such as greenhouse gas emissions, circular material use rate, energy productivity, resource productivity and domestic material consumption, production of value-added and exports in the environmental good, generation of wastes, recycling rate.

Since some of the data for Bulgaria is missing, the authors create an independent model for the country. The factors of greatest importance for Bulgaria are energy productivity, production of value-added and exports in the environmental goods, which also determines the direction for creating new business models, resource efficiency and greener economy.

Ivanova (2024) examines the relationship between economic growth and resource use, as well as the decoupling of the relationship between economic growth, carbon emissions and energy consumption in EU countries, including Bulgaria, for the period 1980-2023. The results show that Bulgaria has an inconsistent policy in the field of energy transformation – the country recycles less than the EU average amount, but has an unreasonably high level of waste. Bulgaria consumes a lot of material resources relative to the GDP growth rate and all business models are highly resource-intensive and poorly innovative. All these features negatively affect the competitiveness of the Bulgarian economy.

Alola et al. (2025) link the issue of environmental policy quality to carbon reduction policy. They apply many regression techniques and note that Bulgaria is among the EU countries with the largest carbon reductions for the period 2020-2021, despite some annual fluctuations. This leads to an increase in the share of used material resources such as biomass, metal ores, fossil energy resources etc. from the reuse of waste materials, which is a kind of green dividend for Bulgaria on its path to improve the quality of the environmental policy.

The extent to which EU countries are achieving the circular economy goals for the period 2010-2016 and the sustainable development goals is analyzed by Skrinjaric (2020). Using Grey relational Analysis (non-parametric model), the author divides the studied countries into two groups: a) Best CE performers- Germany, Netherlands, Denmark, France, Italy and b) Worst CE performers- Romania, Greece, Cyprus, Slovakia, Bulgaria. What is noticeably missing in the worst presented countries is a lack of knowledge and research of the circular economy principles. There are also gaps in data on key circular economy indicators. The share of best industry practices is also too low.

Another related topic is corporate environmental responsibility. Slavova and Ivanova (2019) examine a successful specific business case study in the mining industry of Bulgaria. For the period 2011-2017, the authors report an increased policy focus on the circular economy paradigm and, more specifically in efficiency of water and waste reuse. Stoyanova (2019) also notes the benefits of implementing corporate environmental responsibility analyzing different business case studies from Bulgaria. The author underlines that its implementation will lead to an increase in recycled quantity of wastes for Bulgarian business and will encourage the overall transition to social and environmental initiatives in the country.

The topic of responsible production (responsible production and extended producer responsibility, EPR based on EU Single-use Plastics Directive for zero wastes and eco-design of the products) was studied by Zhidebekkyzy et al. (2024). The authors studied for the period 2010-2022 totally 27 manufacturing enterprises (over 16 years old, mainly large companies), including also Bulgarian enterprises. They summarize the sectors of production where the European EPR policy can be applied, namely: Packaging Waste- EU Packaging and Packaging Waste Directive (1994), Electronic Waste-Waste Electronic and Electric Equipment Directive (2012), Batteries and Accumulators-Batteries Directive (2006), Vehicles-End-of-

Life Vehicles Directive (2000). The mainly studied Directive is the Waste Electronic and Electrical Equipment Directive. The observed data are circular material use rate, promulgation time, firm age, asset trend, ROA, amortization and debt-to-equity ratio. Regression analysis and additional calculations show that the implementation of an EPR policy is closely related both, to the circular material use rate and the level of reused or recycled materials. The purchase of assets is assessed as a factor encouraging the financial and investment strategies of all companies towards a circular economy. The data show significant differences between all 27 companies, more clearly expressed in the Czech Republic, Poland, Slovenia, Romania, Estonia, Hungary and Bulgaria.

A comparative analysis between Bulgaria and Slovakia for the period 2014-2018 in 8 companies of the wood-processing industry was conducted by Kristakova et al. (2021). Data envelopment analysis (DEA) and Malmquist productivity index (MPI) have proven higher efficiency in the implementation of environmental practices, technologies and innovations in the wood-processing industry in Slovakia. Different levels of costs have been observed, including labor costs. In Bulgaria, the work process organization does not meet the expectations of effective resource management, efficient operational management, furthermore the qualification of the workforce is at a very low level.

Dimitrova et al. (2024) study another sector, that of winemaking. Using Fuzzy AHP analysis, the authors assess 6 main and 19 sub-barriers to implementing the principles of a circular economy, identified by the wine business in Bulgaria- by representatives of the National Association of Bulgarian vine-growers. The results show that environmental and economic barriers are leading for representatives of the wine sector in Bulgaria. The lack of experience, knowledge, and appropriate education in the implementation of circular economy policies in the sector are highlighted.

In their study, Kasztelan et al. (2025) make a linear model for panel data for the period 2010-2019, through which they aim to assess the impact of patents related to waste management and recycling in the EU. Using Eurostat data, the authors indicate that Bulgaria is among the countries with the lowest patent activity (together with Greece and Croatia). The factors that have an impact are circular materials use, number of patents, GDP per capita, educational level, total environmental taxes and old-age dependency ratio (number of persons aged 65 and between 15-65). The lagging behind of countries such as Bulgaria confirms the observations of other authors that in terms of the circular economy the EU is moving at three or four speeds (“three or four-speed Europe”). One of the reasons for Bulgaria's poor performance is the low share of R&D personnel and researchers in total business employment, especially in terms of implementing environmental projects for eco-innovations in energy, plastic recycling, material footprint etc. There is a lack of innovative spinoffs or selling/licensing IPRs, fruitful connections with universities or research centers. Similar conclusions are drawn by Cifuentes-Faura (2025) regarding the progress in the implementation of the 17 SDGs in Bulgaria and the introduction of environmental practices.

Eco-innovations are also a subject of circular economy research, especially in the food industry of Bulgaria. A team from the University of Economics-Varna, Pashova et al. (2018) examined the impact of edible coating in the food industry among 168 consumers in

Bulgaria. The idea is to assess the impact of this eco-innovation on consumer perceptions by assessing food safety management and the reduction of natural loss in foods. This approach is important for the promotion of waste-free environment by Bulgarian companies.

The topic of waste management is also key area of study in several articles. Markovic et al. (2023) confirm through Grey relational analysis the low level of waste management in Bulgaria, similar to Romania, Cyprus, Slovakia, Croatia, Malta and Poland. Angelis-Dimakis et al. (2022) present results on waste management under the SWAN project (2020-2021), where Cyprus, Bulgaria, Greece and Albania participate. On the Bulgarian side, the partner is the Bulgarian Industrial Association, and another 108 industrial units have been studied. Best practices for waste reuse are observed in the wine sector, cement production, brick production, cardboard and paper production, and the wood industry in the country.

A study by Zhu et al. (2023) for the period 1990-2019 conducted in Bulgaria, Croatia, Poland, Romania on the life cycle assessment of material flows aims to demonstrate to what extent it influences circular economy performance, waste management and recycling practices. Bulgaria lags significantly behind the other three countries in terms of resource use, material productivity, stock dynamics and decoupling trends.

CONCLUSION

This paper tracks the direction of scientific interest in circular economy research in Bulgaria, according to publications in Scopus journals for the period 2018-2025. The approach of this paper can be a good communication channel for the available variables and indicators for the circular economy in Bulgaria and the level of results achieved in a comparative European plan. A positive trend that the study tracks is the expansion of the scope of circular economy research in Bulgaria over the years. The most frequently researched topic for the country turns out to be the transition to green energy, in the context of European policy. The analysis of circular economy policy in Bulgaria is closely related to that of the EU, mainly with its statistical database and regulatory documents. However, the publications do not outline stable trends on most selected topics – recycling, waste management, etc., but the tendency in all scientific articles is to present recommendations for encouraging the implementation of circular economy principles in Bulgaria by various representatives of the public and private sectors. In most of the areas studied, especially those related to innovation and eco-innovation for a circular economy, Bulgaria is seriously lagging behind compared to EU countries. The country is often positioned as an Eastern European country and falls among groups of countries with weaker performance in terms of R&D achievements for a circular economy. Bulgarian authors have a significant presence in Scopus publications for the research period – both individually and in teams with foreign researchers. The majority of their research is primarily related to specific industries. Econometric analyses are a valuable resource in all scientific articles – they range from regression models or panel data analysis to the construction of stand-alone econometric models for the needs of the specific study. Future studies could extend the time horizon and track the progress of the transition into circular economy in Bulgaria comparing the past with the present or future research steps.

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THE SPECIFIC INFLUENCE OF EMOTIONS ON TOURIST BEHAVIOR

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Abstract

The tourism business is specific and is affected by a number of changes, both dictated by digitalization and by changes in the behavior of consumers and tourists in particular, and by the ever-changing competitive environment. After the changes that occurred during the COVID – 19 crisis, the tourism sector is witnessing the specific impact of emotions on the behavior of tourists, which often requires a specific reorganization of the various processes that form the company's strategy. An important goal in the management of this type of business is the presence and management of building and maintaining competitive advantages and the reshaping of different approaches to the presence of different tourist markets through the prism of emotional impact.

A major emphasis in the evaluation of tourist behavior and success is precisely the achievement of a high degree of tourist satisfaction and amazing and memorable experiences.

Keywords: Emotions, Tourism, Business, Digitization, Strategic decisions, Tourist behavior

1. INTRODUCTION

Even in the era of digitization, consumers have numerous desires for purchasing a variety of goods and using services, but often these desires are latent. Within the human organism, there is always a conflict and understanding between the emotional and the rational. The rational mind is the way of thinking that we usually consciously perceive: it is stronger when it comes to attention, reflection, judgment, and reasoning. However, alongside it exists another cognitive system, impulsive and powerful, sometimes even illogical – the emotional mind. The dichotomy between the emotional and the rational approaches the popular division of "heart" and "head". Knowing something "in your heart" gives you a different confidence, a deeper sense of security than just thinking with your rational mind. There is a continuous gradation between rational and emotional control over the mind, the more intense the feeling, the stronger the emotional mind becomes – and the weaker the rational one. This scheme seems to be attributed to the millennia-old evolutionary advantage of emotions and intuitions unlocking an immediate response in situations where our lives are exposed to danger, and even a moment of thought could cost us dearly (Goleman, D., 2011).

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These two sides of the mind – the emotional and the rational – work in complete harmony for most of the time, combining their different cognitive methods to guide us through the world. Usually, there is a balance between them – emotions provide information to the operations of the rational mind, and it, in turn, nuances and sometimes restrains the emotional impetus. Nevertheless, the two sides of our mind are only partially independent.

In most moments, these two sides are in delicate harmony, where emotions are of paramount importance to thought, and thought is crucial for emotions. However, when emotions run wild, the balance disappears: the emotional mind rises and overpowers the rational one (Goleman, D., 2011).

The aim of the article is to present the specific influence of emotions on tourist behavior.

2. Content aspects of emotions

In the rational model of consumer behavior, it is explained that consumers are not emotionally influenced by the products available on the market, and there is no emotional context in the shopping process. Studying the emotions of consumers is crucial as it helps marketers interpret perplexing aspects of consumer behavior by understanding emotional influences.

By its nature, emotion could stimulate interest and desire for a product, influencing intentions and decisions for future product purchases.

Jon Elster dramatically summarizes the significance of emotions as follows: "Without emotions, nothing would matter. People without emotions would have no reason to live, nor to die. Emotions are the essence of life. Emotions are the most important asset and what connects us to other people. Objectively speaking, emotions aid in understanding many forms of human behavior, and it could not be understood if not viewed through the prism of emotions" (Elster, J., 1998).

Elster suggests that spending on museums, operas, and the use of sports facilities can be justified from the perspective of the emotional experiences they provide to the wider public. Emotions permeate all consumer purchasing decisions, even when compromises are made. He posits that studying consumer behavior without considering emotions is based on simpler approaches and calculations. This understanding holds true even in situations where consumers purchase goods primarily driven by their emotions.

For all consumers, emotional experiences shape the system of values. These values reflect what consumers strive to preserve or enhance, such as freedom, justice, survival, the desire to be wealthy, and to have high self-esteem. The presence of any discrepancy between what consumers desire and the actual reality generates the potential for arousing their emotions.

The deep concern that consumers express in the market when purchasing goods gives rise to emotions, energy, motivation, and compels them to want and defend their values. Emotional excitement arises from everything that affects us in our daily lives. This does not mean that people cannot resist emotions, but rather that when it comes to ethics, emotions are strong and challenging to overcome. In many cases, consumer behavior is

rationalized through emotions. Emotions signal the meaning or personal significance of things. When consumers say something is meaningless, it means it lacks emotional significance. Emotions, along with trust, equate to loyalty (Dimova, N., 2013).

The human mind in the Western context is understood from two different perspectives. In the first one, the human mind is seen as consisting of separate and independent abilities or faculties that reflect individual processes, each with its own inherent physical properties that are innate.

The second perspective considers the human mind as something that constitutes a continuous flow of physical activity or sequences of mental states caused by a set of common processes (Barrett, L.F., Russell, J.A., 2015).

Emotion is defined as a "complex reaction of a person, arising from evaluations of significant interactions with the environment, leading to states of arousal, attentional focus, facial expression, action readiness, and behavior" (Lazarus, R.S., 1991; Levine, E.L., 2010).

Emotions are short-lived, intense, and typically associated with a specific referent that can activate responsive behavior (Cohen, J., Areni, C. 1991). Emotions are a crucial part of the human experience and play a critical role in an individual's psychological state and physical well-being (Pressman, S.D., Gallagher, M.W., Lopez, S.J., 2013; Richman et al., 2005). In the tourism industry, one of the most sought-after outcomes of travel is the elicitation of positive emotions such as joy and happiness (Filep, S., Deery, M., 2010; Hosany, S., Prayag, G., 2013; McCabe, S., Johnson, S., 2013). While many tourism experiences are positive, tourism can also evoke negative emotions such as sadness or anger, especially for travelers engaging in specific types of tourism activities (Biran, A., Poria, Y., Oren, G., 2011).

3. Relationship „emotions – tourist behavior“

The research question is related to the possibility to account for the influence of emotions on tourist behavior by indicating a literature review on the essence of emotions, the factors that influence the development of tourism business and the role and importance of emotions in the behavior of tourists.

Research limitations are related to the inability to make a comprehensive analysis of consumer behavior worldwide

The practical contributions of the authors are related to offering a different view of the influence of emotions on tourist behavior, through the prism of the different behavior of tourists in Europe.

The reasons and consequences of emotions in tourism are not always accurately assessed.

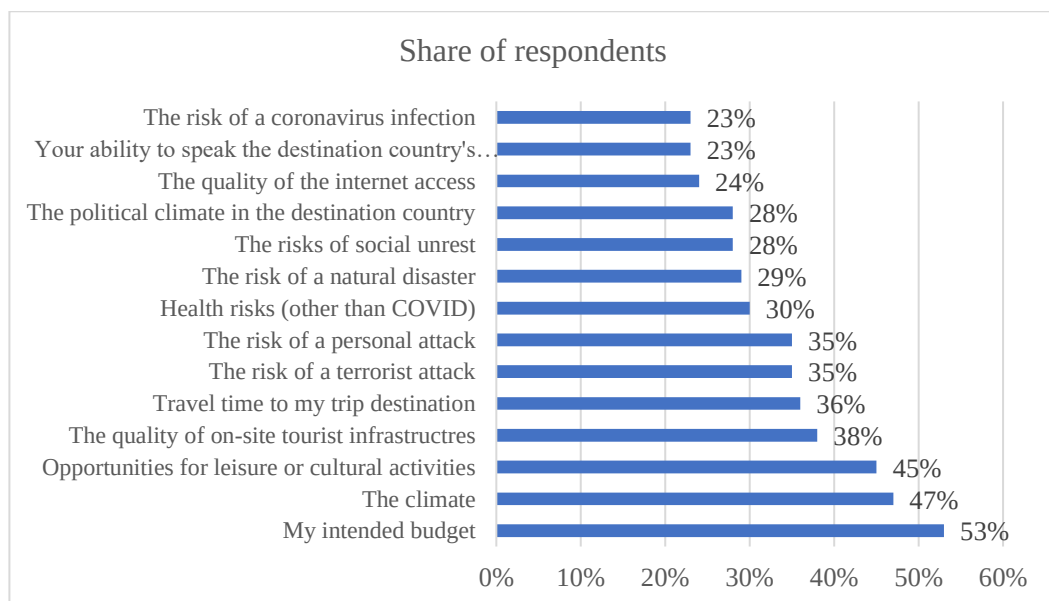


Fig. 1. Main factors that play an essential role when choosing a destination for a summer holiday trip according to adults in Europe as of April 2023

Source: INDUSTRIES & MARKETS Vacation travel behavior in Europe (<https://www.statista.com/>)

Therefore, for example, Figure №1 illustrates the main factors that play a significant role in the choice of a summer vacation destination for adults in Europe as of April 2023. Clearly highlighted are the anticipated budget and climate, followed by various types of risks associated with tourist travel, which, in turn, evoke different emotions in tourists.

A series of studies categorize tourists' evaluations of their experience, representing the main sources or determinants of emotions (Hosany, S., 2012; Watson, L., Spence, M., T., 2007; Zheng et al., 2019). Additionally, previous research applies the destination attribute model (Kim et al., 2020) and the regulatory focus theory (Song, J., Qu, H., 2019) to investigate the causes of emotions. Regarding the consequences of emotions, existing studies show a close connection between tourists' emotions and their behavior at all stages of the decision-making process. In the pre-travel stage, tourists' emotions affect their inclination toward imagination (Hosany, S., Buzova, D., Sanz-Blas, S., 2020) and decision-making behavior. On-site emotions during travel influence tourist satisfaction and loyalty behavior, such as the intention to revisit/reconsider and positive/negative word-of-mouth transmission.

The emotion of tourist consumers is a measure of how they feel during a tourism journey. It is important to note, however, that the dynamics behind customer emotions are extremely complex to analyze. The growing significance of tourist consumer emotions can be summarized as follows: customers often do not remember the quality of individual services, but they always remember how they felt during their visit to a destination. Typically,

the difference between good and excellent business results is expressed precisely in these experiences.

Furthermore, it should be clarified that customer emotions inspire their travel purchase decisions. Modern research indicates that the emotions of tourists are important indicators not only for individual trips but also for the likelihood of inspiring other consumers to undertake the same journey.

According to a study of tourist consumers, emotionally-driven travel purchases lead to spending twice as much as customers who are merely satisfied with the respective trip. Additionally, customers with strong emotional connections to the brand are 52% more valuable than customers who are simply satisfied (Magids, S., Zorfas, A., Leemon, D., 2015).

Understanding the emotional engagement of customers with a particular brand helps in building loyalty and high lifetime value.

According to a study on consumer experiences, the emotions customers experience when interacting with a business vary from positive emotions to negative emotions and include adoration, gratitude, ambivalence, excitement, and anger. Additionally, people experiencing negative emotions are 30% less likely to buy another product, but adoring customers make repeat purchases, expressing a 93% trust level (Qualtrics, <https://www.qualtrics.com/uk/?rid=ip&prevsite=en&newsite=uk&geo=BG&geomatch=uk>).

Defining the moments when customers experience these emotions during travel allows managers to better leverage emotional connections to improve business outcomes. In this sense, the focus is on identifying moments that contain the highest emotional load, whether these emotions are positive or negative. For instance, if customers frequently express excitement during the payment process, it may discourage them from making repeat purchases. Conversely, if they feel gratitude after receiving a loyalty discount code, they might be inclined to spend more on future travels.

Next, it should be noted that tourist customer *satisfaction* cannot be considered a complete reflection of how effectively an organization meets their expectations. Establishing a clear link between customer satisfaction and the success of the corporate strategy for generating experiences is complex. For instance, customers may be very satisfied but entirely unmotivated to undertake additional travels or recommend the company to others. In this case, the combination of satisfaction and building an emotional connection is crucial – this way, both sales and recommendations from satisfied customers who remain loyal to the brand over time are increased.

According to the 2022 Global Consumer Trends, modern consumers want brands to build an emotional connection with them and demonstrate an understanding of how they feel. More than 60% of surveyed individuals indicate that they want companies to care more about them, which would increase their purchases. Measuring customer satisfaction is not as challenging as measuring emotions. Often, consumers cannot clearly and fully describe how they feel, as they may not always understand their own unconscious emotional reactions and experiences. As a result, organizations need to use omnichannel platforms for analysis to clarify the emotional connection that customers establish with a specific company and journey. This is possible through the collection of extensive data on consumer emotions through surveys and subsequent precise analyses of moods,

experiences, and overall behavior in tourist destinations. The key *recommendations* here are focused on several key actions aimed at creating stable emotional connections with tourist consumers – understanding their emotions, improving their experiences, authenticity, trust, empathy, and customer care.

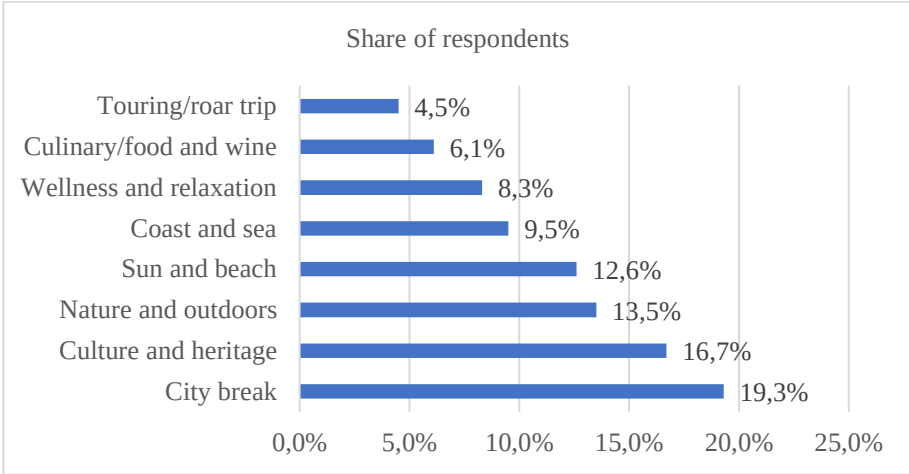


Fig. 2. Share of Europeans planning to take a leisure overnight trip domestically or in Europe in the next six months as of September 2023, by type of trip

Source: INDUSTRIES & MARKETS Vacation travel behavior in Europe (<https://www.statista.com/>)

For instance /according to Fig. 2/ the percentage of Europeans planning to take a leisure trip with an overnight stay in the country or Europe in the next six months as of September 2023 varies. The reasons that will evoke different emotions are diverse and clearly stand out in the figure.

On the other hand, it should be noted that in refining the understanding of tourists' emotional experiences (both positive and negative), the emotions themselves vary from one type to another (Hosany, S., Gilbert, D., 2010; Parkinson et al., 2005).

For example, cultural differences impact the way communication, affect, and the emotional significance of tourist services are perceived, shaping the ways in which tourists experience, express, organize, and modulate their emotions (Parkinson et al., 2005). Existing research on cross-cultural assessments of consumer emotions shows significant differences between Western and Asian consumers (De Mooij, M., Hofstede, G., 2011). Specifically, consumers from collectivist (e.g., Chinese consumers) and individualist (e.g., American consumers) cultural value systems differ in emotional expression (Oyserman, D., Coon, H.M., Kimmelmeier, M., 2002), experienced emotions (Davis, L., Wang, S., Lindridge, A., 2008), and emotional accessibility (Markus, H. R., Kitayama, S., 1991).

Negative emotions themselves can vary across different directions, even in individual leisure trips and medical tourism.

The relationship between the perceived cause of a particular result or event (negative experience in tourism) and its emotional consequences (negative emotions) and behavioral outcomes (blog post about the negative experience in tourism) is indirect and depends on the perceived characteristics or dimensions of the cause (e.g., service failure or rude staff) (Hareli, S., 2014).

From another perspective, it is important to study tourists' perceptions of the impact of tourism.

In the field of tourism, the study of attitudes of local residents towards tourism is one of the most systematic and well-researched areas. The positive impacts vary from better access to festivals, fairs, and events to improvements in public health and safety for tourists. On the negative side, impacts range from increased traffic and crowds to higher living costs, environmental degradation, and health consequences for local residents.

As a whole, tourism activities related to experiences are extremely diverse, as production conditions dynamically change. The production is highly strategic, products are customer-oriented, and experiences are generated as added value to consumption. At the core of memorable moments for tourists lies innovation, which we consider as a systematic activity characterized by specific organization. This way, new economic activities are created. In this sense, we will outline the trends in the experience economy during tourist travels and present various theoretical claims and models derived from real empirical cases, focusing on the example of the European region.

We cannot overlook the fact that over the last four years (2020-2023), the tourism market has undergone a significant transformation in its essence, and this change was not anticipated. Tourists are traveling *more frequently, to both shorter and longer distances, including exotic destinations. They express interest in less-known tourist spots and undeveloped destinations, show a particular attitude towards food, and seek recreational effects. There is a considerable focus on experiences*, meaning everything that turns into pleasant memories and remains in their long-lasting memory.

Emotions themselves create specific experiences.

It is important to emphasize the strong connection between the tourism sector in recent years, which is established with the experience economy. The development of the tourism industry occurs in continuous interaction with the development of the experience economy, as emotions play a significant role in motivating travel consumers.

In this context, it should be noted that the experience economy is developing extremely rapidly. According to a study by Momentum Worldwide, 76% of surveyed consumers worldwide prefer to spend their money on experiences rather than goods. This economy aims to provide high-quality value and highly differentiated services. While it is a well-known fact that tourism providers are the main entrepreneurs in the experience economy, the sector is quickly expanding, encompassing brands, pubs, restaurants, and other activities that aim to build better relationships with consumers by providing them with memorable moments. To make an experience unique, it must include the following characteristics: escape from everyday life, exclusivity, connection with others, meaning, and digital sharing (Momentum, We Know Experiences 2.0).

We must take into account that experiences can be created by various industries beyond tourism, including culture, art, information technology, entertainment, and others, often accompanying the production of goods and services. According to the founders of the concept in specialized literature, Pine and Gilmore (1999), experiences are a widely applicable economic activity associated with every form of production. Our perspective on this matter is that the creation of experiences primarily serves a creative-artistic function. In the context of business, when conditions for it evolve – such as productivity, technology utilization, innovations, and experience generation – it remains invisible. These opportunities, driven by intense competition, facilitate the individualization of experiences and the specialization of management, innovation, and production systems.

The EU, being the largest tourism counterpart in the world and simultaneously possessing the greatest potential for international tourism spending, has reshaped understandings of successful tourist packages. At the core of customer orientation and the systematic organization of innovative activities in the tourism offerings of companies are the new values in tourism. This includes perceiving the product as a whole, built from experiences, added value, and high-quality service. Strategic thinking in increasing productivity is crucial here, aiming to meet consumer expectations and respond to price competition.

In this context, it is noteworthy that there exists a project named "Experience", valued at 24.5 million euros, co-financed by the European Regional Development Fund (16.9 million euros) through the Interreg France (Channel) England program. This initiative, spanning the period from 2019 to 2023, aims to attract visitors beyond the active season through an innovative approach, creating "sustainable experiential tourism". The project covers six areas in England and France: Norfolk, Kent, Cornwall, Pas-de-Calais, Compiègne, and Brittany (Experiential tourism to extend the visitor season, <https://www.tourismexperience.org/>).

Furthermore, it is essential to note that tourists are losing interest in mass package tours as they seek individual, unique, and authentic experiences that they can share with their families and friends. Authentic experiences are original, memorable, involve active participation, and show respect for residents and nature (Good Tourism Institute, <https://goodtourism.institute.com/library/experience-economy/>).

A successfully designed experience has the following characteristics: it evokes pleasure, positive emotions, or sensations; provides an opportunity to gain new knowledge and skills; encourages beneficial interactions with other people.

Good experiences also stimulate the five senses, and to become memorable, they need to focus on engaging multiple senses – sight, hearing, touch, smell, and taste. For example, the sounds of birds or local musicians, the aroma of herbs or plants, and the taste of local dishes.

The intensity of the experience is gaining increasing importance for tourist satisfaction. The same applies to any form of satisfaction that allows consumers to fulfill their deeper internal ambitions and dreams, as well as to affirm their social success or *savoir-vivre* during travel. At the core of the trend toward the pursuit of luxurious experiences by tourists is the idea that recreational activities contribute to the development of new skills, cultural enrichment, the formation of different awareness, or even personal character (Foresight

Factory, 2019). We can assert categorically that first-class pleasant experiences have a lasting impact on personal perspective and transformation, viewing them as an investment in personal development.

Indeed, in the end, one should not overlook the revenues that companies in the tourism industry can generate by leveraging emotional messages that influence tourist behavior.

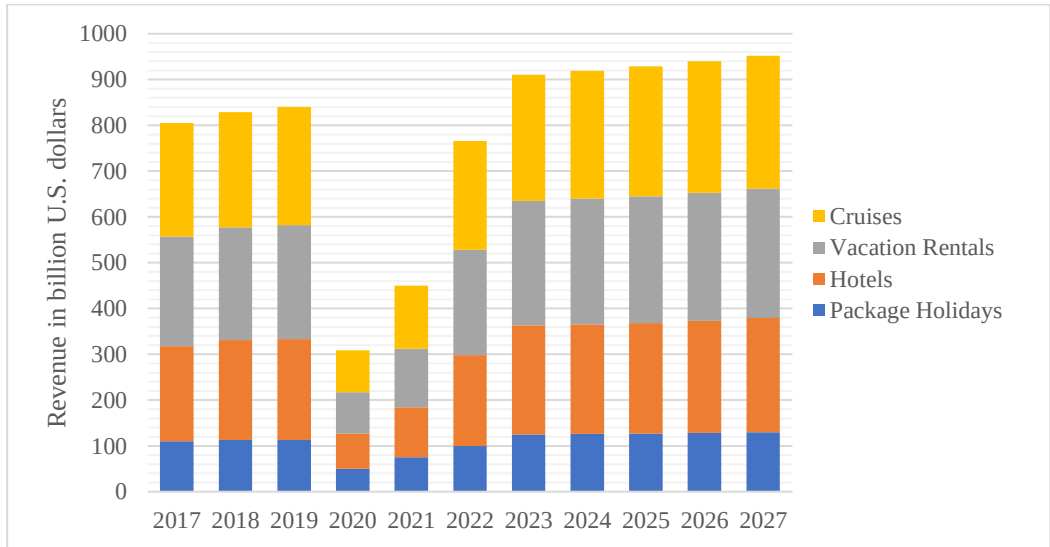


Fig. 3. Revenue of the travel and tourism market in Europe from 2017 to 2027, by segment (in billion U.S. dollars)

Source: INDUSTRIES & MARKETS Vacation travel behavior in Europe (<https://www.statista.com/>)

The chart clearly shows the revenues of the travel and tourism market in Europe from 2017 to 2027, with a particular dynamic evident in various types of tourism.

4. FUTURE RESEARCH DIRECTIONS

Future research directions are linked to conducting a study related to emotional travel in different regions of Bulgaria and Western Europe. Concurrently, the concept of tourists' emotional experiences can be further developed in the context of sustainable development in various countries and tourist destinations.

5. CONCLUSION

In conclusion, if we were to forecast, *future business models* in tourism will be based on the "good experience". Creating experiences and emotions is the powerful catalyst that will stimulate and enhance the tourism offering. Tourists are highly informed and have high expectations, necessitating the introduction of a differentiating factor. Creativity in creating experiences is part of the solution to this challenge. The quest for innovative and

experiential travel connects tourists emotionally to the destination. Tourist circuits, interactive programs, and personalized services are just some of the possibilities to enrich added value for tourists. Through a creative approach and offering unique experiences, tourism revenues increase, and responsible destination visits are promoted.

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DIGITAL SOLUTIONS FOR SUSTAINABLE LOCAL GOVERNANCE: THE ROLE OF ARTIFICIAL INTELLIGENCE

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Abstract

In the context of dynamic digital transformation and continuously rising public expectations, the need for local self-government bodies to adapt to new technological realities is becoming increasingly urgent. In particular, the capabilities of Artificial intelligence (AI) represent a kind of milestone in achieving the much-desired sustainable development. Through the automation of routine processes, advanced analysis of large volumes of data, and the application of predictive models, AI could contribute to better planning, informed decision-making, and proactive communication between institutions and local communities. Beyond the technological aspects, digital transformation also implies a cultural shift in governance – rethinking processes, enhancing administrative capacity, and fostering innovation. In this context, the sustainable development of local self-government is not limited to the introduction of new technologies but requires a systematic approach to change – including the development of digital skills, ensuring cybersecurity, protecting personal data, and guaranteeing equal access to electronic services. This study explores the potential of AI as a catalyst for sustainable governance at the local level and presents good practices and challenges related to its implementation in the context of the digital society.

Keywords: sustainable development, local self-government, artificial intelligence, administrative services

JEL: H7, Q2, F6

INTRODUCTION

The Organisation for Economic Co-operation and Development (OECD) report “Strengthening the Innovative Capacity of the Public Sector of Bulgaria 2024” presents a systematic analysis of the opportunities and constraints related to innovation development within the Bulgarian public administration. The main conclusion is that the public sector possesses significant but insufficiently developed innovation potential, while the lack of strategic coordination, resource deficits, and limited staff skills hinder its effective realization. The report emphasizes that only 19% of Bulgarian citizens expressed trust in the national government in 2022, highlighting the need for a new approach to public governance (OECD, 2024).

Although several initiatives have been undertaken – related to digitalization, improvement of public services, and administrative efficiency – they remain fragmented and predominantly follow a top-down approach. A survey of over 3,700 civil servants revealed that

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more than half had participated in innovation projects over the past two years, yet lower-level employees were rarely involved (OECD-OPSI, 2024).

Key obstacles include limited access to digital expertise and data, skill shortages, insufficient incentives for transformational innovations, as well as the absence of systematic monitoring and evaluation mechanisms (OECD-OPSI, 2024). It is evident that although institutional mechanisms such as innovation networks, partial administrative reforms, and a willingness to change the system exist, their effectiveness remains limited.

In this regard, the OECD recommends the creation of a unified national vision for the role of innovation, integrated into the National Development Plan “Bulgaria 2030”, along with the establishment of a central mechanism for strategic coordination of public sector innovation. The report also proposes the introduction of a central fund for financing transformational projects, the development of a framework for monitoring and evaluating innovations, and the implementation of training and competence development programs targeting all levels of public administration. Particular importance is attached to identifying and applying new incentives for civil servants, including the integration of innovation-related contributions into performance appraisal and career development systems (OECD-OPSI, 2024).

In turn, the eighth edition of the Index of Administrative Capacity of the State Administration of the Republic of Bulgaria (2024)¹ reveals concerning results. The capacity assessments of nearly all public institutions have declined – not only compared to the previous year but also over the long-term retrospective period (Borisov & Gospodinov, 2025).

Table 1. Average Scores of the Administrative Capacity of Executive Authorities, 2017–20252

Administration	2017	2018	2019	2020	2021	2022	2023	2024
Ministries	2.87	2.92	3.14	3.19	3.13	2.72	2.96	3.03
State Agencies	2.77	2.70	2.89	3.18	2.98	n/a	2.79	3.06
Executive Agencies	2.53	2.78	2.63	2.69	3.04	2.78	2.68	2.94
Administrative Structures of the Executive Power	2.78	2.81	2.79	2.84	2.89	2.94	2.99	2.71

¹ An annual analytical report on the effectiveness of the public administration, based on a survey of representatives of executive authorities from all groups of the state administration, as well as socio-economic partners of the public sector.

² Note: The formula is based on the capitalization of the values of weighted average scores and is expressed as follows: $ACIT_n = ACIT_{n-1} \times ACV_{Tn} : ACV_{Tn-1}$, where: $ACIT_n$ is the Administrative Capacity Index for year Tn_nTn ; $ACIT_{n-1}$ is the index level for the previous year; ACV_{Tn} is the average administrative capacity score for year Tn_nTn , calculated as the weighted mean across all groups of administrations and all evaluation criteria; ACV_{Tn-1} is the average administrative capacity score for year $Tn-1\_nTn-1$, also calculated as the weighted mean across all groups of administrations and all evaluation criteria.

Administration	2017	2018	2019	2020	2021	2022	2023	2024
Administrative Structures of the National Assembly	2.75	3.11	3.18	3.11	3.15	3.52	3.28	2.85
Specialized Territorial Administrations	2.54	2.64	2.75	2.68	2.75	2.72	2.61	2.71
Regional Administrations	2.63	2.94	2.51	2.56	2.62	2.57	2.56	2.81
Municipal Administrations	2.88	2.99	2.87	3.03	3.13	2.84	2.91	2.44

Source: Borisov & Gospodinov (2025).

The data in the table indicate a significantly lower assessment of the administrative capacity of municipal administrations. This inevitably affects the overall result for administrative capacity, as municipalities account for the largest proportion in the calculation of the weighted score.

It is precisely this anomaly, and the search for reverse mechanisms of influence, that have prompted the present study. The applied methodology includes a systematic review of existing research, a comparative analysis of good practices from OECD member states, a quantitative and qualitative analysis of the Administrative Capacity Index for the period 2017–2024, as well as the author’s own observations of municipal administrations that were the subject of previous studies. The approach is interdisciplinary, combining statistical and sociological methods to ensure a high degree of validity and reliability of the results.

In this context, the focus of the research is directed toward the applied field of innovation as an optimal potential for intervention within the system of local self-government. Emphasis is also placed on digitalization, the use of open data, and the implementation of artificial intelligence to improve decision-making processes and enhance citizen engagement. The study aims to formulate practically applicable recommendations that could not only rehabilitate the image of local self-government but also contribute effectively to achieving sustainability.

The Organisation for Economic Co-operation and Development (OECD) asserts that the integration of artificial intelligence into public administration is emerging as a strategic instrument for enhancing efficiency, transparency, accountability, and civic participation (OECD, 2019). However, attitudes within local self-government toward the potential of artificial intelligence and the need for its integration into operational processes differ considerably.

ATTITUDES IN LOCAL SELF-GOVERNMENT TOWARD ARTIFICIAL INTELLIGENCE AND ITS POTENTIAL

Over the past decade, artificial intelligence (AI) has established itself as a key driver of transformation in both the private and public sectors worldwide. Nevertheless, attitudes toward AI at the level of local self-government in Bulgaria remain rather fragmented – often cautious, yet increasingly marked by an awareness of its potential benefits. The author’s observations of these attitudes reveal specific interdependencies between

technological capabilities, administrative capacity, and the social context in which municipal structures operate.

Some local governance teams show interest in AI as a tool for optimizing services related to resource management, transportation, environmental monitoring, or citizen communication. Such attitudes are primarily motivated by examples from European practice, where intelligent solutions support the development of “smart cities.” On the other hand, a significant proportion of municipal leaders view AI with skepticism – mainly due to limited budgets, a shortage of qualified personnel, and distrust toward new technologies that may be perceived as threats to employment or as unnecessary “innovation extravagance.”

Attitudes toward AI are also strongly influenced by the absence of a clearly articulated national strategy for AI implementation at the local level. While the European Union has been developing regulations and ethical standards, in Bulgaria these processes are often perceived as a form of external pressure rather than an organic component of local self-government development. This, in turn, generates institutional inertia and leads to limited proactivity – local authorities tend to wait for centralized guidance instead of experimenting with local initiatives.

Attitudes in local self-government toward AI are further shaped by the political culture of interaction between citizens and institutions. Where trust in local authorities is low, the introduction of such innovations risks being perceived as “another instrument of control” or as a symbolic measure without tangible impact on service quality. Conversely, in municipalities with higher levels of citizen participation and established traditions of digitalization, there is greater openness to innovation, including AI, as these technologies are viewed as opportunities to enhance transparency and efficiency.

Despite variations in attitudes, the objective potential of AI for local self-government is considerable. Foremost among these is predictive analytics – the use of algorithms to anticipate demographic and social trends, which could support the planning of administrative services, for example. Secondly, AI can contribute directly to the management of routine daily operations, such as intelligent lighting, waste management, and citizen communication (e.g., chatbots and automated civic reporting systems), all of which could significantly improve efficiency and reduce administrative burdens for citizens.

Furthermore, AI-based systems could be highly effective in improving the outcomes of risk prevention and management measures. Electronic data analysis systems can, for instance, assist in crisis management during floods, earthquakes, or other environmental emergencies.

Undoubtedly, the advantages of AI-based systems are numerous, although not yet fully recognized by political elites at the local level. At the same time, several critical limitations exist. Foremost among these are the high initial costs of procuring and implementing such technologies in municipalities. Beyond financial constraints, a major issue is the lack of digital literacy and trained personnel at the local level. There is also a risk that technologies may be implemented only formally, without genuine integration into management processes. Moreover, the absence of a local ethical framework raises concerns about data protection and the potential for misuse when systems operate with sensitive or confidential information.

In this context, attitudes within local self-government toward AI systems in Bulgaria can be described as ambivalent – simultaneously filled with hope for modernization and constrained by structural limitations. The key to transformation lies in building institutional and human capacity, coupled with clear standards for ethical and transparent application. If local self-government succeeds in erasing the stigma surrounding artificial intelligence and transforming it from an abstract technological concept into a concrete tool for solving local problems, attitudes are likely to evolve from caution to active support – an evolution that could prove decisive for the modernization of Bulgaria’s public administration.

OPPORTUNITIES FOR INTRODUCING SUSTAINABLE DIGITAL SOLUTIONS: GOOD PRACTICES

The main advantage of artificial intelligence (AI) lies in its capacity to perform routine and repetitive tasks in a fraction of the time required by human intelligence, thereby freeing human resources for more complex and strategic activities. Chatbots and voice assistants based on machine learning and natural language processing (NLP) can provide continuous service and rapid access to information.

For instance, the virtual assistant “Londie” in the United Kingdom, implemented by the local government of London, automatically responds to inquiries related to local services such as waste collection, tax payments, and parking (London Office of Technology and Innovation, 2022). Similarly, public administration in Estonia – including local authorities – uses the digital platform “X-Road,” which enables automated data exchange between institutions, eliminating the need for citizens to carry documents between different administrative offices. Public sector structures are connected through a collaborative ecosystem that functions as a secure and highly efficient channel for the delivery of public services (E-Estonia, 2021).

AI-based systems also offer the ability to process large volumes of data and to identify patterns that are not immediately apparent to human analysis. Local authorities can employ such analytics in the allocation of social services, in urban traffic management, and in other complex, high-demand municipal systems. A notable example is Barcelona, Spain, where the city administration uses AI tools for analyzing social and spatial data to assess levels of social vulnerability by neighborhood and to direct support where it is most needed (Ajuntament de Barcelona, 2020). In Singapore, the Smart Nation platform incorporates intelligent predictive models that support traffic management, pollution prevention, and energy consumption control (Smart Nation Singapore, 2023).

Intelligent text recognition and automated verification systems can also serve as effective tools for optimizing document workflows and significantly accelerating administrative processes. Technologies such as optical character recognition (OCR) combined with AI enable the automatic validation and categorization of documents, reducing human error and enhancing efficiency. In the Netherlands, municipal authorities employ such systems to automatically analyze applications for social assistance and identify missing or incorrect data (Dutch Ministry of the Interior, 2022).

The integration of AI in public administration, however, raises important issues related to transparency, accountability, and data protection. Problems such as algorithmic

discrimination, decision-making opacity, and the absence of human oversight can undermine public trust. In this regard, the Government of Canada has implemented the Directive on Automated Decision-Making, which obliges public institutions to conduct preliminary impact assessments prior to the deployment of automated systems and to ensure the possibility of human intervention in significant administrative decisions (Government of Canada, 2020).

While the above-mentioned cases represent only a fraction of the good practices worldwide, it is important to note that, for such models to be applicable in the Bulgarian context, a number of essential prerequisites must be ensured.

RECOMMENDATIONS FOR THE INTEGRATION OF ARTIFICIAL INTELLIGENCE IN LOCAL SELF-GOVERNMENT

The integration of artificial intelligence (AI) into the processes of local self-government represents a key component in achieving sustainable, efficient, and transparent governance of territorial communities. The successful implementation of such technologies requires a systemic approach grounded in the combination of strategic vision, technological infrastructure, regulatory framework, human resource capacity, and active citizen participation.

A fundamental prerequisite for digital transformation is the establishment of a unified and interoperable digital infrastructure that includes high-reliability cloud solutions, stable network connectivity, and standardized formats for data exchange between institutions. Only through such measures can the seamless functioning of intelligent systems for real-time analysis and decision-making be ensured. Parallel to this, targeted investments in human capital development must be implemented. Acquiring and maintaining a high level of digital competence should become a mandatory criterion for holding administrative positions, while training in AI, big data management, and digital ethics should be systematically integrated into municipal staff qualification programs.

Equally important is the establishment of mechanisms for international exchange of good practices and knowledge transfer. Partnerships with international organizations (for instance, initiatives under UN DESA) and leading technological centers can accelerate adaptation processes and provide access to tested governance models. National policy should be closely aligned with local needs – through the development of a National Strategy for AI Implementation with clearly defined mechanisms for local-level application, including the creation of regional roadmaps and progress indicators.

Of particular importance is the adoption of local ethical standards for the use of artificial intelligence, ensuring data protection, non-discrimination, transparency, and accountability of algorithmic decisions. This would strengthen public trust and minimize the risk of social tensions arising from automated decision-making. Legislative amendments to the Law on Local Self-Government and Local Administration are advisable to provide a legal mandate for integrating intelligent solutions into administrative processes and to establish a framework for monitoring and evaluating their effectiveness.

For the sustainable implementation of AI-based systems, it is necessary to create regional centers of competence that provide continuous and up-to-date expert support to municipalities, as well as partnerships with universities for the development of internship and

research programs. Public–private partnerships can further encourage technology companies to test innovative solutions in real municipal environments, thus accelerating the deployment of effective governance models.

Financial support for the process may be secured through the targeted use of resources from European and national programs, including Digital Europe, with priority given to pilot projects that can serve as models for subsequent scaling. The adoption of shared-resource models also represents an effective approach in cases of financial or human resource constraints. Under such models, several municipalities share a common AI-driven platform or system – for example, for managing transportation, waste, energy efficiency, or other public services. This approach optimizes costs and enables economies of scale.

In this context, it should not be underestimated that AI has the potential to transform key areas of local governance – such as infrastructure management through predictive maintenance of road networks and public buildings; optimization of public transport via intelligent routing algorithms; data analysis from environmental monitoring sensors; the introduction of chatbots and virtual assistants for citizen services; and the deployment of systems that enhance transparency and accountability.

Equally critical is the involvement of citizens in the co-creation of solutions and the establishment of mechanisms for feedback to evaluate the effectiveness of implemented systems. Active communication regarding the goals, benefits, and ethical frameworks of AI is essential for building public trust and overcoming potential resistance to technological change.

INDICATORS FOR MEASURING THE EFFECTIVENESS OF ARTIFICIAL INTELLIGENCE–BASED SYSTEMS

To achieve an objective and scientifically grounded assessment of the impact of artificial intelligence (AI)–based systems on sustainable local governance, it is essential to establish an integrated measurement methodology encompassing both quantitative and qualitative indicators. These indicators should be applied over the long term, serving not only as tools for monitoring current results but also as instruments for policy correction and improvement. The main dimensions to be included in the system are as follows:

Degree of Service Digitalization

This indicator measures the proportion of administrative services that are available online, automated, or supported by AI. A higher degree of digitalization correlates with greater institutional transparency, reduced administrative burden for citizens, and improved access to public services. The methodological approach should include both quantitative analysis (e.g., percentage of services available digitally) and qualitative evaluation of user experience and interface ergonomics.

Citizen Service Time

The average duration of administrative procedures before and after the introduction of intelligent digital solutions is a key indicator of technological transformation efficiency in local governance. The analysis can be complemented by calculating a „time elasticity

index“ – reflecting the extent to which AI-based systems reduce or eliminate unnecessary procedural stages, thereby increasing citizen satisfaction and decreasing social costs.

Infrastructure Management Efficiency

Through predictive analytics and sensor networks, AI can minimize unplanned repairs and optimize maintenance costs. This indicator should include comparisons between planned and executed repairs, the extent of accident prevention, and the financial savings achieved. Additional value is provided by assessing the long-term sustainability of infrastructure.

Economic Impact

This dimension encompasses not only direct budgetary savings but also the multiplier effects on the local economy – such as the creation of new business models, stimulation of entrepreneurship, and attraction of investment through public–private partnerships. For academic completeness, indices like the AI Cost-Effectiveness Index (ROI for the implementation of intelligent systems) and comparative analyses among municipalities with different levels of digital maturity can be applied.

Environmental Impact

Environmental effects can be measured through the integration of IoT sensor data on air and water quality, as well as through carbon footprint modeling. The indicator may also include metrics related to waste management efficiency, noise reduction, and transport route optimization – all of which have a direct impact on greenhouse gas emissions.

Citizen Trust and Satisfaction

Public trust in local administration is fundamental to sustainable governance. The proportion of positive feedback, the level of citizen participation in consultative processes (e.g., via electronic co-creation platforms), and the degree of social inclusion are key parameters. A scientific approach would include sociological surveys and the analysis of large-scale social media data to derive indicators of public sentiment.

Ethical and Legal Compliance

The introduction of AI in the public sector necessitates continuous monitoring of adherence to principles of data protection, non-discrimination, and algorithmic transparency. Relevant sub-indicators include the number of registered violations, the speed of their resolution, and the existence of mechanisms for accountability and civic oversight.

Human Resource Capacity

The number of employees who have completed training in AI, digital literacy, and the ethics of automated decision-making serves as an indicator of the administration’s readiness to work in synergy with technology. The development of human capital is a prerequisite for sustainable and responsible innovation management.

Systematic monitoring of these indicators will enable informed decision-making for policy adjustment, ensure procedural transparency, and provide a solid foundation for the

digital transformation that must inevitably occur in local self-government to guarantee the sustainability of public service systems.

The integration of artificial intelligence into local self-government in Bulgaria requires a combination of political will, regulatory and institutional support, human resource capacity, and citizen engagement. Only through targeted and coordinated policies can AI evolve from an experimental innovation into a structural resource for the modernization of public administration, the improvement of quality of life, and the achievement of long-term sustainability at the local level.

CONCLUSION

The integration of artificial intelligence-based systems into local self-government should be viewed as a structural transformation that redefines the governance paradigm and reconsiders the relationships among institutions, citizens, and infrastructure. Empirical observations and theoretical analysis indicate that AI can function as a catalyst for administrative efficiency, transparency, and the sustainability of public policies – provided that its implementation is supported by an adequate regulatory, organizational, and ethical framework.

The proposed system of quantitative and qualitative indicators performs a dual role: it serves both as an instrument for empirical validation of outcomes and as a mechanism for the dynamic adjustment of managerial decisions. This system enables not only the measurement of immediate effects – such as reductions in time and financial costs and improvements in infrastructural efficiency – but also the evaluation of deeper social and environmental impacts, including increased citizen trust, a reduced carbon footprint, and the enhancement of human capital capacity.

Consequently, sustainable digital governance should be conceptualized as an integrative process in which technological innovation is combined with ethical responsibility, institutional transparency, and active civic engagement. In this sense, artificial intelligence is not merely a tool for optimization but a key element in building intelligent, inclusive, and adaptive communities aligned with the principles of sustainable development and good governance.

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THE ROLE OF SOCIAL ENTREPRENEURSHIP IN ACHIEVING THE SUSTAINABLE DEVELOPMENT GOALS

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Abstract

In the contemporary period, social entrepreneurship plays an important role in addressing the socio-economic problems of society. Its main objective is not only to generate profit but also to improve public welfare, as well as to reduce poverty and income inequality. These characteristics make social entrepreneurship strategically significant in terms of achieving the United Nations Sustainable Development Goals (SDGs). Social entrepreneurs, by offering innovative solutions in areas such as poverty reduction, increasing access to education, promoting gender equality, and ensuring sustainable economic growth, contribute both to global development processes and to the implementation of the SDGs. The purpose of this article is to develop recommendations aimed at strengthening the role of social entrepreneurship in achieving the Sustainable Development Goals.

Keywords: Social entrepreneurship, SDGs, poverty, survey, unemployment

Jel Codes: I30, I 31, I32

INTRODUCTION

In the contemporary era, achieving sustainable development is among the priorities not only of individual countries but also of international organizations. The United Nations (UN) has defined 17 global goals aimed at achieving sustainable development, including the reduction of poverty and inequalities and the protection of our planet by 2030 (United Nations, 2015). Several of these goals directly serve the improvement of welfare, the reduction of income inequality, and the promotion of employment. In recent years, social entrepreneurship has been widely employed worldwide as a new business model in expanding employment opportunities and improving welfare.

Social entrepreneurship, which emerged in the late twentieth century, is an activity whose purpose is not only to generate economic profit but also to address the social problems of society. The emergence of social entrepreneurship is closely linked to the

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attainment of several SDG targets, such as poverty reduction and the resolution of various social challenges.

In general, there are numerous perspectives regarding the reasons for the emergence of social entrepreneurship. According to Martin and Osberg, “social entrepreneurship emerged as a result of social problems such as poverty, ecological degradation, isolation, and marginalization” (Martin & Osberg, 2007). In other words, the emergence of social entrepreneurship has been necessitated by social, economic, and ecological problems. The views of Alvarez and Barney on social entrepreneurship are similar to those of Martin and Osberg. They argue that “social entrepreneurs have emerged due to social problems such as poverty, isolation, and marginalization in society” (Alvarez & Barney, 2007). Alvarez and Barney further note that “in order to solve social problems, some individuals have attempted to apply business or entrepreneurial principles to address them” (Alvarez & Barney, 2007).

According to P. Tanchangya, C. Yingjing and N.H. Chovdhury, “*like economic development, social entrepreneurs also play an important role in poverty reduction*” (Tanchangya, Yingjing & Chovdhury, 2020). Similarly, Fahad Sultan, Junaid Ahmad, Asad Sarfaraz Khan and Raza Ur Rahman argue that “*social entrepreneurship is a means of combating poverty and promoting the development of society*” (Sultan et al., 2021).

In addition to addressing social problems, social entrepreneurship also contributes to enhancing inclusiveness and building social capital. According to Azmat, “*the development trend of social entrepreneurship worldwide is directed towards poverty reduction by creating new jobs and opportunities, building social capital, and developing innovative initiatives in new institutional forms*” (Azmat, 2013).

One of the advantages of social entrepreneurship is that it provides opportunities for those who want to work but face difficulties in finding employment, thereby playing an important role in reducing the social burden of the state. Consequently, social entrepreneurs assist government agencies in implementing public policy. Another goal of social entrepreneurs is to ensure the integration of those members of society who wish to work into economic activity by engaging them in the labor market (Dees, 2001).

The most famous social entrepreneur in the world is Nobel laureate Muhammad Yunus from Bangladesh. In 1976, he founded the *Grameen Bank* (“Bank for the Poor”). The bank provided people with access to small loans without requiring collateral. According to the *Grameen Bank*, more than 90% of borrowers were women. Since its establishment, the bank has provided loans exceeding 3 billion dollars to 7 million people (Yunus, 2007). The bank also reports that more than 50% of its borrowers have managed to escape poverty.

Since the 1990s, social entrepreneurship has developed more systematically in Europe and North America. During this period, social enterprises were established in various fields – education, healthcare, environment, and social integration – and governments began to support these structures.

In recent years, social entrepreneurship has been rapidly developing both in advanced and developing countries. The number of social enterprises, which represent the organizational and legal form of social entrepreneurship, has been increasing worldwide. It is not accidental that in the European Union one out of every four newly established enterprises is a social

enterprise. In Europe, there are approximately 2.8 million social enterprises in operation. These enterprises can create jobs, provide innovative services, produce goods, promote sustainability, and offer hope for the future. According to the European Commission, nearly 40 million people are currently employed in the social entrepreneurship sector (European Commission, 2020).

Globally, there are about 10 million social enterprises. These enterprises generate approximately 2 trillion US dollars in annual revenue and create 200 million jobs. Statistical figures demonstrate that social entrepreneurship plays an increasingly important role in raising employment levels and achieving the Sustainable Development Goals (SDGs). Research conducted in different countries also indicates that the potential of social entrepreneurship to enhance the achievement of the SDGs is substantial.

METHODS

In this study, the role of social entrepreneurship in achieving the SDGs is evaluated through indirect statistical analysis and a systematic approach. Due to the lack of a reliable and official statistical database on the number of social entrepreneurship entities, their fields of activity, and their role in employment, an indirect statistical method consisting of several stages was developed to conduct the evaluation.

In the first stage, as a baseline source, the study utilized the joint 2024 report of the Schwab Foundation for Social Entrepreneurship and the World Economic Forum, which presented the number of social enterprises across 76 countries (Schwab Foundation for Social Entrepreneurship & World Economic Forum, 2024). However, the fact that the indicators in this report did not cover the same years created additional difficulties.

In the second stage, based on OECD (2020) and EU statistics, the ratio of social enterprises to SMEs was determined. This was taken as the baseline indicator for estimating the number of social entrepreneurs in 2023. Nevertheless, this measure alone proved insufficient to quantitatively assess the level of development of social entrepreneurship.

In the third stage, the number of social enterprises per 100,000 inhabitants was determined, which characterizes the depth of the spread of social entrepreneurship.

In the fourth stage, based on the World Bank's classification of Gross National Income (GNI) per capita (Atlas method), and taking into account the high correlation observed between the depth of social entrepreneurship and countries' income (development) levels ($r \approx 0.85$; as income increases, the spread of social entrepreneurs also rises), the depth of social entrepreneurship and percentage ranges by income groups were defined (World Bank, 2023a). This calculation was based on the ratio of social entrepreneurs to SMEs. Accordingly, a framework threshold was established: 8-10% for high-income countries, 5-7% for upper-middle-income countries, 3-4% for lower-middle-income countries, and 0.5-2% for low-income countries. These percentage ranges served as a methodological baseline calibration and were subsequently used to estimate the number of social entrepreneurs across countries and income groups.

In the fifth stage, the number of social entrepreneurs for 2023 was estimated. For this purpose, the World Bank indicator “*employers, total (% of total employment)*” was applied (World Bank, 2023b). Based on the framework thresholds defined in the fourth stage, the share of social entrepreneurs within total employers was calculated. The obtained result was then expressed as the number of social entrepreneurs per 100,000 inhabitants, which served as the indicator of the “depth of spread”.

ANALYSIS AND EVALUATION

Economic Block

The conducted assessments show that (Table 1) there is a relationship between the depth of the spread of social entrepreneurship (the number of social enterprises per 100,000 people) and income level. In 2023, the average number of social enterprises per 100,000 people was 142 in high-income countries, 76 in upper-middle-income countries, 47 in lower-middle-income countries, 10 in low-income countries, and 87 globally. In high-income countries, the depth of social entrepreneurship reflects market openness, financial inclusion, the maturity of the regulatory environment, as well as the efficiency of the *state-society-business* value chain.

In the modern era, the development and formalization of entrepreneurship, particularly SMEs, influence employment, especially youth employment, since SMEs, including social entrepreneurship, require innovative initiative.

Between 2015 and 2023, youth unemployment decreased significantly in high-income countries (-4.8 percentage points), while in upper-middle-income countries it increased (+1.8 percentage points). This paradoxical dynamic indicates that structural transitions, skills mismatches, and barriers to youth labor market entry remain unresolved. In environments where social entrepreneurship density is high, the dissemination of work-study models, social procurement mechanisms, and results-based payment instruments has enabled progress toward the SDG targets on unemployment levels and youth employment indicators / NEET (United Nations, 2015).

As shown in the table, except for low-income countries, the growth rate of GDP per capita has declined across other income groups. The decline in the share of vulnerable employment within total employment in recent years may be associated with digitalization and electronic transformation, whereas low-income countries continue to face serious challenges in this regard. The most significant reduction in vulnerable employment was observed in the lower-middle-income group (-2.8 percentage points); in high-income countries and the global average, the rate of decline was more moderate (both -0.7 percentage points), while in the low-income group there was an increase (+0.4 percentage points). Institutional weaknesses, costs, and market capacity constraints narrow this channel in low-income countries.

Table 1. Relationship between the depth of the spread of social entrepreneurship, income groups, and economic indicators of the SDGs (change in 2023 compared to 2015)

Indicator	Unit of measurement	High income	Upper middle income	Lower middle income	Low income	World	Correspondence with SDG indicators
Average number of social enterprises per 100,000 people (calculation for 2023)	Number	142	76	47	10	87	8.3.1; 8.5.2; 8.6.1
Youth unemployment, total (% of labor force aged 15–24) (ILO model estimate) (– improvement; + deterioration)	Percentage points	–4.8	+1.8	–5.0	–0.7	–2.4	8.5.2; 8.6.1
GDP per capita growth (annual, %) (+ improvement; – deterioration)	Percentage points	–0.6	+0.7	+0.4	+1.6	+0.1	8.1.1
Vulnerable employment, total (% of total employment) (ILO model estimate) (– improvement; + deterioration)	Percentage points	–0.7	–1.6	–2.8	+0.4	–0.7	8.3.1
Unemployment, total (% of labor force) (ILO model estimate) (– improvement; + deterioration)	Percentage points	–2.2	–0.1	–1.7	–0.2	–1.1	8.5.2
Access to electricity (% of population) (+ improvement; – deterioration)	Percentage points	+0.5	+0.4	+10.6	+12.2	+4.7	7.1.1
GNI per capita, PPP (current international \$) (+ improvement; – deterioration)	Percent	+46.8	+66.1	+69.2	+24.5	+51.3	8.1.1
Domestic credit to private sector (% of GDP) (+ improvement; – deterioration)	Percentage points	+8.7	+29.6	+2.0	+4.0	+17.6	

Source: International Monetary Fund (IMF); World Development Indicators Database, World Bank (WB).

The increase in access to electricity reflects improvements in accessibility indicators; this increase is more pronounced in low-income countries (+12.2 percentage points) and in the lower-middle-income group (+10.6 percentage points). This dynamic is linked to the growing role of renewable solutions (mini-grids, “pay-as-you-save” models) and community-based service providers in recent years. Micro-innovations of social entrepreneurship in this field and community-level behavioral change incentives align with the SDG target on *Access to electricity (% of population)*, while simultaneously feeding into local

production-employment chains. Furthermore, the rise in GNI per capita (PPP) across all income groups gradually facilitates the integration of social entrepreneurship solutions into larger ecosystems.

From the perspective of financial intermediation, the increase in domestic credit to the private sector as a share of GDP-particularly in upper-middle-income countries (+29.6 percentage points) and globally (+17.6 percentage points)-enhances financial inclusion and SME access to credit in line with the SDG targets (bank branch density, account ownership among adults, and SME access to credit). This reduces the cost of capital for social entrepreneurship, accelerates the spread of impact investments (such as social impact bonds, blended finance, and results-based payments), and at the same time necessitates targeted regulation and transparent accountability to counteract “mission drift” and excessive indebtedness.

Consequently, as the density of social enterprises increases, “negative” directional improvements in the labor market-reductions in overall and youth unemployment and decreases in vulnerable employment-move in parallel. Social enterprises map local needs, fill service gaps, lower entry barriers through public procurement, and create job-training opportunities for youth, thereby strengthening outcomes under the SDGs (share of informal/vulnerable employment, unemployment levels, and youth employment indicators/NEET).

At the same time, the surge in energy access amplifies the contribution of social enterprises’ resource-efficiency solutions to the SDG target on *Access to electricity (% of population)*, while the growth in GNI and credit expands opportunities for institutionalization along the SDG line (growth in GDP per capita, SME access to credit).

The efficiency of the *state-society-business* value chain directly stimulates the development of social entrepreneurship: when the state establishes a legal framework, social procurement quotas, and results-based payment mechanisms for social entrepreneurship, transition programs for youth and the long-term unemployed expand, thereby enhancing progress in reducing unemployment. When society increases its support for social entrepreneurship projects through co-design, participatory budgeting, and social credit funds, the transition toward formalization is strengthened, and the structural impact on reducing the share of informal/vulnerable employment becomes sustainable. When businesses integrate social entrepreneurship into supply chains and stabilize costs through impact investment and long-term PPAs/RECs, they contribute directly both to financial inclusion and SME access to credit indicators, as well as to maintaining the desired “negative” trajectory in employment. This coordination transforms social entrepreneurship from “local innovation” into “system-level outcomes.”

In low-income countries, the priorities are energy access (expansion of electricity coverage) and incubation support; in lower-middle-income countries, formalization incentives and social procurement (reducing informal/vulnerable employment) are central; in upper-middle-income countries, work-study opportunities and impact investment (reducing youth unemployment) are key; while in high-income countries, inclusive supply standards and the expansion of results-based contracts (financial inclusion and SME access to credit) are prioritized.

Social Block

According to Table 2: child and maternal mortality have improved; life expectancy has increased; the completion rate of primary education demonstrates mixed dynamics; overall poverty has declined; and tuberculosis shows decreasing trends (Table 2).

Table 2. Relationship between the depth of social entrepreneurship, income groups, and social indicators of the SDGs (change in 2023 compared to 2015)

Indicator	Unit of measurement	High income	Upper middle income	Lower middle income	Low income	World	SDG
Under-5 mortality rate (per 1,000 live births) (– improvement; + deterioration)	Per 1,000	–0.8	–2.3	–13.3	–20.2	–7.0	3.2.1
Population living on less than \$3.00/day (2021 PPP) (% of population) (– improvement; + deterioration)	Percentage points	–0.2	–3.3	–9.4	+1.5	–3.1	1.2.1
Maternal mortality ratio (per 100,000 live births) (– improvement; + deterioration)	Per 100,000	–1.0	–4.0	–56.0	–145.0	–31.0	3.1.1
Life expectancy at birth, total (years) (+ improvement; – deterioration)	Years	+0.6	+1.0	+2.2	+3.5	+1.4	3.1.1
Primary completion rate, total (% of relevant age group) (+ improvement; – deterioration)	Percentage points	–0.1	+1.6	–1.5	+3.4	–0.2	4.1.2
Tuberculosis incidence (per 100,000 population) (– improvement; + deterioration)	Per 100,000	–7.0	–10.0	–23.0	–20.0	–13.0	3.3.2

Source: International Monetary Fund (IMF); World Development Indicators Database, World Bank (WB).

At the same time, the poverty indicator (Poverty at PPP \$3.00) increased in the low-income group (+1.5 percentage points). The underlying reasons were vulnerability to shocks, the predominance of informal employment, and weak access to social protection. To mitigate this risk, income-generating models of social entrepreneurship are useful: micro-franchising, cooperative-based production, and work-and-training packages.

Life expectancy at birth increased across all groups, with the largest increase observed in low-income countries (+3.5 years). This is associated with the expansion of primary healthcare, clean water and sanitation, and nutrition services. In recent years, this progress

has also been linked to communication packages on behavioral change, community-level monitoring, and results-based service contracts.

The dynamics of the primary school completion rate are mixed. While in low-income countries the increase was +3.4 percentage points and in upper-middle-income countries +1.6 percentage points, a decline was recorded in lower-middle-income countries (-1.5) and a slight decrease in high-income countries (-0.1). The main reasons include post-pandemic continuation gaps, migration, and changes in measurement methods. In this field, social entrepreneurship promotes educational development through online platforms, compensatory education packages, parent-community initiatives, and conditional transfers designed to encourage school attendance.

Social entrepreneurship complements the gaps that emerge in the implementation of state programs. It reduces behavioral and informational barriers and brings health, diagnostic, and educational services closer through more affordable solutions. As a result, progress can be observed in maternal mortality, under-five mortality, tuberculosis incidence, and primary education completion rates. Regarding poverty indicators (poverty share at PPP \$3.00), inclusive business models of social entrepreneurship ensure a “income + skills” combination.

When the *state-society-business* value chain is coordinated, the impact of social entrepreneurship is reinforced. The state, through social procurement quotas (such as mother-and-child packages and school nutrition), results-based payments, and targeted fiscal incentives, contributes to reducing risk indicators and increasing participation and continuity in education. Society, through co-design, volunteering, and social credit funds, enhances the uptake and accessibility of services. Businesses, by integrating social entrepreneurship into supply chains and scaling it through acceleration and impact investment, ensure the stable provision of healthcare and educational services.

As a result, convergence within the social block is maintained: in low- and lower-middle-income groups, health indicators improve rapidly; in education, gaps are addressed through targeted social entrepreneurship solutions; and in contexts with high poverty risk, income-generating models of social entrepreneurship, combined with social protection, translate into progress.

Thus, the depth of social entrepreneurship and the presence of appropriate regulatory and financial mechanisms systematically strengthen development in the desired direction. Access to electricity expands, GDP per capita increases, vulnerable employment decreases, unemployment declines, financial inclusion and SME access to credit improve, while at the same time maternal and child mortality and tuberculosis incidence decrease, the primary school completion rate rises, and the poverty share falls.

Ecological Block

The sign logic for GHG emissions is as follows: „-“, indicates improvement. In high-income countries, per capita GHG (Greenhouse Gas) emissions decreased by -8.3%, explained by decarbonization policies, changes in the fuel mix, improved efficiency in industrial processes, and modernization in buildings and transportation. In upper-middle-income (+12.3%) and lower-middle-income (+9.5%) groups, the increase is linked to rapid

industrialization, energy structures based on coal and heavy fuels, and urbanization. In low-income countries, a small reduction (-2.1%) is related to the low baseline and the expansion of distributed renewables.

The role of social entrepreneurship is complementary: ESCOs, community solar mini-grids, waste-to-value solutions, and “pay-as-you-save” models reinforce the “–” direction in per capita GHG emissions. Note: the metric excludes LULUCF; thus, removals such as forest restoration are not reflected here. Therefore, in the short term, attention should focus on efficiency and substitution in energy, industrial, and waste sources.

Table 3. Relationship between the depth of social entrepreneurship, income groups, and ecological indicators of the SDGs (change in 2023 compared to 2015)

Indicator	Unit of measurement	High income	Upper middle income	Lower middle income	Low income	World	SDG
Per capita GHG emissions (excluding LULUCF) (t CO ₂ e per capita) (– improvement; + deterioration)	Percent	–8.3	+12.3	+9.5	–2.1	+0.4	13.2.2
Per capita renewable internal fresh-water resources (cubic meters) (+ improvement; – deterioration)	Percent	–1.9	–3.9	–8.0	–15.2	–6.1	6.4.2*

Source: International Monetary Fund (IMF); World Development Indicators Database, World Bank (WB).

In the water stress block (IRWR proxy), per capita resources are declining across all income groups, with the sharpest decrease in low-income countries (-15.2%). This dynamic is associated with climate aridification, increased seasonal/annual variability, rising agricultural demand, and infrastructure losses (leakages). In upper-middle-income (-3.9%) and high-income (-1.9%) groups, the decrease is more moderate, while the global negative trajectory (-6.1%) indicates that water stress is increasing worldwide.

Under these conditions, social entrepreneurship can help mitigate the pressure through models that provide access to water efficiency technologies (micro-leasing for drip irrigation, “leak hunting” and service-fee models for smart meters, modular solutions for grey-water reuse), community water committees, and results-based contracts. Although these interventions do not directly generate a “+” (resource increase) in water stress, they manage demand and minimize losses against the backdrop of declining resources.

The relationship between the SE/100,000 indicator and ecological outcomes is interpreted according to “sign logic”: when the density of social enterprises is high, the “–” direction in per capita GHG emissions is more evident, as energy efficiency services, waste recycling, and enterprise-community partnerships spread more rapidly; the continued “–”

trend in water resources, however, shows that the impact of social entrepreneurship lies more in managing stress and promoting savings rather than increasing the resource itself.

This logic manifests differently across income groups: in high-income countries, social entrepreneurship scales through supply requirements aligned with green standards and green procurement; in upper-middle- and lower-middle-income countries, process efficiency, consumer-level efficiency devices, and social entrepreneurship-bank joint products (blended finance, impact bonds) for renewable energy integration into the grid are critical; while in low-income countries, “last mile” distribution, micro-grids, and community-based management in water supply serve as the main channels.

State-society-business value chain

The state, through carbon pricing signals and the reform of energy subsidies, the introduction of efficiency standards in buildings and industry, as well as green social procurement and results-based payment mechanisms for social entrepreneurship, deepens the downward trend in per capita GHG emissions. In water management, fair differential tariffs, incentive measures related to losses, and service contracts targeted at social entrepreneurship strengthen the management of water stress.

Society enhances acceptance and resilience through participation in co-design processes, transparent monitoring, and behavioral change campaigns. The business sector integrates social entrepreneurship into supply chains, expanding access to capital through long-term green energy contracts such as PPAs and RECs and impact-oriented investments, thereby reducing the costs of ecological innovations.

As a result of this coordination, the “institutional quality” underlying the SE/100,000 indicator rises, and the desired trends in ecological indicators take on a systemic character. In high-income countries, social entrepreneurship plays a catalytic role in scaling decarbonization and resource efficiency solutions. In middle-income countries, synchronization of social entrepreneurship with macro-level policy is required to ease the growing pressure of emissions. In low-income countries, social entrepreneurship is primarily directed toward closing “last mile” gaps at the community level.

The decline observed in IRWR highlights the strategic importance of demand-oriented and loss-reducing social entrepreneurship solutions. Reductions in per capita GHG emissions are most feasible in areas of efficiency, circular economy, and distributed energy, and with the right macro-level policy this trajectory is reinforced, while resilience in water stress management is simultaneously strengthened.

CONCLUSION

The study demonstrates that social entrepreneurship possesses significant potential worldwide. However, in low-income countries, the absence of legal status, financial constraints, and market barriers limit the development of this new business model. The implementation of the *state-society-business* value chain model, by addressing these barriers, can provide comprehensive solutions.

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LEADERSHIP IN A CULTURAL INSTITUTION

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Abstract

Contemporary leadership research tends to focus more on leaders in politics and international business than on those operating within state institutions such as museums. Museum activities could shape international tourism in a particular region, especially when the institutions possess substantial cultural significance and modern practices. Regarding the application of an appropriate leadership approach, the Regional Natural History Museum – Plovdiv transforms into one of the most modern museums in Bulgaria, attracting visitors from both the country and abroad. This article focuses on the leadership qualities that turn an old-style cultural institution into a modern European museum with internationally competitive advantages.

Keywords: leadership, cultural institution, museum activity, tourism impact, Regional Natural History Museum – Plovdiv

JEL: M14

INTRODUCTION

Nowadays leadership is a highly exploited topic worldwide. Due to the shortage of authentic leaders, the subject becomes even more interesting and studied by a growing number of authors. Regarding to the cultural sector in Bulgaria, the situation is even more complex, as annual budgets for culture remain consistently low. Traditionally, Bulgaria allocates less than 0.5% for culture of the total government expenditures each year. For comparison, by 2022 the average cultural budget allocation across the EU members is approximately 1.0%. (Oireachtas, 2022)

Scientific articles typically focus on analyzing leaders in politics and business because working on a high position in a state institution is more connected with management rather than inspiration of employees. However, the existence of leadership behavior in the cultural institutions is less studied because it is considered more difficult to achieve. Following this, the article focuses on leadership through the case of the **Regional Natural History Museum – Plovdiv**, as a distinctive example not only for Bulgaria but also for the EU. The case is particularly interesting, since the museum's director was replaced three years after

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Bulgaria's accession to the European Union. This period was followed by a huge transformation of the institution. Nowadays among the museum's main advantages is that there is no other museum bringing together such a diverse range of exhibitions on different themes in one place.

METHODOLOGY OF RESEARCH

The methodology comprises several components. *First*, the museum visit is conceptualized as a service that may possess an international dimension. Furthermore, it is defined by its sector of activity and the service's categorization within the economic field. *Second*, leadership is defined by considering personal characteristics which refer to a specific case under analysis. *Third*, a review of the competitive advantages developed in the chosen case through strategic vision between 2010 and 2024 is made. *Fourth*, the economic analysis is based on statistical data collected by local media platforms and the official website of Plovdiv Municipality. This allows to draw conclusions regarding the museum's economic performance and its contribution to attracting international tourists.

This analysis combines several approaches. First, it generally applies a **case study** approach by examining the Regional Museum of Natural History – Plovdiv. **Empirical and inductive analysis** through a **survey** among the employees of the museum is made to determine the leadership style of the director in the period 2010–2024. A comparative analysis based on statistical data is conducted to draw conclusions about the museum's economic performance under the new leadership.

From the perspective of the **literature** used, the *theoretical part* is based on publications of Bulgarian and international authors working on the topics of international trade and leadership. For the *empirical part*, reliable Bulgarian-language media and online sources are used, as well as the official websites of the museum and of the Municipality of Plovdiv.

1. Defining the service of „museum visit“ within an economic context

Museum visit, as a service that contributes to the country's GDP, can be defined through several aspects. From one perspective, service provided on the national territory may have domestic significance. In contrast, the same economic activity may also be regarded as an international service if it is consumed by international citizens on the territory of the country provider.

Museum visit is a complex service that cannot be specified unambiguously. On the one hand, it can be defined as a *cultural service* since it provides access to cultural and/or scientific information. On the other hand, the service contributes to the development of cultural tourism and in this regard, can be classified as a *tourism service*. Thirdly, it can also be considered as an *educational service*, particularly in the context of school visits with educational purposes.

Consequently, in order to determine the economic significance of the service it should be framed within the Classification of Economic Activities 2025.

→ **S CULTURE, SPORTS AND ENTERTAINMENT**
 → **91 Other activities in the field of culture**
 → **Code 91.21 Museum activities**

Source: Classification of Economic Activities 2025.

Fig. 1. Museum activities according to Classification of Economic Activities 2025

Figure 1 illustrates that museum activities, as an economic service according to Classification of Economic Activities 2025, fall under the category *S – CULTURE, SPORTS AND ENTERTAINMENT*. The subgroups are respectively *91. Other activities in the field of culture* and *Code 91.21 – Activities of museums*. The services provided by museums are considered as **cultural activities**. However, this classification excludes some characteristic features and specific aspects of the museum services.

This situation is quite common because it is often difficult to clearly classify certain services into specific subgroups (whether culture or entertainment) due to the nature of the service itself. In fact, visiting a museum can be considered both a *cultural and an entertainment* activity. At the same time, the classification does not take into account that visiting a museum can also be defined as an *educational service*, particularly in the context of school group visits. Moreover, it can also be classified as a *tourism service* both at the national or international level.

International trade in services, and in particular tourism-related services provided by museums, are considered as "invisible imports" or "invisible exports". (Danov, 2006) This service has specific characteristics in international trade, notably it requires buyer mobility. (Mattoo, Stern, Zanini, 2008) In the analyzed case of the Regional Natural History Museum – Plovdiv, attracting foreign tourists is regarded an *invisible export* for Bulgaria. Foreign visitors spend money within the country's economy, which represents the essence of international tourism services – a form of export that many countries actively strive to promote. The specificity of this form of trade lies in the geographical location of the consumer, who must be physically present on the territory of the service-providing country – in this case, Bulgaria. The provision of such a service inherently requires the mobility of the buyer. According to the GATS (General Agreement on Trade in Services) modes of supply, this form of tourism service is categorized as *"consumption abroad."* (GATS, 1994)

2. Leadership in a cultural institution

Leadership has various manifestations and it is no coincidence that in academic terms there are different theories and categorizations of **leadership styles**. Leadership manifests in various styles, each reflecting different approaches of decision-making and team engagement. For example, some leaders adopt a *democratic style*, encouraging employee participation in the decision-making process. Others follow a more *authoritarian approach*,

making decisions independently and limiting team involvement. *Transformational leaders*, on the other hand, inspire and motivate their teams through charisma, visionary thinking, and personal influence. These represent only a part of the primary leadership styles identified in contemporary leadership theory. (Amanchukwu, Stanley & Ololube, 2015)

Leadership theories typically emphasize different distinctive traits of the leader. For instance, the theory of *visionary leadership* is based on a long-term vision and inspired followers. It also supports an environment that fosters innovation and a future-oriented approach. (Bennis, Nanus, 1985) In contrast, *motivational leadership* focuses on shorter-term goals related to motivating the employees, engaging them in the work process and creating a positive work environment. (Northouse, 2021) *Charismatic leadership* is usually the complete opposite of an empowered figure who is not recognized by the group. Charismatic leaders are an example of influence over people that often remains inexplicable and motivates them to follow. (Danov, Tileva, 2022)

As noted earlier, there are diverse theories concerning leadership and leadership styles. Some of these theories partially overlap, while others are, in practice, theories about well-trained managers. Some of the theories lack essential characteristics that leadership should embody: a long-term vision, as well as a group of followers who are motivated to follow the leader not merely because of financial compensation, but in pursuit of a higher purpose. Such examples are the transactional and the bureaucratic leadership styles which are based mostly on management.

Nevertheless, managing a public institution is significantly different from corporate management, as it involves communication with government bodies. Regional Natural History Museum – Plovdiv is a state institution that is part of the network of natural history museums in Bulgaria and is subordinated to the Ministry of Culture. Leadership in a cultural and scientific institution such as a museum requires a more specific approach, since museums are state-subsidized. The leader must have the ability to balance the interests of the government administration, the museum team, and the requirement of the museum's visitors.

3. Leadership in the case of the Regional Natural History Museum – Plovdiv

Leadership is inherently associated with the personality and characteristics of the individual who governs a particular institution. Regarding to Regional Natural History Museum – Plovdiv typically, terms of office for leadership positions tend to be longer, which enables the implementation of strategic long-term practices.

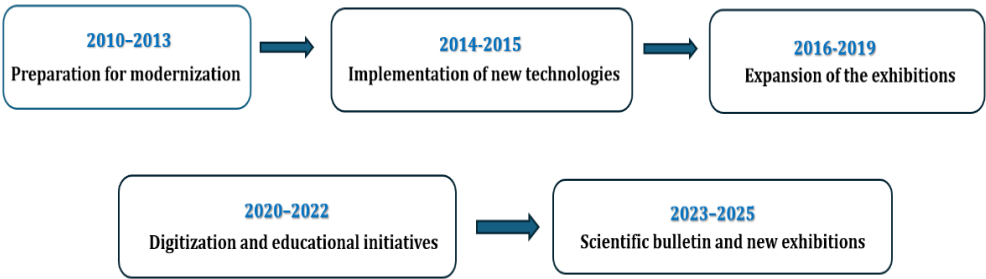
The museum was established in the distant 1955 under the title “Temporary Exhibition of Materials for the Future Natural History Museum. (Regional Natural History Museum – Plovdiv). From 1963 to 2010, it was managed by Assoc. Prof. Dr. Ilko Basamakov who was subsequently succeeded by the current director Ch. Asst. Prof. Dr. Ognyan Todorov.

Improvement of Service Quality

As of today, the Natural History Museum – Plovdiv offers a very comprehensive service which includes a wide variety of expositions in called: Paleontology, Butterflies, Mammals, Birds, Invertebrates, Botany, Dinosaurs, Amphibians and Reptiles, Fishes, Planetarium,

Terrarium, Sea Aquarium and Aquarium. This diversity makes the museum’s service competitive on an international level, as there is no other museum in Europe that provides this unique compilation of topics in one place.

Leadership in a cultural institution has a direct influence on the quality of services delivered and it influences the management approach applied to the team. Since 2010, numerous activities are carried out in relation to the development of the service during the years. These activities have significantly contributed for improvement of the quality of the service that the Natural History Museum – Plovdiv provides.



Source: Authors' table.

Fig. 2. Development timeline of RNHM-Plovdiv services (2010–2025)

Figure 2 provides a comprehensive overview of the principal phases in the evolution of the service at the Regional Natural History Museum – Plovdiv during the timeframe following the accession of Dr. Todorov to the directorship. In the period from 2010 to 2013, preparations took place for the transformation of the museum. In 2013, the actual renovation began in order to modernize the museum. The city of Plovdiv has dedicated more than 500 000 euros to renovate the Regional Natural History Museum, which was aiming to feature a 3D planetarium as part of the project. The main objective was to transform the museum into the most modern in Bulgaria. (Bulgarian National Radio, 2014) In 2015, a digital planetarium opened, featuring an 8-meter dome and a laser projector that delivered interactive space experiences. In 2023, the Planetarium Hall was equipped with a new program of 2D and 3D films. (DarikNews, 2023) The Regional Natural History Museum of Plovdiv produced the planetarium’s full-dome programmes through a partnership with the European Space Agency. (RNHM) In 2016 the "Paleontology" Hall opened, featuring 12 display cases arranged chronologically by geological periods, focusing on fossil from Bulgaria. Among the exhibits were trilobites, giant ferns, mammoth bones, and Neanderthal tools. (VisitPlovdiv, 2025) The "Dinosaurs" exhibition was expanded in 2019 through the incorporation of new models and interactive elements. (BTA, 2023)

Following the onset of the COVID-19 pandemic, the Regional Natural History Museum – Plovdiv adapted to the new realities by digitizing its exhibitions, offering 3D virtual tours through the platform digital.plovdiv.bg, as part of the #StayECOzyCinhome initiative.

(Plovdiv Municipality, 2020). In the same year, the museum presented the travelling exhibition "River of Biodiversity," which aimed to showcase the ecosystem of the Maritsa River and emphasized the importance of preserving its biodiversity. (Visit Plovdiv, 2020). In 2021, the Natural History Museum in Plovdiv acquired the world's most venomous octopus – the blue-ringed octopus, which quickly attracted many visitors. (National Geographic Bulgaria, 2021)

In 2023 the museum presented a new exhibition collection titled "Fossils of Dinosaurs," located in the "Dinosaurs" Hall. The exhibition featured teeth from various dinosaur species. (RNHM, 2023) In 2024 the publication of the scientific bulletin Bulletin of the Natural History Museum – Plovdiv was resumed. It published original research in the fields of paleontology, zoology, ecology and related disciplines. (RNHM, 2025)

The timeline presents some of the main initiatives the museum undertook with the aim of significantly improving the quality of the services provided. All these efforts resulted in the institution winning the "Museum of the Year" award in 2017 (Bulgarian National Television News, 2017) and in 2023 the director Dr. Ognyan Todorov was honored in the category "Preservation of Cultural Heritage and Memory" for the modern and contemporary design of the museum's main exhibition. (Plovdiv Municipality, 2017) The museum is **unique in its kind**, combining an exceptional diversity of exhibitions under one roof – a level of variety rarely found in other European museums.

Defining the Leadership Style

To determine the leadership style by which the Regional Natural History Museum – Plovdiv is managed, it is important to analyze the behavior of the current director. This will be achieved by combining two methods. First, a psychological profile will be developed based on an *empirical analysis of media interviews* with the museum's director, Dr. Ognyan Todorov. Second, an *analysis of a survey conducted among the museum staff* will be performed. This mixed-method approach aims to identify the director's leadership style.

Psychological characteristics of the leader Dr. Ognyan Todorov based on a podcast interview

In an interview on Maritsa Podcast in 2023, Dr. Ognyan Todorov discusses his work as a director which provides material for drawing conclusions about his personal characteristics as a leader on empirical basis.

- **A visionary without prior managerial experience:** Dr. Todorov had a clear goal from the very beginning of his term – to develop the Regional Natural History Museum – Plovdiv into the best in Bulgaria. His personal motto, "There's always a way," reflects a strong *sense of purpose* as a character trait. He demonstrates clearly expressed *strategic thinking and visionary outlook*, despite his lack of previous management experience. This is a combination of a clear and long-term vision for the museum's development, along with a genuine drive to implement it.

- **Communication without established barriers:** The interview presents Dr. Todorov as someone inclined toward informal communication. He describes himself as a *non-strict* director who sets almost no boundaries in communication with team which clearly indicates

a *non-authoritarian* leadership style. The aim is more effective communication and a better understanding of team dynamics during work processes. He sets norms and conditional frameworks that the entire team strives to follow and build upon.

- **Sense of belonging:** It is noteworthy that in the context of the museum's operations, the director avoids using the first person singular. Everything the museum has achieved during his mandate, including awards, Dr. Todorov presents as a collective accomplishment by all employees. This is a clear indication of *teamwork ability* and a *strong sense of group belonging*.

- **Team building:** 100% of the museum's current staff has been selected by the current director. This creates the preconditions for better collaboration and a productive work environment. His direct involvement in the hiring process demonstrates a capacity *to take personal responsibility* for the museum's long-term results.

- **Overcoming challenges:** An interesting aspect is the method used to deal with financial challenges regarding staff salaries. Since the museum is a state institution, salaries cannot be increased unilaterally – they are regulated by state laws and budgets, unlike the private sector. Through his role as Deputy Chairman of the Board of the Association of Museums, Dr. Todorov takes part in negotiations for raising museum workers' salaries by initiating and maintaining communication with all political parties and relevant levels of state administration. These are indicators of *flexibility, adaptability, proactivity* and also reflect *care and empathy* from the leader toward his team.

- **Striving for improvement:** Since 2010, the service offered by the Regional Natural History Museum – Plovdiv has significantly evolved – from a retro museum to one with a modern and contemporary appearance. This fact indicates *consistency in behavior and character aimed at sustainable growth*. Developing a long-term vision is a fundamental element of leadership. The way the director collects feedback – through observation and analysis of visitors' behavior – is an indicator of a high level of *emotional intelligence*.

- **Proper goal setting:** Generating profit in a state cultural institution is important, but it is neither the main nor the only focus. The main goal of the museum team is visitors' satisfaction. The director views the *profit* generated by the museum as a tool and resource that can be *reinvested* in service improvement.

- **Sense of mission:** The clear awareness of how important it is to preserve cultural heritage, along with the educational aspect of the museum's services, is indicative of the director's *integrity and strong moral character*.

- **Charisma:** Dr. Todorov leaves the impression that what he does “captures” the staff at the museum and makes them want to be a part of the initiative. These effects are strong indicators supporting the argument for a *charismatic impact*.

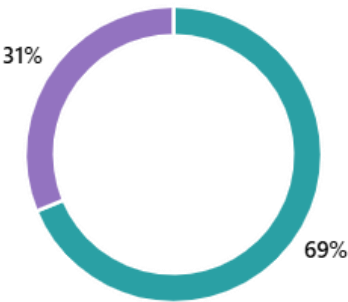
Defining the leadership style based on the results of a survey conducted among the museum employees

One of the most important indicators for determining leadership style is the way in which *followers perceive their leader*. For this reason, a survey is conducted among 16

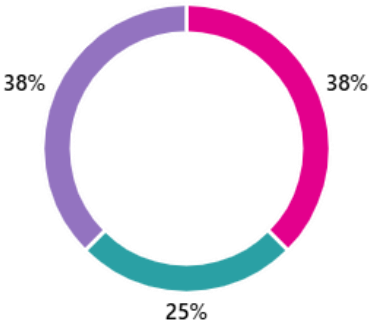
employees for the purposes of this analysis. Based on their responses, conclusions are drawn regarding the leadership style of Dr. Ognyan Todorov.

The team of the museum is composed by: director, head of Botany Department, chief curator, terrarium curator, aquarium curator, public relations officer, curator, tropical curator, planetarium curator, secretary, chief accountant, accountant, cashier (booking clerk), cashier (paymaster), cleaning staff, security guard. All respondents are hired after Dr. Todorov is appointed as director.

Regarding the significance of the **difference in the quality of service provided by the museum compared to the period before 2010**, 94% of respondents answer they notice a very big difference, while only 6% are unable to assess. On the question what **motivates them to participate in the museum’s work**, 75% respond that they are motivated by both material and non-material incentives, 6% by material incentives only and 19% are motivated but not by material incentives. The results show that employees’ attitude toward the workplace demonstrates commitment and motivation to their work, which is not only based on financial incentives.

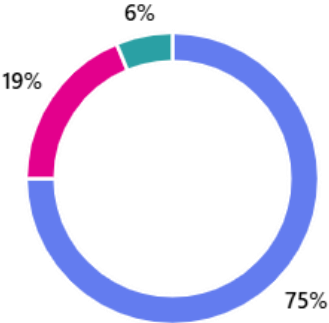


Graph 1. Communication between the director and the team

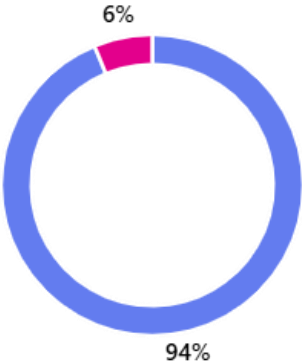


Graph 2. Involvement in the decision-making process

Regarding Graph 1 and the **communication between the director and team members**, 69% indicate that it happens openly and regularly with the entire team, while 31% say it occurs individually, depending on the employee and the occasion. It is noteworthy that communication between the team and the director is open and has its specific characteristics, which is a clear indicator of effective teamwork. This type of leadership style demonstrates collectiveness and transparency, as well as adaptability and attention to the individual needs of team members. According to Graph 2, **the sense of involvement in the decision-making process** is reflected as follows: 38% feel partially involved, 25% feel fully involved within their area of responsibility, and 38% feel fully involved to the museum's overall activities. According to the respondents, no team member feels completely isolated from the decision-making process, with the majority feeling like active participants in it.

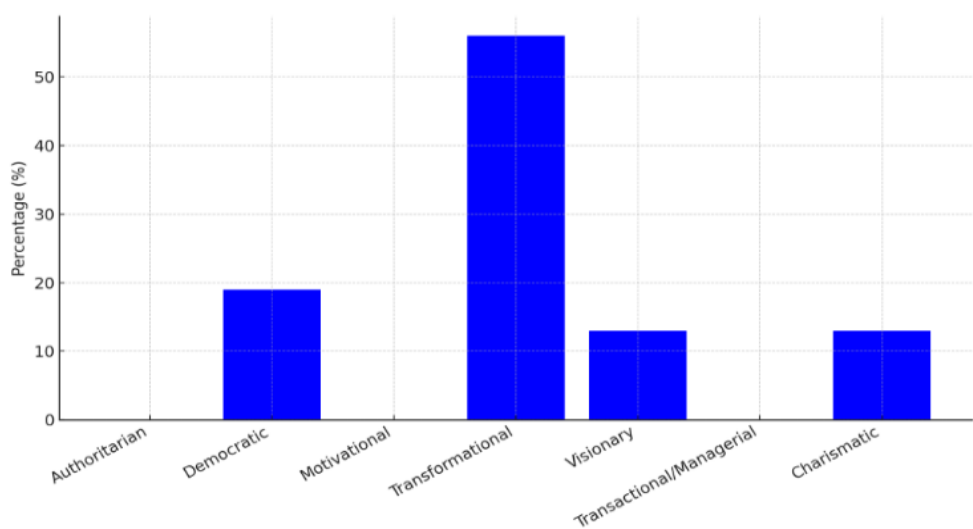


Graph 3. Resolving conflict situations



Graph 4. Approach to innovative ideas from the team

Graph 3 presents responses to the question of **how the director manages conflict situations**. According to 6% of the respondents the director delegates the resolution of the issue to another employee; 19% indicate that the director makes decisions independently, relying on personal judgment; while the predominant share of 75% report that the director listens to all parties involved and seeks a mutually acceptable solution. According to 6% of the respondents, he listens to ideas but rarely applies them; while the remaining 94% state that he actively encourages suggestions. The type of leadership that dominates in the responses indicates a *democratic and transformational style* of Dr. Todorov in addressing conflict situations and engaging the team in the creative process. The approach may further be characterized by the *participative style*, as a subtype of the democratic leadership style. Figure 4 concerns the **director’s approach to innovative ideas proposed by the team**.



Graph 5. Defining leadership style according to respondents

Graph 5 Figure 5 shows how respondents perceive leadership style, based only on the statement they chose, without prior knowledge which leadership style is represented by the particular answer. No respondents selected the answers describing the authoritarian, motivational or transactional style. Accordingly, respondents define Dr. Todorov’s leadership style as: *democratic (19%)*, *transformational (56%)*, *visionary (13%)* and *charismatic (13%)*.

When given the opportunity to articulate their leader in a single sentence, it becomes evident that respondents consistently describe Dr. Todorov as a leader. Beyond the inspiration, they emphasize his capacity to identify appropriate approaches to cope with challenges and at the same time he fosters a friendly working environment oriented toward long-term vision.

As a summary of the **combined analysis** of Dr. Todorov’s personality traits, it may be concluded that his leadership style is best described as a mix of several different approaches. The *empirical analysis* reveals manifestations of **democratic, visionary and charismatic leadership styles**. The *survey* conducted among his team identified a combination of **democratic and transformational leadership styles**, with elements of **visionary and charismatic leadership**. The analysis reveals that in a very high degree the image presented by the director in the media overlaps with the perceptions of the group. In conclusion, Dr. Todorov should be regarded not simply as a manager, but as an **authentic leader**, as the analysis indicated that his team functions not merely as employees, but as dedicated followers of the museum’s vision.

3. Economic performance of the Regional Natural History Museum – Plovdiv

Despite the significant modernization of the museum, which brings the quality of service to a high European level, it is notable that its ticket price remains in the lower range in comparison with museums in the European Union.

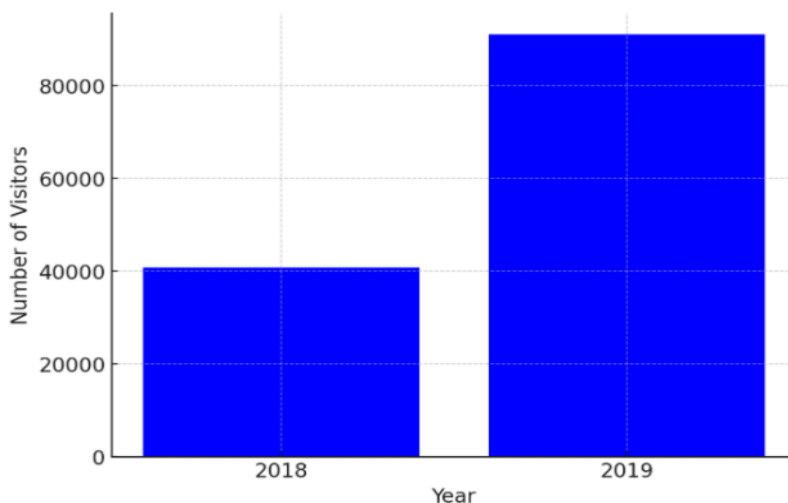
Table 1. RNHM ticket price range

Category / Service	Adults	Students	Children <7
Exhibition	8.00 BGN	5.00 BGN	2.00 BGN
Tropic Hall	5.00 BGN	4.00 BGN	2.00 BGN
Planetarium (Individual)	10.00 BGN	7.00 BGN	4.00 BGN
Planetarium (Group 5-50)	7.00 BGN/person	6.00 BGN/person	3.00 BGN/person

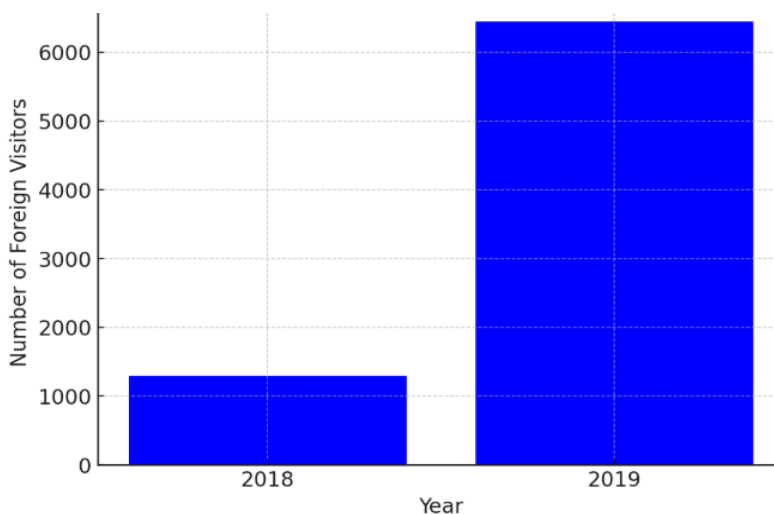
Sorce: RNHM – Plovdiv.

The prices for the individual components of the museum are as follows: for children the price range is from 2 to 4 BGN, for students from 4 to 7 BGN and for adults – from 5 to 10 BGN. Assuming that on a given day a person visits the Exhibition, the Tropic Hall and the Planetarium the total admission cost would be: 8 BGN for children, 16 BGN for students and 23 BGN for adults.

In 2019 Plovdiv was chosen as **European Capital of Culture**. Throughout that year the city’s museums experienced a substantial increase in the number of visitors from Bulgaria and abroad. Regarding this the Regional Natural History Museum – Plovdiv registered the ***highest attendance*** among all local museums during the European Capital of Culture initiative.



Graph 6. Total visitors at RNHM



Graph 7. Foreign Visitors at RNHM

Sorce: Marica.bg. (2020). Пловдивските музеи с двоен ръст през 2019 г. Retrieved September 11, 2025, from <https://www.marica.bg/kultura/plovdivskite-muzei-s-dvoen-rast-prez-2019-g>

In 2019 the Regional Natural History Museum – Plovdiv reported impressive results presented on Graph 6 and Graph 7. The total number of visitors in 2019 was 91,083 – nearly *124% compared to 2018*, when the total number of visitors was only 40,741. In terms of foreign visitors, the growth was even more impressive: from 1,293 in 2018, the number of foreign visits of the museum rose to 6,450 representing a significant increase of nearly *400% in 2019*.

The COVID crisis affected most of the economic sectors including the museum activities. Nevertheless, the Regional Museum of Natural History – Plovdiv regained its position: in the first 10 months of 2024 it recorded 88 000 visits, while in 2019, the year when Plovdiv was the European Capital of Culture, the total number of visitors for the whole year was 91 083. (Marica, 2024) Evidence of the museum’s substantial public interest was provided by the fact that in October 2024 more than 3000 visitors attended the Exhibition, the Planetarium and the “Tropic” Hall within a period of just 4 days. (Plovdiv Municipality, 2024)

Table 2. Revenues for the First Half of the Year 2022 and 2023 in BGN

Cultural Institution	2022	2023
Municipal Institute “Ancient Plovdiv”	406 604	570 471
Regional Natural History Museum	235 529	331 792
Regional Ethnographic Museum	70 416	116 665
Regional Archaeological Museum	20 031	107 417
National Library “Ivan Vazov”	63 072	74 710
City Art Gallery	30 562	46 602
Regional History Museum	13 871	20 282

Source: Община Пловдив. (2023). Пловдивските музеи – отличници по приходи за първото полугодие. Пловдив.

According to statistics published by the Municipality of Plovdiv the Regional Museum of Natural History was *the most profitable museum* in terms of revenue compared to the other museums in the city for 2022 and 2023. In terms of income, it was only exceeded by the Municipal Institute “Ancient Plovdiv” which serves as the administrator of multiple cultural sites and activities that collectively generate revenue. Therefore, its activity cannot be directly compared to those of a single museum, nor can the level of profitability it produces.

CONCLUSION

Leadership in a cultural institution represents a significant challenge, as it involves balancing between state funding and pursuit of financial results. Employee motivation is less frequently and less easily based on financial incentives compared to the private sector. Therefore, this makes leadership in such institutions more demanding and at the same time more authentic, since the primary drivers of followers are often related to job satisfaction and friendly working environment.

The case of the Regional Museum of Natural History – Plovdiv provides an excellent example illustrating the causal relationship between leadership in a cultural institution and transformation a state-run museum into a modern European institution.

The study revealed that the group (represented by the museum team) clearly recognizes Dr. Ognyan Todorov as an authentic leader, consequently, this is the reason to “follow” him in the idea for developing the museum. The empirical analysis indicated his leadership is inherently democratic, visionary and charismatic with element of transformational leadership according to the group’s opinion.

This combination of leadership qualities has led to significant economic outcomes in the museum’s performance. Even before the COVID-19 crisis, a substantial increase in visitor numbers is reported with a particularly notable rise in attendance by international tourists. Remarkably, even after the COVID-19 pandemic, the museum recorded an increase in revenues in the first half of 2023 compared to the same period in 2022. The analysis could serve as a foundation for subsequent, more in-depth economic studies based on concrete financial data regarding the museum’s activity.

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INSTITUTIONAL CONTINGENCIES OF INDUSTRIAL POLICY: THE CASE OF JAPAN

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Abstract

Recent research shows that industrial policy practices are omnipresent. Contrary to conventional logic, industrial policy has not faded away along globalization but in fact has been growing worldwide with an expanding toolkit. New levers have been added while currently some older ones have been revoked. These days the question is not ‘whether’ but ‘how’ to go about industrial policy. The paper claims that the implementation of industrial policy is institutionally contingent. It specifically tackles the role and repercussions of the national cultural profile on industrial policy implementation in a country. The research method entails the application of cultural analysis based on traditional culturalists approaches. Japan, its long history of industrial policy implementation and its national cultural profile, serves as a backdrop for proving the instrumental role of cultural contingencies on the outcomes of industrial policy endeavours.

Keywords: national culture, industrial policy, Japan

JEL: L5, O2

INTRODUCTION

Recent research shows that industrial policy practices are omnipresent. Contrary to conventional logic, industrial policy has not faded away along globalization but in fact has been growing worldwide with an expanding toolkit. New levers have been added while currently some older ones have been revoked. These days the question is not ‘whether’ but ‘how’ to go about industrial policy. Industrial policy is undertaken by the national governments (macro level) and targeted at firms, group of firms, sectors (micro level). That is, it is inherently about public-private interaction in an idiosyncratic institutional setting. Regardless of the critique, nowadays the question is not about the feasibility of industrial policy but much more about its proper implementation in line with the peculiarities of the domestic institutional context.

The paper claims that the implementation of industrial policy is institutionally contingent. The capacity of the national government to adapt the implementation of the industrial policy to the peculiarities of the domestic institutional context is a critical success factor.

The paper specifically tackles the role and repercussions of the national cultural profile on industrial policy implementation in a country. Although viewed as informal institutions, national cultural norms may prove to be severe obstacles confronting policy measures unless carefully considered and factored in the implementation of the desired policies.

The research method entails the application of cultural analysis based on traditional culturalists approaches wherein national cultures are studied along value-derived dimensions. Japan, its long history of industrial policy implementation and its national cultural

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profile, serves as a backdrop for proving the instrumental role of cultural contingencies on the outcomes of industrial policy endeavours.

Terzi et al (2023) derive six design characteristics of a successful industrial policy. The study of Japanese industrial policy practice shows reification of these critical features shaped in the unique Japanese cultural mold.

Table 1. Dovetailing industrial policy characteristics with Japanese national culture characteristics

Industrial policy characteristics (Terzi et al, 2023)	Japanese national culture characteristics
Future-oriented	Long-term orientation (Hofstede et al, 2010), Future Orientation (Javidan & House, GLOBE, 2001)
Sector- and Technology-driven	Secular/Rational (Inglehart & Welzel, WVS, 2014)
Competition is a strength	Institutional Collectivism (Javidan & House, GLOBE, 2001)
Top-down but also bottom-up	Power Distance (Hofstede et al, 2010), Formal Culture (Gesteland, 2003), Intellectual Autonomy (Schwartz, 2006)
Accountable, non-partisan and adaptable	Institutional Collectivism (Javidan & House, GLOBE, 2001), Flexumility (Minkov)
Holistic approach	High-context (Hall, 1990)

Source: developed by the author.

INDUSTRIAL POLICY – NATIONAL CULTURE FIT: THE CASE OF JAPAN

Industrial policy is future-oriented. Japanese culture is long-term oriented

Industrial policy is not simply about planning but much more about modernity and vision for the future. Basically, it is about early enough development of modern production factors and advanced capabilities which in their turn to trigger and sustain the development of targeted industries. Successful industrial policy requires long-term orientation emphasizing patience, persistence and practicicism. The Japanese are described exactly as patient capitalists, following the philosophy of kaizen, that is of incremental small improvements, step-by-step, everyday in everything they do, everyone in the organization. They are prepared to wait whatever time is necessary for pursuing and achieving long-term goals such as becoming leaders in complex sectors and occupying the largest market share in targeted industries.

Since the World War II to the present Japan has made a shift from broad control over foreign exchange and investment to a focus on technology-specific targets like computers and robotics. The United States General Accounting Office has analyzed how Japan uses tools like joint R&D programs, tax credits, and preferential financing to support techno-

logical advancement and assist declining industries. Initially, Japanese industrial policy was more heavily involved in directing capital, but with liberalization and budget constraints, it has increasingly relied on administrative guidance and public-private partnerships. Immediately after the war the government actively controlled national resource allocation, channeling resources into productive investments. Japan maintained low interest rates and wielding trade policies, encouraging exports through incentives. Though exchange rate fluctuations are a recurring issue for trade with the US, the United States General Accounting Office found no evidence that Japan manipulates the yen to keep it artificially low. Since mid – 1970s onwards the Japanese government shifted the national industrial policy from industry-specific to technology-specific targets along with increased attention to product quality, social and environmental issues. Currently the government prioritizes technology development through measures such as joint government-industry research and development programs, tax credits, and preferential tax treatment for high-tech products development and diffusion. Government assistance is provided for declining industries through programs for reemployment and incentives for companies to divest excess production capacity as well as for small- and medium-sized firms to promote technology diffusion. Most recently Japan is transitioning from classic industrial policy levers to venture capital with the SoftBank Group, a technology conglomerate, playing the main role (Terzi et al, 2022).

Industrial policy is sector- and technology driven. Japanese culture is secular and rational

Japan shows the highest score in the world for secular/rational values within the traditional – secular/rational values dimension (World Values Survey, Inglehart and Welzel), understating a relatively low appreciation for religion and also, the leading role of the work group in a Japanese organizational context (unlike other Confucian cultures which assign the highest respect to the family group).

The government and business work together to identify global marketing opportunities. A partnership between the state and business aims at sectoral development, technological development, export development. A key element of Japan's industrial policy is the selection of a target sector, which receives high priority in the allocation of national resources. The Ministry of Economy, Trade, and Industry is primarily responsible for choosing and mobilizing support for the target sector.

The Japanese economy operates under conditions of scarcity of natural resources and land, but with a skilled and loyal workforce. Accordingly, the selection is directed towards sectors that require high qualification, labor intensity, and small quantities of natural resources. The Japanese choose sectors where market leaders suffer from insufficient funding, complacency, or where consumer expectations are unmet. Market segments within the sector are subjected to detailed analysis to identify market segments where economies of scale and learning curve savings can be realized. Traditionally, the strategic approach involves entering these segments with low-cost products that have improved features; capturing market share; while simultaneously continuously rationalizing production costs.

This strategy is based on an excellent understanding of the environment, taking the initiative, and outpacing competitors in every aspect and at every moment, but without frontal attack. The tactic is strike in the corners and continue the attack after the corners are

hit. This is a tactic used by the samurai – attack the corners: if the corners are hit, the spirit of the whole body will also be struck. Japanese companies push competitors out of the market by destroying their resistance capabilities. According to Buddhist logic of the reverse path, their position of defending in the market fundamentally involves taking offensive actions. The Japanese continuously refine market segmentation to capitalize on any potential weaknesses of their competitors. They build a superior defense by tirelessly analyzing the market and improving their products.

The Japanese do not choose sectors whose markets are well-served. They target sectors where existing competitors cannot or do not want to resist Japanese entry. They are flexible in choosing their competitive weapons. The evolution of the market determines the extent to which tools such as price, quality, features, service, distribution channels, communications, and product line development are used to penetrate and capture market share.

Western companies often focus on smaller-volume segments with higher profit margins – however, this strategy proves unsustainable in the long term against Japanese competitors. The Japanese initially aim to establish positions in the mass market, after which they move into high-profile segments. They use mass markets, from which competitors withdraw, to accumulate experience, positive cash flows, and implementation competencies, which are later used to enter niche markets dominated by competitors. When entering a niche market, Japanese companies refine the product from lower-end to high-end without abandoning their mass-market products. This approach to entering niche markets has proven successful.

In industrial policy competition is a strength. Japan scores high on institutional collectivism

Japan demonstrates an unusual combination of cultural orientations, which would not surprise researchers of Japanese culture (Benedict, 1974; Matsumoto, 2002). It is a Confucian and relationship-oriented culture, but at the same time, Japanese culture exhibits a moderate level of in-group collectivism and is one of the global leaders in institutional collectivism (Javidan и House, 2001).

There is intense competition in the domestic market. Competitor monitoring – especially of Japanese (domestic) competitors – is uncompromising. Weaker firms exit the market. As for competitive behavior in the international market, a follow-the-leader strategy is more common than a market leader strategy. Japanese companies do not launch frontal attacks on market leaders; instead, they identify emerging market niches and segments that are not a priority for the leaders. However, their tactical marketing is often aggressive – low prices, rapid expansion of product lines, high spending on advertising, as well as on sales promotions and support for intermediaries.

Japanese companies strive for market share, growth, and market dominance. Overseas operations are part of a carefully planned strategy for global expansion. Clear marketing plans are developed with the main goal of establishing long-term market positions. Profit is not a central objective – it is seen as a result of satisfying customer needs and preferences and achieving market share. The focus is on gaining volume through entry into emerging market segments (or niches) with high potential. Scale is more important than product adaptations. Scale is a prerequisite for achieving high quality, reliability, and service – the core competitive advantages of Japanese companies.

Organizations rely on market-oriented rather than functionally oriented organizational structures. The preference is for small and simple business units focused on a single product line or a single market. Information sharing plays a central role: information spreads quickly among group members, but not to non-members. Overseas subsidiaries are typically headed by local, rather than Japanese, managers.

Industrial policy is top-down but also bottom-up. Japanese culture is hierarchical but also intellectually autonomous

Compared to other countries in the Confucian cultural cluster (except Japan, included here are China, Taiwan, Hong Kong, Singapore, South Korea), Japanese national culture is characterized by a relatively high level of universalism (Trompenaars, 1998), relatively high intellectual autonomy (Schwartz, 2006), a relatively stronger orientation towards harmony, and a relatively weaker power distance. Underlying Japan's description as a formal culture (Gesteland, 2003) are characteristics such as respect for elders and high-ranking personalities, masculinity, and honouring formal behavioural rituals. However, in a work context, although the work group is the established human factor format, the Japanese work group is granted high autonomy; it is a self-managed group. Japanese society is both hierarchical and consensus-oriented, placing high value on harmony. How these two rather opposite characteristics are combined? Yoshimura and Anderson (1997) describe leadership in Japan as mikoshi – translated from Japanese as a sacred palanquin in which bearers carry the lord, the embodiment of the divine, during festivals. Mikoshi is revered because it carries the lord – the earthly representative of God, who, however, could not go anywhere without the bearers of the palanquin (Ono, 2004). What does the analogy show about the leader? The role of top management is very important – its representatives, the leaders, embody the image (spirit) of the company. But they must follow the consensus of the middle management – to work hard to help middle managers achieve group goals. That is, there is a certain deviation from the common understanding of leadership, which focuses on the influence of a specific person – the leader – on followers. What does the analogy show about the followers? The bearers should be relatively equal in height and move at even steps in the same direction when carrying the mikoshi. They loudly shout wasshoi in unison to support each other as they lift and carry the heavy mikoshi forward while each step creates a group energy that each bearer feels deep inside. That is, mikoshi symbolizes how people (followers) share the difficulties, obstacles, wealth, and happiness in their lives through consensus and harmony (Ono, 2004). What does the analysis from the comparative cultural perspective show? The focus of Western leadership theories is on the influence of the individual leader on followers. While Japanese leadership focuses on the relationship between the leader and followers as integrated and inseparable.

Although hierarchy is recognized as a fundamental principle for maintaining social order and stability in Asian cultures, Japan scores relatively lower on this dimension. Japan's cultural landscape becomes even more distinct in light of the findings by Bond and Lun (2012), who identify the country as a global leader in the dimension of autonomy in child-rearing. The socialization of children emphasizes self-regulation, and accordingly, the cultivation of values such as independence and a sense of responsibility. The high importance placed on autonomy in child-upbringing translates into relatively high scores for

intellectual independence among Japanese adults (Schwartz, 2006), along with a strong inclination toward intellectual collaboration.

The descriptions above correspond to what Evans (1995) called a system of embedded autonomy. The government is both external and internal to the private sector. It is committed to higher order goals and policies but always with their eyes and ears wide open on changing circumstances and in consultation with firms. The main and defining thing for Japan is outstanding in its understanding and practical implementation of macro-micro partnership. The work group evolves at a national scale. Government and business are united by common goals and norms of behavior in a cohesive group at the national level. This is a particularly strong and fundamental prerequisite for a successful national industrial policy formulation and implementation. In this respect the role of competent bureaucracy as represented by METI and its agencies cannot be underestimated.

Industrial policy is accountable, non-partisan and adaptable. The Japanese are institutional collectivists, flexible and self-effacing.

Although traditional Japanese values are deeply ingrained in their mentality, the Japanese are profoundly practical when it comes to technical issues. Japanese modernization is based on their own cultural tradition with Western influences. The Japanese adopt foreign instrumental knowledge without rejecting their own deep-rooted value system. Technical knowledge is more easily transferrable internationally compared to social and behavioural knowledge.

Before entering a foreign market, Japanese companies dedicate several months to analyzing the feasibility of entering that market. Research teams assess the market and determine the entry strategy. A local specialist is hired to assist with the development and monitoring of marketing strategies and programs. The focus in planning is on approaches, products, and services that align with the specific characteristics of the selected foreign market. Japanese companies are strongly committed to success. This mindset creates a sense of security and confidence among employees. Team efficiency (belief in success) serves as a way to overcome the high uncertainty avoidance characteristic of Japanese national culture (Hofstede et al, 2010). The Japanese create flexible companies that serve as a framework for innovation in production processes, teamwork, collaborative problem-solving, and decision-making.

The Japanese skillfully capitalize on strategic market windows – opportunities arising from new market segments, technological changes, or new distribution channels. They tend to follow adaptive rather than innovative product strategies. The Japanese are not pioneers in product innovation. Their priorities lie in redesign, improvement, and rapid commercialization of innovations developed elsewhere. At the same time, they generate innovations in production processes.

In spite of the pronounced Government–business interaction, the Japanese bureaucrats manage to keep private firms and their parochial interests at arm's length. Competent bureaucracy and disciplined firms are a well-established feature of the Japanese operational context that facilitate the implementation of industrial policy measures.

The Japanese have proved to be prolific at industrial policy negotiation and renegotiation with multilateral trade institutions. Interestingly, Japan's trade openness has been going

hand in hand with evolving national industrial policy. Although formal measures of domestic market protection and export facilitation were decreasing, in line with Japan joining the GATT in the 1960s and the OECD in the 1970s, industrial policies were persisting although in a subdued manner. METI officials were sent off to the Japanese embassies as commercial attachés, the Japan External Trade Organization, and other public organizations to elicit insights and thus be better prepared for conducting negotiations on various trade issues.

INDUSTRIAL POLICY IS HOLISTIC. JAPANESE CULTURE IS HIGH-CONTEXT

The Japanese Ministry of Economy, Trade and Industry, along with its affiliated agencies, plays a leading role in the development and coordination of national strategies and programs for business development. At the local level, prefectural and municipal administrations are committed to supporting business interests. The influence of public administration and its partnership with business are significant in Japan. The philosophy is: If we don't cooperate, we can't move forward. We move forward together. The government administration, particularly METI, acts as the third party that coordinates business progress.

Resources are scarce for every company. Even large corporations struggle to secure resources for advanced and complex research and development activities. From the perspective of small and medium-sized enterprises (SMEs), the survival of many of them is due precisely to government policies targeting SMEs. Japan is unique among developed countries for systematically implementing policies that serve the interests of SMEs. Even during the period of rapid economic growth (1955–1972), when national industrial policy focused on promoting large corporations, the Japanese government pursued compensatory policies for SMEs.

Japan is known as the country of SMEs. They make up 99.7% of all businesses and provide around 70% of employment. There are two main types of SMEs: independent ones that produce final products, and subordinate ones that act as subcontractors to large companies. While the role of SMEs is undeniable in any market economy, what is specific to Japan is the relationship between large enterprises and SMEs. The subcontracting system is not merely a component supply structure – it is based on the highly specialized skills and know-how of SMEs. They are irreplaceable participants in Japan's economic miracle. The post-war economic growth of Japan was not achieved solely by large companies. On the contrary, without SMEs, particularly in their role as subcontractors, the high economic growth that drew international attention would have been impossible (Nomura, 1981).

Unlike in other developed economies, Japan's development has allowed SMEs to thrive. After World War II, with economic assistance from the United States, Japan underwent an intensive process of technology adoption – especially within large corporations. Technological modernization required substantial resources, but large companies reduced their own investment in equipment by utilizing the production capacity of SMEs. This enabled large companies to avoid the risks of direct investment while promoting the survival and growth of SMEs. Economic development did not destroy SMEs but rather created (sub)sectors where they could contribute to the national economy. SMEs thus became a key

part of the production system of large firms, which in turn imposed technological and cost-reduction requirements on their smaller partners. Furthermore, large corporations often undertook restructuring initiatives for their subcontractors, leading to the formation of hierarchical structures of subcontractors and supply chains.

The partnership between large corporations and SMEs is developed within Japan's distinctive *keiretsu* system. Often, the line between *keiretsu* and non-*keiretsu* firms is blurred. For example, the suppliers' association (*kyoryoku-kai*) of a major manufacturing company is considered a key element of *keiretsu*. At the same time, these associations may include companies that supply other large firms as well, and thus may not be formally considered part of a *keiretsu*. In a vertical *keiretsu*, a large company may own a share in some of its suppliers. But there are also suppliers with whom long-term cooperation has been established without any equity involvement. What matters most is the mutual dependence and sense of care between the companies. Suppliers strive to provide high-quality products at competitive prices, while the large company offers various forms of support – expert, technical, and training-related.

Undoubtedly, the *keiretsu* system is not perfect and presents challenges for its participants. Close inter-company relations and the investments required to maintain them may hinder a large company's openness to new suppliers. The moral obligation of suppliers to their contractors can at times be overwhelming – for example, when employees are required to work overnight to meet client expectations. Despite these challenges, the core of the *keiretsu* remains stable. Large companies and their suppliers work together to identify the root of problems rather than shifting blame. The support – especially training – offered by contractors helps reduce costs and, consequently, the prices charged by suppliers. The loyalty, innovation, and expertise of suppliers are irreplaceable factors contributing to the competitiveness of large Japanese companies.

In their turn, SMEs in Japan self-organize into groups of varying scale. At the local level, SMEs often share a common interest in regional economic development, such as the creation of commercial zones or transport routes. Many SMEs are members of local trade associations.

These local groups are part of national-level organizations that lobby in front of central government authorities to develop favorable national policies and legislation. Although similar processes and mechanisms are found in other countries, Japanese SMEs are particularly motivated to self-organize at the national level.

The next level of SME self-organization is their participation in broad business networks that span both local and national levels. These networks are typically organized by industry sector, though sectors often group further together based on shared cross-sectoral interests.

The role of financial institutions as participants in Japan's broad national group for economic and social development should not be underestimated. The Japan Finance Corporation, which is subordinate to the Japanese government, provides loans to businesses using public funds. Moreover, the government facilitates business access to loans from private banks through its state-backed loan guarantee system. Profitable SMEs with ambitions to expand domestically and internationally are offered a portfolio of services by large private

banks, extending beyond traditional banking services – for instance, access to business contact networks.

The core and defining characteristic of Japan, however, is that all of these macro- and micro-level factors operate under a shared understanding of the value of, and the practically developed framework for, macro–micro partnership. The working group acquires a national scale. Government and business are united by common goals and behavioral norms within a cohesive group at the national level.

CONCLUSION

Japan has a long history of national industrial policy development and implementation. The research shows that the Japanese government has subtly managed to malleablize their targeted interventions in pursuit of public goals. That implementation has always been in view of and in line with the peculiarities of the Japanese culture. Although Japan's practice of national industrial policy is studied by foreign state administrations, the morale is that plain transfer of good Japanese practices is futile unless carefully considered through appropriate cultural lens.

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FINANCIAL DEVELOPMENT OF WESTERN BALKAN COUNTRIES – A DESCRIPTIVE ANALYSIS

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Abstract

The paper explores the level of financial development of the six countries in Western Balkans that have not yet become EU members, namely Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia. Financial development is essential in achieving sustainable economic growth and plays a significant role in the economic convergence of the countries under consideration with the EU. The paper uses descriptive analysis and IMF and World Bank data to explore the level of development of the financial sector in the above-mentioned countries. Even though the countries under consideration display some specifics in their economic and institutional development, as well as the development of their financial markets, there are also similarities. The findings suggest that there is sufficient space for increasing the depth of their financial markets, which will be conducive for the economic growth of the region.

Keywords: financial development, economic growth, Western Balkans

JEL: F36, G10, G20

INTRODUCTION

The relevance of the issue of Western Balkan countries' financial development is determined by numerous factors, among which the main ones are the geopolitical significance of the region and its proximity to Bulgaria, the heterogeneity in the countries' economic development and the need for institutional reforms. In terms of geopolitical importance, the countries of the Western Balkans region are strategic partners of the European Union, and their economic integration is a key prerequisite for the stability and economic development of Europe. Financial development and financial integration are important aspects of this process, as the lack of a developed financial sector and the lack of integration within European financial markets hinder investment and access to finance for businesses and households, thereby limiting economic growth. The geographical proximity and Bulgaria's affiliation to this region determine the importance of the development of the countries in question for our common prosperity.

Therefore, the purpose of this paper is to explore the level of financial development of the six Western Balkan countries, namely Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia. The methodology is based on a descriptive and comparative analysis of statistical data, as relevant variables for financial development are used. First, different measures of financial markets development are analyzed, using most recent data of World Bank, IMF and WB countries' central banks' annual reports and web pages. After that the evolution of the broad-based financial development (FD) index of the

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International Monetary Fund (IMF) is considered, for the period 2002-2021 and for four of the WB countries, as no data is available for this index for Kosovo and Montenegro. The period is divided in two sub-periods of 10 years, 2002-2011 and 2012-2021 and average FD indices for the two sub-periods are calculated for each country to demonstrate the evolution of the index.

FINANCIAL DEVELOPMENT – CONCEPT, IMPORTANCE AND MEASUREMENT

Financial development is a multifaceted concept and refers to the level of development of the financial system, understood as a combination of financial institutions and financial markets. This multifaceted nature reflects the multiple functions the financial system plays for the economy, i.e. pooling of savings and allocating them to productive investments, monitoring of investments, risk diversification and risk sharing, reduction of information asymmetry and etc. Due to those functions the financial system is responsible for the accumulation of capital in the economy and therefore financial development is positively related to economic growth. This link is well documented in theoretical and empirical literature. As summarized in *Levine, 2005* finance influences growth through several main channels – producing information; allocating capital to productive uses; monitoring investments and exerting corporate control; facilitating trading, diversification, and management of risk; mobilizing and pooling savings; and easing the exchange of goods and services. Empirically the link is confirmed by *King and Levine, 1993* and *Levine and Zervos, 1998*.

The financial development is also positively associated with financial stability as through risk sharing and income smoothing the financial markets help absorb shocks and reduce volatility.

An important insight about the link between financial development and economic growth as highlighted by some authors (*Arcand, Berkes, and Panizza, 2012*) is that the relation between the two is bell shaped, which implies that after reaching a certain level of financial development, the marginal returns to growth start to diminish. The same refers also to the link between financial development and economic stability. In other words, further financial deepening or “too much finance” can be associated with costs in terms of less growth and financial instability. This finding is supported by research demonstrating that in some advanced economies the financial sector depth may have reached a point where more of it will not contribute to increasing efficiency of investment and the excessive financial markets have diverted resources away from the real sector, as well as promoted risk-taking and leverage. *Sahay et al., 2015* estimate that the level of financial development above which the positive effects on growth begin to decline lies between 0.4 and 0.7 of the FD index.

There are numerous studies that specifically treat the problem of financial development of WB countries. Research by *Vangjel, R. and B. George, 2022* studies the relation and

¹ Vangjel, R and B. George, 2022, Balkan Financial Development and Its Impact on Economic Growth: Granger Causality, Journal of Government and Regulation, Volume 11, Issue 4.

the direction of causality between financial development and growth for the six WB countries in 2005-2019, using vector autoregression. Their results prove that financial development causes economic growth overall, especially when private credit was used as the proxy for it. They also observed bi-directional links when financial development was proxied by broad money. In a similar study *Billali et al., 2023*¹ also confirm a positive link between financial development and economic growth for Western Balkan countries in the period 2010-2020, using regression analysis. *Caushaj, S. and T. Mocka, 2024*² explore the financial development-growth link in a study for Albania.

In the empirical literature, the most used proxies for financial development are the two variables – the ratio of bank private credit to GDP and the market capitalization to GDP ratio. With the global development of financial markets, their increased complexity and increasing role of non-bank intermediation since the 80-ies and 90-ies of the previous century, using only those two parameters to judge for the level of financial development is too constraining. Therefore in 2015 the IMF introduced a broad index³ that incorporates various measures of financial development. In 2015 the index was calculated for a panel of 183 countries for the period 1980 – 2013. As of today, the FD index data is available till the year 2021.

The broad-based FD index is based on indices for the level of development of financial institutions (FI) and Financial Markets (FM) in terms of their depth, accessibility and efficiency. The variables used as proxies for the above indices are 20 in number and are listed in the table below.

Table 1. Variables used in the calculation of the broad-based financial development index

Category	Indicator
Financial Institutions	
Depth	Private-sector credit to GDP Pension Fund assets to GDP Mutual Fund assets to GDP Insurance premiums, life and non-life to GDP
Access	Bank branches per 100 000 adults ATMs per 100 000 adults
Efficiency	Net interest margin Lending-deposit spread Non-interest income to total income

¹ Billali, A., Beka, A. and A. Gara, 2023, Financial Development and Economic Growth: Evidence from Western Balkan Countries, InterEULawEast, Journal for the International and European Law Economics and Market Integration, August 2023

² Caushaj, S. and T. Mocka, 2024, Financial Development and Economic Growth: Evidence from Albania, *Economicus*, No. 23, Issue 1/2024

³ The index was first proposed by Sahay et al., 2015 in “Rethinking Financial Deepening: Stability and Growth in Emerging Markets”, IMF Staff Discussion Note and later the methodology was formalized and introduced in a IMF Working Paper 16/5 “Introducing a new broad-based index of financial development” by K. Svirydzenka.

Category	Indicator
	Overhead costs to total assets Return to assets Return on equity
Financial Markets	
Depth	Stock market capitalization to GDP Stocks traded to GDP International debt securities of government to GDP Total debt securities of financial corporations to GDP Total debt securities of nonfinancial corporations to GDP
Access	Percent of market capitalization outside of top 10 largest companies Total number of issuers of debt (domestic and external, financial and nonfinancial)
Efficiency	Stock market turnover ratio (stocks traded to capitalization)

Source: Svirydzenka, K., 2016.

FINANCIAL DEVELOPMENT OF WESTERN BALKAN COUNTRIES

Western Balkan countries are small open economies, with the current GDP in billion USD spanning within the wide range between 8 and 11 billion USD for Montenegro and Kosovo respectively, to 89 billion in Serbia. All of them fall within the category of upper middle-income economies with GDP per capita in 2024 being lowest in Kosovo (7299 USD) and highest in Montenegro and Serbia (12936 and 13524 USD respectively) as per the World Bank data. The remaining three countries have GDP per capita in 2024 in the range 9000-10000 USD. The GDP per capita of the considered economies, although increasing, remains far from the EU average of 43145 USD.

The financial sectors of the economies under consideration are small and bank based. The banking sector is predominantly owned by foreign entities as demonstrated by the high percentage of foreign ownership of capital, ranging between 65 and 85%. Although the bank assets take the vast share of the financial sector's total assets, their relative size to GDP is not that significant. The deposit money bank's assets to GDP is lowest in Kosovo (51,5%) and highest in Montenegro (69,7%). In Albania and Serbia, the banks' assets share is about 60% of GDP.

The financial sector's depth and level of financial intermediation can be illustrated by the domestic credit to the private sector by banks as a percentage of GDP. This variable ranges from the lowest point of 33% for Serbia and 33,9% for Albania to the highest level of 61% in Kosovo, but for all countries the values are well below the EU average of 75,8%, signifying for the low depth of financial markets.

The bank credit to bank deposits ratio varies from the lowest level of Albania (51,6%), implying low efficiency of financial intermediation, to the highest level of 91,9 and 93,1% for North Macedonia and Montenegro respectively.

Capital market development in the Western Balkans has remained largely stagnant since the early 2000s. Although most countries in the region established stock exchanges in the late 1990s and early 2000s, such as the Belgrade Stock Exchange, the Sarajevo and Banja Luka Stock Exchanges, the Macedonian Stock Exchange, and the Montenegro Stock Exchange, trading activity has remained minimal, and markets are largely illiquid. Albania's Tirana Stock Exchange, founded in 1996, ceased operations in 2014, while Kosovo has never established a functional exchange. Across the region, primary market issuance is virtually absent and secondary trading volumes are negligible. The lack of institutional investors, weak regulatory frameworks, limited corporate transparency, and underdeveloped financial infrastructure have prevented these exchanges from becoming effective channels of capital formation. As a result, the Western Balkan economies remain predominantly bank-based, with capital markets playing no meaningful role in financial intermediation or investment financing.

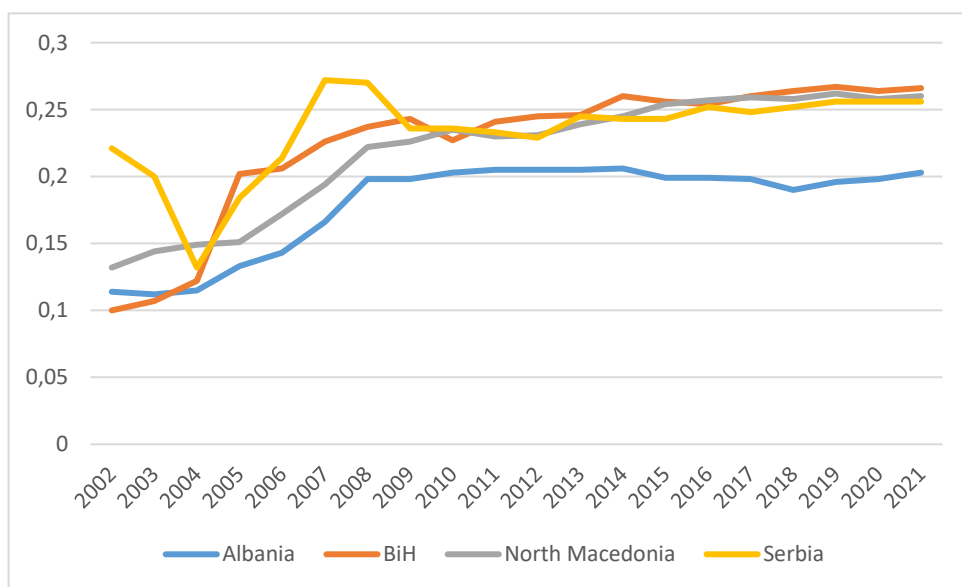
Table 1. Selected indicators for financial development for Western Balkan countries, most recent data

	Alba- nia	BiH	Kosovo	NM	Monte- negro	Ser- bia	EUav.
GDP, current USD billion, 2024	27,177	28,343	11,149	16,685	8,070	89,083	na
GDP per capita, current USD, 2024	8575	8663	6221	8624	12077	12282	41392
Number of banks operating	11	13	12	9	11	20	Na
Foreign ownership of banks, %	65	83,6	84,3	77,5	80	77	Na
ATMs per 100 000 adults, 2023	40,11	62,72	41,81	83,45	61,54	54,43	61,49
Domestic credit to private sector (% of GDP), 2024	33,9	50,4	61	54,8	46,4	33	75,8
Interest rate spread (%), 2023	5	2,9	na	3,6	6,1	na	na
Deposit money banks' assets to GDP (%), 2021	59,8	61,4	51,8	64,7	69,7	59,9	na
Bank credits to bank deposits (%), 2021	51,6	75,1	86,1	91,9	93,1	79,3	na

Source: IMF and World Bank data, central banks' web pages and latest annual reports.

If we look and analyze the broad-based index for financial development, it justifies some of the findings made above. Figure 1 below shows the evolution of the IMF financial

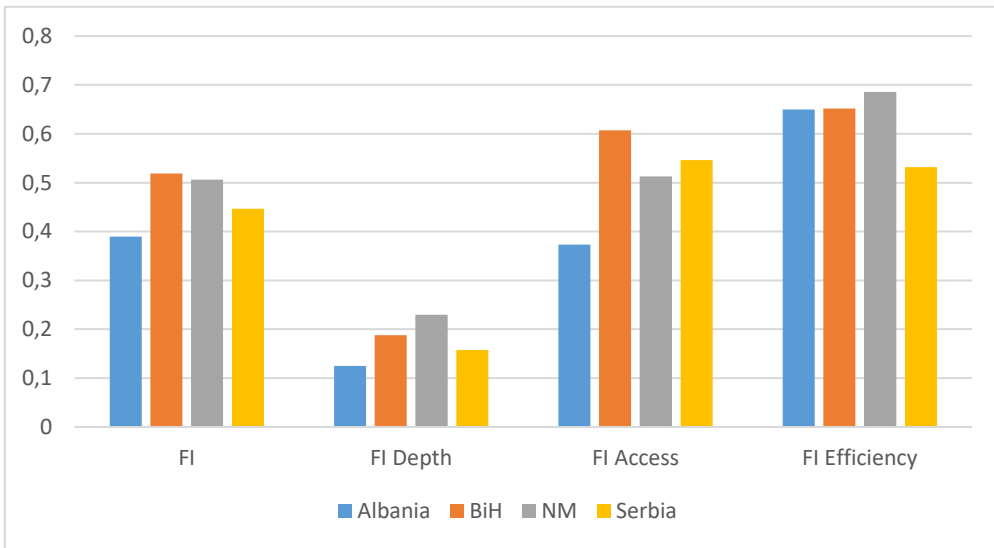
development index for Western Balkan countries in the period 2002 – 2021 (20 years). As there is no data for Kosovo and Montenegro, conclusions are made only for the remaining four countries. All 4 countries start from relatively low levels of financial development and experience high speed of financial development in the period 2002 – 2008. The domestic and global economic and financial conditions contribute to that. The Global Financial Crisis and the economic correction afterwards led to moderation of the speed of financial development of the WB countries in the next period. As of 2021, Albania displays the lowest level of financial development of 0,20 and 25% increase of the FD index, from 0,159 average in the first ten years to 0,199 average in the second ten-year period. On the other hand, Bosnia and Herzegovina and North Macedonia display relatively close results. Staring from low levels of the index they both record a 35% increase of the FD index in the second ten-year period to levels above 0,25. Serbia is positioned a little below the two countries with average FD index in the second period of 0,248 but demonstrating very modest improvement, compared to the first ten-year period.



Source: Financial Development Index Database.

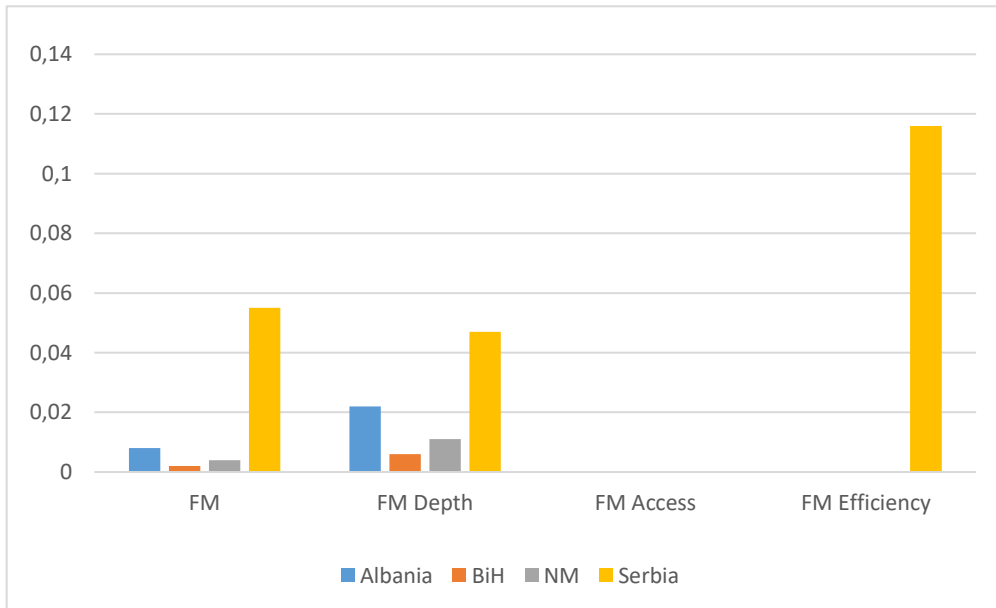
Fig. 1. Financial Development index of Albania, BiH, NM and Serbia, 2002-2021

When looking at the data for sub-indexes of financial development for institutions and markets for year 2021, depicted in Figure 2 and Figure 3 respectively, one can conclude that the financial development in the four countries under consideration is based on the institutions (the indirect channel of financing through financial intermediaries) and not on the financial markets (the direct channel of financing through the markets).



Source: Financial Development Index Database.

Fig. 2. Financial Institutions development in Albania, BiH, NM and Serbia in 2021



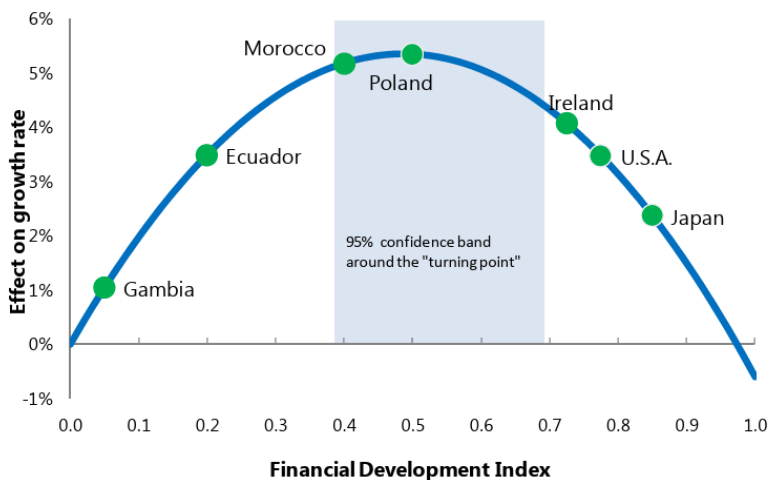
Source: Financial Development Index Database.

Fig. 3. Financial Markets development in Albania, BiH, NM and Serbia in 2021

This is in tune with the fact that there are no functioning markets for financing through issuance of debt and equity securities in the region.

The data for the financial institutions sub-index shows that the low level of FD is primarily due to the low level of depth of the financial system, rather than the levels of access and efficiency of financial institutions. These findings suggest that the WB countries have a lot of room for improvement, mainly in terms of increasing the depth of the financial markets and working for the establishment of functioning and vivid stock exchanges.

Turning back to the bell-shaped line, illustrating the link between FD and economic growth, based on the findings of *Sahay et. al, 2015*, we can position the WB countries with their average FD indices in the last ten-year period (2012-2021) somewhere around the point of Ecuador (the red dot), while the room for improvement that will be conducive to stronger economic growth can be depicted with the line between Ecuador and Poland (see figure 4).



Source: Sahay et al. (2015).

Fig. 4. Financial development effect on growth

CONCLUSION

The analysis of financial development shows that the financial systems of the Western Balkan countries remain with limited depth and are bank-dominated. Although gradual progress has been achieved since the early 2000s, the level of financial development still lags significantly behind the EU average. The IMF Financial Development Index confirms that Albania, Bosnia and Herzegovina, North Macedonia, and Serbia are on the lower part of the financial development scale, with modest improvements mainly driven by banking institutions. The Western Balkan economies still operate on the ascending part of the finance–growth curve, implying that further financial deepening can support sustainable economic growth.

The region's capital markets remain underdeveloped if they exist at all, limiting the availability of long-term financing and investment opportunities. Strengthening financial institutions, improving regulatory quality, and fostering market-based financing are essential for accelerating convergence with the EU.

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TÜRKİYE’S EU ACCESSION PROCESS AND EXPERIENCE WITH THE USE OF PRE-ACCESSION FUNDING: SOME IMPORTANT LESSONS FOR UKRAINE

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Abstract

This paper examines Türkiye’s experience with EU pre-accession funding, focusing on institutional alignment and regional development. It explores how Türkiye established a centralised yet multi-level framework for managing EU funds, shaped by national and regional planning. While municipalities and regional agencies participated in implementation, decision-making remained centralised. Türkiye successfully absorbed IPA funds and aligned with EU cohesion principles, yet challenges such as limited local ownership and declining fund flows under IPA III persist. The paper offers lessons for countries like Ukraine, recommending a phased, legally grounded model that balances strong central coordination with local empowerment.

Keywords: Türkiye; EU accession; pre-accession funds; regional development; Ukraine

JEL: F15, F35, R58

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INTRODUCTION

On 22nd February, 2022, Russia started its full-scale invasion on Ukraine, on February 28th, the country that was already in war, submitted its application for EU membership, on June 23rd, the European Council granted Ukraine candidate status, and in December, it decided to open accession negotiations. The formal launch of the negotiations took place on June 25, 2024, with the first Intergovernmental Conference at ministerial level, following the adoption of the Negotiating Framework.

With accession negotiations now underway, Ukraine has entered a new phase that requires a structured, chapter-by-chapter approach to alignment with the EU acquis. Among the 35 negotiation chapters, Chapter 22 – Regional Policy and Coordination of Structural Instruments – is one of the most complex and critical: it is about funds for public investments, about necessary institutions, about effective and efficient public administration. With the bilateral screening meeting in Brussels (29-30 September 2025), Ukraine has gained valuable practical experience in presenting its institutional setup, policy instruments and planning mechanisms under Chapter 22. The Cluster 5 Report sets out the Com-

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mission's assessment of alignment with Chapter 22 and the recommended opening benchmark(s) that Ukraine must meet before negotiations can take place. Based on recent enlargement rounds, the most ambitious timeline for EU membership of Ukraine is 2030. By that time Ukraine must demonstrate readiness in negotiations and ensure readiness from day 1 as a Member State.

EU accession is a transformative process for candidate countries, marked by substantial socio-economic, political, and administrative reforms. The journey demands rigorous alignment with EU standards and norms – encompassing democratic principles, the rule of law, human rights, and market-oriented economic policies. Türkiye's experience in this regard is particularly relevant for Ukraine. As a country engaged in accession negotiations for an extended period, Türkiye's journey encapsulates a wealth of experiences, including the hurdles and milestones emblematic of this intricate process.

A significant component of this journey has been preparing for and managing EU financial assistance, a critical aspect for any candidate country. How Türkiye has navigated pre-accession funding – the strategies employed and the outcomes achieved – offers valuable insights. This paper distills Türkiye's experiences into actionable lessons for Ukraine, which aspires to EU membership. By understanding Türkiye's approach, the challenges encountered, and the strategies implemented, Ukraine can better prepare and position itself on its own EU accession path.

TÜRKIYE'S EU ACCESSION PROCESS

Historical Overview and Negotiations:

Türkiye's bid for European integration dates back to 1959 with an application for association with the European Economic Community, followed by the landmark 1963 Ankara Agreement establishing formal ties. A full membership application in 1987 faced delays, but Türkiye was officially recognized as a candidate at the 1999 Helsinki European Council. This opened the door to accession negotiations, which formally began in 2005. In the early 2000s, Türkiye undertook accelerated reforms to meet the EU's Copenhagen criteria – including constitutional and legislative changes to strengthen democracy, human rights, and rule of law. Initial progress was made in aligning many policies with the EU *acquis*, and several negotiation chapters saw advancement. However, momentum slowed as negotiations became protracted. Political shifts within Türkiye, “enlargement fatigue” and increased scrutiny within the EU, and broader geopolitical factors led to many chapters stalling or remaining unopened. Issues such as human rights and judicial independence, as well as disputes with some EU member states, have left Türkiye's accession process effectively frozen in recent years. Today, while Türkiye remains an official candidate, the feasibility and timing of its EU membership are uncertain amid mutual skepticism.

Institutions and Actors

The coordination of Türkiye's EU accession efforts has been led by the central government. The former Ministry for EU Affairs, now integrated as the Directorate for EU Affairs within the Ministry of Foreign Affairs, spearheads negotiations and alignment efforts. Each line ministry in Türkiye has departments or units dedicated to EU alignment in their policy area, ensuring that EU rules and standards are integrated into sectoral policies. The Turkish Embassy in Brussels and the EU Delegation in Ankara serve as key diplomatic channels, facilitating continuous dialogue and providing feedback on reforms¹. Turkish civil society organizations and business associations (such as TÜSİAD and TOBB) have also played a role in advocating for EU-oriented reforms and raising public awareness, although their influence on official negotiations is indirect. Overall, the accession process has been centrally managed by Ankara, with limited formal input from local governments, reflecting the highly centralised nature of policy-making in Türkiye.

Current State of Play

In the past decade, the EU's enlargement approach has shifted toward a more cautious stance, emphasizing "consolidation before expansion." The EU's internal challenges (financial crises, Brexit, rising Euroscepticism) led to stricter expectations that candidates fully adhere to EU standards and contribute to regional stability. This changing context has further slowed Türkiye's path. The EU has also prioritized integration of Western Balkan countries and support to Eastern partners like Ukraine, framing enlargement as a tool for promoting stability and democracy in those regions. For Türkiye, domestic developments – including concerns over democratic backsliding – have strained relations. While economic interdependence between Türkiye and the EU remains significant (e.g. through the Customs Union), political and institutional divergences have prevented any new chapters from opening since 2016. Thus, Türkiye's accession process is at a standstill, underscoring the complex interplay of internal reforms, EU policy shifts, and geopolitical factors that shape enlargement outcomes (European Commission, 2023).

OVERVIEW OF TÜRKIYE'S ADMINISTRATIVE STRUCTURE

Türkiye's governance and administrative setup has crucial implications for how it plans and uses development funds. The country's system is highly centralised. In 2018, Türkiye transitioned to a Presidential system of governance, abolishing the Prime Ministry and concentrating executive power in the presidency (Republic of Türkiye, 2017). Under this framework, the President and central government have overarching authority over policy and budget decisions. Administratively, Türkiye is divided into 81

¹ For further information about the history and state of play in accession process please see <https://www.ab.gov.tr>

provinces (iller) overseen by governors appointed by the central government. Below provinces are districts and municipalities. Local governments (municipalities, metropolitan municipalities in large cities, and provincial special administrations) are elected and have responsibilities for local services; however, their fiscal autonomy and decision-making powers are limited by national legislation. Key local government laws (such as the Municipalities Law No. 5393 (Republic of Türkiye, 2005a) and Provincial Administration Law No. 5302 (Republic of Türkiye, 2005b) delineate these roles), and in practice local administrations depend heavily on central funding and oversight.

Regional development policy in Türkiye is coordinated by the central government through national plans and newly established regional institutions. Türkiye adopted the EU's NUTS regional classification in 2002 (Council of Ministers of the Republic of Türkiye, 2002), dividing the country into 26 NUTS-2 level regions. In 2006, Law No. 5449 created Regional Development Agencies in each of these regions (Republic of Türkiye, 2006). These agencies prepare regional development plans and support local projects, acting as an intermediary between central strategies and local needs. Strategic planning is guided by the country's Development Plans (multi-year national plans; e.g. the current Twelfth Development Plan 2024–2028) and a National Strategy for Regional Development (Ministry of Industry and Technology, 2025a). These documents set priorities for reducing regional disparities and improving infrastructure and services across provinces. Financial institutions also play a role: development banks such as TKYB (Development and Investment Bank of Türkiye (TKYB), 2025) and TSKB (Industrial Development Bank of Türkiye (TSKB), 2025), and İller Bank (İL-BANK, which funds municipal infrastructure) (İller Bankası (İLBANK), 2025), provide credit and investment to support regional and local projects. Overall, despite multi-level planning and the presence of regional agencies and local authorities, the formulation and implementation of development initiatives remain centrally steered. This centralised administrative structure influenced how Türkiye managed EU pre-accession funds, as it favored top-down coordination and uniform standards across regions, while potentially limiting grassroots participation in development initiatives.

INSTRUMENT FOR PRE-ACCESSION ASSISTANCE (IPA) IN TÜRKİYE

EU Financial Assistance Overview

As an EU candidate, Türkiye has been a major beneficiary of the Instrument for Pre-Accession Assistance. IPA funds were provided in multi-annual frameworks: IPA I (2007–2013) and IPA II (2014–2020), followed by the ongoing IPA III (2021–2027). Under IPA I and II, Türkiye received a combined allocation of roughly €9 billion to support reforms and development projects across various sectors. These funds were channeled into components (later sectors) such as transition assistance, regional development, human resource development, and rural development. While substantial, the scale of IPA assistance was modest relative to Türkiye's size and investment needs.

Turkish authorities regarded IPA funding less as a large source of capital and more as a mechanism to prepare for the much larger European Structural and Investment Funds that full EU members receive. Consequently, IPA projects in Türkiye were designed both to address immediate development priorities and to build up administrative capacity and experience in managing EU-style programs.

Management and Control Systems

Türkiye established a **decentralised implementation system** for IPA, meaning Turkish institutions manage the funds under EU oversight. A National IPA Coordinator (within the Directorate for EU Affairs) ensures overall strategic coordination with the European Commission. The Treasury (now part of the Ministry of Finance) designated a National Authorising Officer to supervise financial management and adherence to EU financial rules. For each IPA component/sector, an **Operating Structure** was set up in a relevant ministry or agency, acting as the program authority responsible for planning, selecting, and implementing projects in that sector (European Commission, 2025a). Initially, Türkiye used a Central Finance and Contracts Unit as a dedicated procurement body, but over time the Operating Structures in line ministries took on the contracting authority role as well. This meant that each ministry's IPA unit not only programmed funds but also handled tendering and contracting for projects, under the supervision of the Central Audit and Certification bodies. While this centralised-in-ministry model ensured tight control and uniform procedures, it also led to variations in capacity between ministries. Some Operating Structures were better staffed and resourced than others, leading to differences in implementation performance. No local or regional bodies were given direct management authority over IPA funds; all decisions on project selection and contracting remained within central ministries, a setup chosen for efficiency and control. The downside was that local stakeholders often felt excluded from decision-making, and the lack of intermediary managing institutions at regional level meant limited development of sub-national fund management expertise.

Programming and Monitoring

IPA programming in Türkiye was closely aligned with national development priorities and EU accession benchmarks. Multi-annual **Operational Programmes** were developed for each sector (e.g. environment, transportation, human resources), outlining priority areas and types of projects to be funded. These programs were prepared by the Operating Structures in collaboration with the European Commission, and they reflected both EU policy objectives and Türkiye's strategic needs. Implementation was monitored through joint committees: each programme had an IPA Monitoring Committee and sectoral sub-committees including representatives from Turkish ministries, the European Commission, and sometimes local stakeholders or civil society. These bodies reviewed progress, spending rates, and results of projects. Monitoring reports indicated that Türkiye generally met **absorption targets**, utilizing the vast majority of allocated IPA funds within the timeframe. The strong absorption performance was attributed to effective central coordination and the emphasis on ready-to-implement

projects (especially in areas like transport infrastructure and vocational training facilities). However, monitoring also highlighted persistent issues such as the **limited involvement of local authorities** in project identification and the need for more bottom-up feedback into program design.

Absorption Capacity and Outcomes

Türkiye's administrative capacity enabled it to achieve high absorption rates of IPA funds, often higher than some smaller candidate countries. By investing in training of staff, setting up clear procedures, and requiring rigorous planning of projects, Türkiye ensured that EU funds were not left idle. This helped finance a range of projects: building local infrastructure (roads, water treatment, schools), supporting SMEs and agriculture, and strengthening institutions (e.g. improving judicial systems, vocational education). Many projects under IPA also supported Türkiye's compliance with the EU *acquis* in fields like environmental standards and border management. In terms of regional policy, Türkiye sought to align IPA-funded investments with its own Regional Development Plans (Ministry of Industry and Technology, 2025a), trying to ensure that EU funds contributed to reducing regional disparities. That said, the **centralised structure** meant local ownership of these projects was sometimes weak – local governments often implemented projects designed at the national level rather than originating their own EU-funded initiatives. A notable challenge emerged with staffing: the intensive workload on civil servants in IPA units, without additional incentives or recognition in the national system, led to burnout and turnover over time. This illustrates the strain a centralised model can place on a limited pool of specialists. Moreover, the external political context has shifted. Under IPA III (2021–2027), the EU has **significantly reduced** funds for Türkiye due to political considerations and reallocated attention to other regions. The European Commission's new Western Balkans economic plan (excluding Türkiye) and the removal of country-specific allocations in IPA III mean Türkiye now faces a sharp decline in EU funding inflows. This trend underlines a reality that, despite Türkiye's established structures, access to EU financial support is not guaranteed and can depend on the broader political climate.

LESSONS LEARNED FROM TÜRKIYE'S CASE

Alignment with EU Standards

A core lesson from Türkiye's experience is the importance of aligning national policies and regulations with EU standards early and comprehensively. Türkiye's gradual adoption of EU norms – in areas such as public financial management, procurement, and sectoral regulations – facilitated the effective use of EU funds and advanced its regional development goals. **For Ukraine, aligning legal and institutional frameworks with EU *acquis* will not only smooth the accession process but also ensure that EU-funded projects are implemented to the required standards, maximizing their impact.**

Effective Utilisation of Funds

Türkiye demonstrates that simply receiving funds is not enough; strategic and effective utilisation is key. Turkish authorities directed IPA resources to priority projects in infrastructure, human capital development, and institutional capacity building, which helped improve economic and social outcomes in the regions. **Ukraine should ensure that incoming EU assistance (for reconstruction and development) is channeled into high-impact areas. Projects should be selected based on clear criteria of long-term value, and there should be robust mechanisms to evaluate outcomes, so that each euro spent contributes to sustainable growth and EU integration readiness.**

Political and Economic Stability

Türkiye's EU journey was marked by periods of rapid reform as well as periods of stagnation due to political and economic turbulence. These fluctuations (e.g. changes in government, financial crises) sometimes derailed reform momentum and affected fund absorption. **Ukraine can learn that maintaining a consistent commitment to reform is crucial. Even amid political changes or economic difficulties, a steady focus on EU-related reforms and prudent economic management will build credibility and resilience, ensuring that pre-accession funds are used continuously and effectively toward stated goals.**

Governance and Institutional Capacity

The Turkish case underscores that strong institutions and good governance practices are fundamental to success. Türkiye invested in creating dedicated structures for EU funds and trained a cadre of experts, which was critical for meeting EU requirements. At the same time, weaknesses in governance (such as bureaucratic centralisation and uneven capacity among agencies) created bottlenecks. **For Ukraine, building robust institutional capacity at both central and regional levels is essential. This includes training civil servants in EU procedures, establishing transparent and accountable fund management systems, and empowering local administrations with the skills and authority to execute projects. A clear governance framework that delineates responsibilities and ensures coordination will help avoid overlaps or gaps in implementation.**

Stakeholder Engagement

Broad-based support and participation improve development outcomes. In Türkiye, involvement of civil society, the private sector, and local stakeholders proved beneficial in some programs (for instance, consulting businesses on improving competitiveness, or NGOs on social projects). However, overall engagement of local actors was limited in decision-making, which sometimes led to mismatches between local needs and project designs. **Ukraine should adopt an inclusive approach from the outset: involve municipalities, regional councils, community organizations, and businesses in planning and monitoring EU-funded projects. Such engagement will enhance transparency, ensure projects address real needs on the ground, and foster a sense of ownership that can sustain projects beyond the funding period.**

Geopolitical Context Management

Türkiye's unique geopolitical position – bridging Europe and Asia and dealing with regional conflicts and migration flows – both offered leverage and posed challenges during its EU accession. At times, strategic considerations (NATO alliance, migration agreements) kept EU-Türkiye dialogue alive even as reforms stalled, but they did not substitute for meeting accession criteria. **Ukraine's ongoing security challenges make its situation different, yet the lesson holds that geopolitical importance can garner international support, but it cannot replace the hard work of reforms. Ukraine should use the accession and reconstruction process as a catalyst to modernize its governance and economy, while diplomatically navigating its relations with both the EU and neighboring countries. A balanced approach that leverages international support for stability and development, without losing sight of compliance with EU norms, will strengthen Ukraine's case for eventual EU membership.**

In summary, Türkiye's case offers strategic insights regarding the balance between central authority and sub-national involvement in the EU accession and funding process. Adapting these lessons to Ukraine's context – committing to EU-aligned reforms, building capable institutions, engaging stakeholders, and prudently managing political and geopolitical challenges – can pave the way for a successful integration trajectory, whereby external funding effectively supports domestic development and EU readiness.

CONCLUSIONS AND RECOMMENDATIONS

Türkiye's experience with EU pre-accession funding highlights a fundamental trade-off between **centralization for efficiency** and **decentralization for inclusiveness**. On one hand, Türkiye's highly centralised IPA management structure proved effective in meeting spending targets and ensuring that projects aligned with national strategies. A primary reason for this central approach was efficiency: given that the total IPA funds were relatively small for a country of Türkiye's size, it was deemed more effective to concentrate management in central bodies rather than diffuse responsibilities. This avoided the complexity of establishing extensive local structures for what was, in essence, a limited resource. The result was a streamlined system that delivered projects and met EU requirements with minimal delays. On the other hand, this model had clear drawbacks. Because Operating Structures and contracting authorities were all nested within central ministries, **local authorities and regional bodies had little say** in how projects were prioritized or executed. The absence of intermediary institutions to share decision-making led to perceptions that IPA programs were technocratic exercises run by a small group in Ankara, rather than a nation-wide effort. Furthermore, differences in capacity among the various ministries' IPA units introduced inconsistencies, and the lack of special incentives or career recognition for staff in these units contributed to higher turnover, potentially undermining institutional memory. Over time, it became apparent that the centralised system, while functional,

was not evolving to empower lower levels of government. Meanwhile, the external environment changed: under IPA III, **EU fund flows to Türkiye have decreased sharply**, as the EU's focus shifted to other regions and funding became more conditional on democratic norms. This reduction in support means Türkiye is not imminently moving toward managing larger volumes of EU funds (such as cohesion funds), which in turn has postponed any impetus to decentralise its fund management system.

For Ukraine, which is now on the cusp of receiving substantial international and EU financial support for reconstruction and pre-accession, these insights are timely. Ukraine's immediate context – a post-conflict rebuilding effort – may necessitate a strong central role in planning and fund allocation, to rapidly mobilise resources for national priorities. Indeed, with the **EU's Ukraine Facility** envisaging up to €50 billion in support, Ukraine must prepare to absorb funds on a scale even larger than what many EU members receive. **Central coordination will be essential** to ensure these funds are used strategically and transparently across the country. However, as Türkiye's case demonstrates, **excluding local governments for too long can undermine effectiveness in the long run**. Therefore, Ukraine should adopt a *phased approach* to fund management. In the **short term**, a more centralised setup is justified: national ministries and agencies can take the lead in disbursing reconstruction funds, given that local capacities are strained by war and may lack resources. This centralist approach must be coupled with safeguards (clear criteria for project selection, anti-corruption measures, and close monitoring in partnership with the EU) to maintain donor confidence. **In the medium to long term**, Ukraine should progressively decentralise aspects of fund management. This could involve establishing **intermediate bodies** or regional offices of central agencies that work hand-in-hand with oblast and municipal authorities. For example, sectoral agencies (in areas like employment, education, or infrastructure) might have regional branches that serve as liaison points, helping local governments design and implement projects under national programs. Such arrangements can build local capacity while the central government retains overall control and guidance.

Ukraine might also consider creating a **dedicated Operational Programme for Regional Development** within its EU funding architecture. Under such a program, a central ministry (for instance, a Ministry of Regional Development) would act as the Operating Structure, but implementation could be subdivided into regional components. Each region would prepare a regional development plan (aligned with national strategy) and local institutions could act as implementing partners or intermediate bodies for projects in their area. This model would ensure that, as EU funds increase over time, local administrations gain direct experience in managing a share of those resources – essentially a training ground for future cohesion policy management. A critical consideration is **absorption capacity**: not all regions will be immediately able to handle large budgets or complex EU procedures. Thus, Ukraine should **gradually increase** the responsibilities and funding delegated to local levels. Early on, pilot regions or cities with higher capacity can take on more tasks, while others receive training and

mentoring. The allocation of funds can be scaled up as local institutions demonstrate readiness, minimizing the risk of underutilized funds or implementation failures.

Another recommendation is to establish an **appropriate legal and regulatory framework** to support the fund management structures. Türkiye's experience showed that having personnel manage EU funds as part of the regular civil service without special provisions led to human resource challenges. Ukraine should proactively enact laws or regulations that address the unique needs of managing EU and international funds. Such legislation could provide: special status and incentive packages for experts working on EU-funded projects (e.g. competitive salaries, training opportunities, recognition in career advancement); streamlined procurement and financial management rules that reconcile EU requirements with national law (so that officials are not caught between two sets of rules); and clear mandates for coordination between central and local authorities on EU projects. By legally formalising the roles and benefits of those involved in fund management, Ukraine can attract and retain qualified professionals and avoid capacity shortfalls.

In conclusion, **Türkiye's EU accession and IPA funding experience illustrates the importance of balancing efficiency with inclusivity** in governance. A centralised approach enabled Türkiye to utilize funds quickly and meet targets, but at the cost of weaker local engagement. As Ukraine embarks on its own EU-oriented reforms and manages unprecedented reconstruction funds, it has the opportunity to craft a more balanced system. By starting with strong central oversight and gradually empowering regional and local institutions, Ukraine can build a fund management architecture that is both efficient and broadly supported. Such a system would be more adaptable and resilient – capable of handling large-scale investments, responsive to local needs, and aligned with EU best practices. Ultimately, learning from Türkiye, Ukraine should aim to **maximize the developmental impact of pre-accession assistance while laying the institutional groundwork for successful future EU membership**, where both national and sub-national bodies work in tandem to achieve cohesive growth.

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THE EFFECTS OF SUSTAINABLE DEVELOPMENT POLICIES ON THE WELFARE STATE IN THE EUROPEAN UNION AND TÜRKİYE

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Abstract

Since the 1990s, sustainable development has become a constitutive paradigm in the rescaling of the welfare state within the European Union. By incorporating this approach into its treaties, the European Union has integrated policies on just transition, energy poverty, green employment, and digital transformation with social rights. In Türkiye, however, although the discourse of sustainable development appears in policy plans and strategic documents, its implementation has largely retained a growth-oriented and assistance-based character. This study comparatively examines the influence of the sustainable development paradigm on the institutional forms of social policy and the transformation of the welfare state in the European Union and Türkiye.

Keywords: Sustainable development, welfare state, European Union, European Social Model, Türkiye

JEL: Q56, I38, H53, F55, O52, O53

INTRODUCTION

Sustainable development has reshaped the modern understanding of development by integrating economic growth, social justice, and environmental responsibility within a single framework. It demands not only redefined environmental policies but a wider transformation of economic and social structures. In this context, sustainable development stands at the core of a rescaling process that reconfigures both production systems and the welfare state.

The European Union (EU) was among the first to institutionalise this paradigm. It treats sustainable development as a foundation for social cohesion, regional equality, and economic resilience rather than merely an environmental goal. Through initiatives such as the *European Green Deal*, the *Just Transition Mechanism*, and the *European Pillar of Social Rights*, the EU seeks to align social rights, environmental protection, and economic governance within a multi-level framework.

In Türkiye, the discourse is firmly embedded in official planning, yet practice remains growth-oriented and assistance-based. Expanding social assistance has eased poverty but has not produced a rights-based institutional structure. Sustainable development thus functions more as a compensatory mechanism for the social costs of economic growth than as a framework for social justice.

This study adopts a comparative perspective to analyse how the sustainable development paradigm has influenced welfare state transformation in the EU and Türkiye, arguing that the EU has institutionalised a rights-based, multi-level model of social regulation, while Türkiye follows an assistance-centred trajectory.

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CONCEPTUAL AND THEORETICAL FRAMEWORK

The concept of sustainable development emerged in the late twentieth century as a holistic paradigm linking the environment, economy, and social welfare. Originating from the *Brundtland Report (Our Common Future)*, it is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations, 1987, p. 27). This definition connected the limits of economic growth with environmental and intergenerational responsibility, embedding social justice into the notion of development.

Sustainable development rests on several normative principles: safeguarding the prospects of future generations, recognising the finiteness of natural resources, and integrating environmental, economic, and social progress. These principles recast development as a measure of both economic performance and social–environmental sustainability (United Nations, 1987). Consequently, indicators such as poverty reduction, education, employment quality, and emissions reduction became central welfare criteria.

Kenig-Witkowska (2017, pp. 64–68) observes that the Lisbon Treaty elevated sustainable development to a binding objective in EU law, granting it equal status with economic and social policy. This integrative standard now encompasses solidarity, equality, and employment. Similarly, Aşkar Karakır and Kaya (2025, pp. 2–4) interpret the *European Green Deal* (2019) as a vehicle for diffusing new norms – social justice, energy poverty, and digital transformation – turning sustainability into a source of legitimacy for the EU.

The social dimension reinforces cohesion and inclusiveness. Kahya (2023, pp. 2–3) defines social sustainability as an institutional framework that promotes equality, participation, and cultural diversity. In this context, social policy concerns not only welfare redistribution but the fair governance of environmental and economic transitions.

The welfare state historically emerged to mitigate industrial-era risks, yet globalization and neoliberal restructuring since the 1970s have challenged its fiscal and social viability. Esping-Andersen (1990; 1999) classified welfare regimes – liberal, conservative, and social democratic – highlighting shifting functions under new social risks. Bonoli and Natali (2012) further link post-crisis welfare reforms to sustainability and economic resilience, redefining the state as a regulator of environmental and technological change as well as income distribution.

Rescaling is crucial to understanding this shift. It denotes the reorganisation of social policy and governance across global, regional, and local levels (Brenner, 2004), altering both state functions and the scope of social rights. From a regulationist perspective, sustainable development represents a new mode of regulation shaped by the recognition of ecological limits and the need to balance markets with public policy (Boyer, 2022).

In the EU, this transformation manifests through policies on just transition, green employment, and digital inclusion. In Türkiye, by contrast, sustainable development reflects a growth- and assistance-oriented regulation model (Aşıcı & Acar, 2022, pp. 4–6). Thus, while the EU integrates sustainability with rights-based institutionalisation, Türkiye’s approach substitutes expanding social assistance for the consolidation of social rights.

HISTORICAL BACKGROUND

The global recognition of sustainable development as a policy paradigm dates to the *Brundtland Report* (United Nations 1987), which redefined development as a balance between economic growth, environmental limits and social justice. The 1992 Rio Summit institutionalised this vision through the *Rio Declaration* and *Agenda 21*, establishing multi-stakeholder governance involving governments, local authorities, the private sector and civil society (Kenig-Witkowska 2017, p. 64).

Within the European Union (EU), sustainability gained legal and institutional status from the *Maastricht Treaty* (1992) and the *Amsterdam Treaty* (1997), which defined “balanced and sustainable development” as a Union objective (Kenig-Witkowska 2017, p. 66). The *EU Sustainable Development Strategy* (2001, renewed in 2006) expanded the Lisbon Strategy’s growth agenda to include social inclusion, climate action and resource efficiency (European Commission 2023). Eurostat’s indicators subsequently monitored member-state performance, embedding sustainability within the EU’s macroeconomic and social governance. The *Lisbon Treaty* reaffirmed this commitment, linking full employment, social progress and environmental protection (Kenig-Witkowska 2017, pp. 70–72).

After the UN’s *2030 Agenda* (2015), the EU integrated the Sustainable Development Goals (SDGs) into internal and external policies through coordination mechanisms defined in 2016 (European Commission 2023). The *European Green Deal* (2019) placed sustainability at the heart of the Union’s new growth model, aiming for climate neutrality by 2050 and establishing the *Just Transition Mechanism* to offset social costs (Bartosiewicz et al. 2025, pp. 40–48). Thus, sustainable development evolved into an eco-social framework linking environmental transition with social justice. Despite progress, SDSN (2024, pp. 2–4) data show persistent disparities between Northern–Western and Southern–Eastern member states.

In Türkiye, sustainable development entered policy following the *Rio Summit* and appeared in the *Seventh Five-Year Development Plan* (1996–2000). Under the *Millennium Development Goals* framework, Türkiye achieved notable gains in poverty reduction, education and health (Ministry of Development 2016, pp. 9–10). The *Tenth Development Plan* (2014–2018) and the creation of the *High Council for Sustainable Development* (2013) strengthened institutional coordination (Ministry of Development 2016, pp. 14–25).

The *2030 Agenda First Steps Report* (2016) and *Voluntary National Review* (2019) aligned national priorities with the SDGs and reaffirmed the principle of “leaving no one behind” (Turkey’s SDGs 2019, pp. 17–22). Policy coordination later shifted to the *Presidency of Strategy and Budget*, which prepared the 2019 and 2023 VNRs. Türkiye’s 2021 *Green Deal Action Plan*, *Paris Agreement* ratification and 2053 *net-zero* target reflected growing convergence with EU and global frameworks (Aşıcı & Acar 2022, pp. 73–81).

However, SDSN (2024, pp. 26–28) reports continuing structural challenges – particularly in gender equality, income distribution and environmental quality. Despite progress in planning and rhetoric, economic-growth priorities and the weak institutionalisation of social rights sustain imbalances between the environmental and social pillars of sustainability.

SUSTAINABLE DEVELOPMENT IN THE EUROPEAN UNION

The EU has implemented sustainable development both as a normative principle and through concrete policy frameworks. The *Treaty on European Union* defines the Union's objective as "the sustainable development of Europe," emphasising balanced growth, a competitive social market economy, social progress and high environmental protection. Article 37 of the *Charter of Fundamental Rights of the European Union* further embeds this obligation, making sustainability a legally binding principle rather than an aspirational goal.

Since the 2000s, the EU has aligned economic and social policy with environmental sustainability. The *Europe 2020 Strategy* – focused on "smart, sustainable and inclusive growth" – set targets for renewable energy, emissions reduction, energy efficiency, employment and poverty reduction (European Commission 2010). Sustainability thus became an integral part of the Union's macroeconomic governance.

Inclusive governance and multi-stakeholder participation are core to the EU model. The *European Economic and Social Committee (EESC)* maintains that "there can be no Green Deal without a Social Deal," advocating the integration of climate and social policy. Financial instruments such as the *Just Transition Fund* and *Social Climate Fund* embody this principle: the former supports workers and regions in carbon-intensive sectors through re-training and job creation, while the latter mitigates household energy costs via efficiency subsidies and clean transport access. These mechanisms demonstrate the EU's effort to merge climate action with social protection. The *European Environment Agency* (2024) highlights that the justice dimension – embedding employment, education and social goals – is critical to a fair transition.

Promoting green jobs and skills is another pillar of EU sustainability policy. The EU views green and digital transitions as dual drivers of competitiveness. Initiatives like the *European Employment Strategy* and *European Skills Agenda* aim to prepare the workforce for a low-carbon economy, while the *Digital Compass 2030* and *European Pillar of Social Rights* define access to essential services, including energy and digital communication, as fundamental rights (Eurostat 2021; European Pillar of Social Rights 2017).

The EU also exerts *normative power* globally by diffusing sustainability norms to candidate and neighbouring countries (Manners 2002). Candidate states are required to harmonise environmental law with the *EU acquis*. In EU–Türkiye relations, this influence is reflected in Türkiye's ratification of the *Paris Agreement* and adoption of the *Green Deal Action Plan*, illustrating how the EU's multi-scalar governance combines internal integration with external convergence (Aşkar Karakır & Kaya 2025, pp. 167–175).

Despite significant progress, structural disparities persist. While greenhouse gas emissions have dropped by over 20% since 1990, agriculture and transport lag behind, and inequalities remain pronounced in Southern and Eastern Europe (Bartosiewicz et al. 2025). Yet an expanding awareness of social justice and multi-level participation indicates a shift toward a more inclusive and cohesive sustainability model within the EU.

SUSTAINABLE DEVELOPMENT IN TÜRKİYE

The discourse on sustainable development entered Türkiye's national planning in the mid-1990s and evolved into a more integrated framework in the 2000s, linking environmental goals with growth and social inclusion. The *Seventh Five-Year Development Plan* (1996) introduced the concept into policy, while later plans positioned sustainability at the intersection of economic and environmental management. Following the *2030 Agenda*, national planning increasingly adopted a holistic approach (Ministry of Development 2016, pp. 9–10, 14–25).

The *First Steps Report on Türkiye's 2030 Agenda* (2016) identified three pillars for integrating the Sustainable Development Goals (SDGs): policy coherence, monitoring capacity, and stakeholder participation. The *Voluntary National Review* (2019) adopted the principle of “leaving no one behind” as the core of the *Eleventh Development Plan*, reflecting the growing relevance of sustainability in policy (Presidency of Strategy and Budget 2019, pp. 17–22).

Unlike the EU – where sustainability is legally embedded – Türkiye's framework remains largely strategic and fragmented (Kenig-Witkowska 2017, pp. 66–68). While environmental and climate objectives have gained visibility, coordination with social policy is mainly project-based (Presidency of Strategy and Budget 2019, pp. 20–22).

Rapid growth in the 2000s strengthened the economic dimension of sustainability. Large infrastructure investments boosted GDP but sidelined environmental priorities. Türkiye's economy has yet to decouple growth from emissions: carbon output tripled between 1990 and 2015, and fossil fuels still dominate the energy mix (Aşıcı & Acar 2022, pp. 4–6). Ratifying the *Paris Agreement* in 2021 and declaring a 2053 net-zero target mark progress, but achieving them requires stronger coordination across energy, industry, and social policy (European Commission 2023, pp. 38–45).

Socially, sustainability has focused on poverty reduction. Expanding assistance in education, health, and fuel support has alleviated poverty, with spending rising from 0.5% to 1.15% of GDP (Presidency of Strategy and Budget 2019, pp. 17–20). Yet, as Esping-Andersen (1999) and Bonoli & Natali (2012) argue, assistance-based expansion has not produced rights-based institutionalisation. Universal mechanisms in education, housing, and income redistribution remain weak, and the right to housing lacks a solid institutional base.

Labour-market outcomes also show imbalance: rising low-wage work and a shrinking labour share have deepened working poverty. Active labour-market and green-skills programmes are loosely connected to broader green and digital transitions (Aşıcı & Acar 2022, pp. 4–6). Türkiye's energy transition, shaped by competitiveness and security concerns, reflects what Aşıcı and Acar call a “triangle of growth, energy dependency, and environmental sensitivity.”

Energy poverty, influenced by housing quality and income disparities, is mainly addressed through short-term subsidies. Unlike the EU, Türkiye lacks enduring mechanisms to link energy efficiency with social policy (SDSN 2024, p. 26). According to *SDSN* (2024, pp. 2–4, 26), Türkiye has progressed in infrastructure, health, and education but faces persistent challenges in equality, climate action, and institutional coherence.

Overall, sustainable development in Türkiye remains embedded in planning but dominated by an economic-growth orientation. Social policies have expanded through

assistance, while the connection between social and environmental dimensions is weak. A stronger rights-based approach would enhance Türkiye's social resilience and its alignment with the EU's normative sustainability framework.

COMPARATIVE ASSESSMENT

A comparison of sustainable development policies in the European Union (EU) and Türkiye reveals two distinct welfare state models differing in institutional depth, governance scale, and the normative status of social rights. The EU has institutionalised sustainable development within a legally binding, multi-level framework, while Türkiye addresses it mainly through strategic plans centred on growth and social assistance (Kenig-Witkowska 2017, pp. 65–68; Ministry of Development 2016, pp. 14–25; Presidency of Strategy and Budget 2019, pp. 17–22).

In the EU, sustainability is embedded in founding treaties and coordinated across environmental, energy, employment, and social policies. The *Lisbon Treaty* and *European Pillar of Social Rights* link it to social justice and employment quality (European Commission 2023, pp. 12–18). In Türkiye, despite frequent references to the SDGs, sustainability remains administrative rather than legal, with weak cross-sectoral coordination.

This divergence reflects differences in institutional density. As Boyer (1990) argues, the stability of any mode of regulation depends on the institutional link between accumulation and social consent. The EU integrates economic, environmental, and social dimensions in a coherent “green-social” regulation mode, while Türkiye's model remains fragmented and growth-driven.

The EU aligns sustainability with the *social investment state* paradigm (Bonoli & Natali 2012, pp. 5–9). Through the *European Pillar of Social Rights*, twenty principles secure fair wages, lifelong learning, social protection, and access to energy (European Commission 2023, pp. 18–20). Türkiye's welfare expansion, by contrast, relies on assistance programmes that manage poverty without establishing durable rights – similar to Esping-Andersen's (1999) targeted welfare regimes.

The *European Green Deal* and *Just Transition Mechanism* exemplify the EU's integration of social and environmental goals through regional and labour-market funding (SDSN 2024, pp. 2–4, 26). Energy poverty is treated as a social right, addressed via efficiency investments and social tariffs (European Commission 2023, pp. 40–43). Türkiye's approach remains reactive, focused on short-term subsidies rather than structural reforms (Aşıcı & Acar 2022, pp. 4–6).

While the EU's *Green Skills Agenda* institutionalises skill transformation, Türkiye's initiatives remain project-based and externally financed (Presidency of Strategy and Budget 2019, pp. 20–22). Likewise, the EU's *European Semester* fosters multi-level governance and civic participation (Silander 2022, pp. 77–80), whereas Türkiye's centralised system limits local and societal engagement, making sustainability policies vulnerable to political shifts.

Table 1. Comparative Overview of Sustainable Development Approaches in the EU and Türkiye

Dimension	European Union	Türkiye
Institutional Structure	Legally binding, multi-level governance integrating EU institutions and local actors	Centralised planning with limited coordination
Normative Status	Integration principle secured by treaties	Strategic framework, weak legal enforceability
Social Rights	Rights-based welfare model under <i>European Pillar of Social Rights</i>	Assistance-based protection, weak institutionalisation
Just Transition & Energy Poverty	Funds supporting regional convergence and efficiency	Short-term subsidies, limited efficiency measures
Green Jobs & Skills Strategy	<i>Green Skills Agenda</i> and digital transition policies	Project-based transformation, no national strategy
Governance Scale	Multi-actor, participatory, and transparent	Centralized with consultative-level participation
Mode of Regulation	Rights-based, social–environmental integration	Growth-oriented, assistance-based legitimacy
Model of Sustainability	Green–social compromise (normative power)	Neoliberal transition compatible with social assistance

Source: Developed by the author drawing on the relevant literature.

Viewed through regulation theory, the EU and Türkiye represent distinct social compromises. The EU institutionalises a rights-based mode of regulation uniting environmental transition with social justice. Türkiye adopts sustainability as a pragmatic strategy balancing growth and welfare. Both aim to strengthen resilience to crises such as the pandemic and energy shocks, but while the EU frames sustainability as a *new social contract* (Silander 2022, p. 80), Türkiye continues to treat it as an adaptive welfare mechanism. The key challenge for Türkiye is to shift from assistance-based welfare toward a rights-based social investment model.

CONCLUSION

This study demonstrates that the sustainable development paradigm has shaped the welfare state in the European Union (EU) and Türkiye through distinct paths. The divergence arises from differences in normative orientation and institutional capacity. The EU has embedded sustainability within a legally binding, multi-level, and rights-based framework, whereas Türkiye follows a growth- and assistance-oriented model defined by strategic planning rather than law.

The EU experience shows that sustainability functions as a social contract grounded in solidarity, equality, and intergenerational justice. Policies such as the *European Green Deal* and *Just Transition Mechanism* exemplify a rights-based social investment state by linking environmental transition with social justice and employment. In Türkiye, sustainability

remains administrative and project-based: expanded social assistance reduces poverty but has not evolved into rights-based institutionalisation.

Institutionally, the EU operates through participatory and data-driven governance, while Türkiye's centralised structure and limited civic engagement weaken policy continuity.

Three main lessons emerge. First, sustainable development relies on strong institutions and multi-level governance. Second, social rights are essential for a durable green transition. Third, sustainability should be viewed as an opportunity for long-term resilience rather than a cost.

In both contexts, sustainable development serves as a framework for rescaling the welfare state. The EU has realised it both normatively and practically; for Türkiye, it remains a pathway to align growth with a rights-based social investment strategy suited to twenty-first-century challenges.

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ECONOMIC CHALLENGES TO EU INTEGRATION OF THE WESTERN BALKANS COUNTRIES: TRADE BARRIERS, STRUCTURAL WEAKNESSES AND POLICY MISALIGNMENTS

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Abstract

The integration of the Western Balkans into the European Union remains constrained by persistent economic and institutional challenges. This paper analyses trade barriers, structural weaknesses, and policy misalignments as main factors that hinder the region's convergence with the EU. Drawing on existing scientific literature and European institutions reports, the study identifies non-tariff barriers, weak institutional capacity, and low FDI as critical obstacles. It considers EU instruments such as IPA III and the Economic and Investment Plan in addressing these issues. Policy recommendations highlight regulatory convergence, improved governance, and strengthened regional cooperation to foster sustainable integration.

Keywords: European integration, Western Balkans, Trade barriers, Economic convergence, EU enlargement

JEL classification: F15, O52, P33, F13, H77

INTRODUCTION

The Western Balkans (Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia) have been a European Union enlargement priority, but their full integration is compromised by economic issues as well as political instability (Nikolić, 2020). In spite of a number of actions to facilitate closer ties, constant trade restrictions and the structural inadequacies of the economies, as well as divergences between policies, stand in the countries' way to full European integration (Lazarov and Mitev-Kacarski, 2023). This is particularly the case with the slow unification of a regional market and the consistent dependence on foreign economic aid rather than strong domestic growth (Sklias and Τσάμπρα, 2013). In this paper, the diverse socioeconomic challenges are examined, as well as long-lasting structural weaknesses, and policy mismatches that slow down the integration process. The paper also assesses the extent to which existing EU instruments, including the Economic and Investment Plan and IPA III, are effective in addressing these challenges in the way they contribute to regulatory convergence and institutional transformation. The policy recommendations encourage more economic resilience, more efficient compliance with EU regulation, and institutional reforms, which would make the integration process in the EU more inclusive and sustainable.

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LITERATURE REVIEW

Studies on Western Balkans' pathway to EU membership frequently emphasize the transformational role of Stabilization and Association Agreements, which have been instrumental for FDI inflows from the EU, as well as for exports towards the Union (Grieveson, 2020; Holzner & Vukšić, 2020). These agreements, together with other instruments such as the Pan-European Cumulation System, have supported integration into the Common Market by facilitating a move to common rules of origin, and regional cumulation, which has provided impetus for forward market access and integration of Central Eastern European industries into EU-wide value chains (Kügler et al., 2022). In addition, further EU enlargement towards Central and Eastern European countries, while deepening integration on the whole, has also unpacked a less than vertically deepened EU in terms of its dimensions (Sørensen and Cappelletti, 2023), evidencing the complexity of reconciling widening with deepening processes across the Union. The notion of Europeanization thus is crucial in interpreting how the EU shapes national policies, among others, through modifying domestic opportunity structures and framing beliefs and expectations (Stanek and Wach, 2015). This is often associated with substantial institutional reforms and capacity building within the candidate countries, intending to bring their administrative structures and legal systems into compliance with the *acquis communautaire* (Sørensen and Cappelletti, 2023; Heidbreder, 2014). This reform is important in order to tackle the ongoing problems of corruption and weak rule of law that hinder further EU integration of Western Balkan countries (Hogić, 2024). Harmonization of national legislation with the EU *acquis* and establishment of effective national competition authorities is therefore crucial for promoting market competitiveness in the Western Balkans, but progress has been painfully slow (Tota and Hasanpapaj, 2021).

Moreover, the activist character of EU trade policy, by means of a strategic move away from multilateral negotiations towards bilateral agreements with key partners (due to disappointments in being able to negotiate successfully at multilateral level), reflects the notion of soft integration that places greater emphasis on trade deepening agendas than on broad membership for certain regions (Leblond and Viju-Miljusevic, 2019). Nevertheless, the Western Balkans continue to encounter considerable challenges, despite the many approaches towards it, different levels of engagement in reform, and an unpredictable and politicized process of integration where the effectiveness of EU conditionality is difficult to evaluate ex-post (Stanek and Wach, 2015). Such uncertainty about conditionality for enlargement might strengthen the EU's leverage in negotiations but also weaken it by spreading influence over institutional and policy choices of candidates (Grabbe, 2002).

ECONOMIC INCENTIVES AND BARRIERS TO EU INTEGRATION

The Western Balkans countries have a strong interest in the EU integration as it can be considered a way to gain economic security, access to new trade opportunities, and more importantly, adopt wise policies for economic growth (Stanek and Wach, 2015). This could enhance the member-states trading volume and reduce the distance effect between traders,

promoting economic development and reducing dependency on foreign aid (Nori & Mishra, 2021).

Moreover, membership of the EU offers a strong legal and institutional backcloth which supports democratic governance and the rule of law, these being key factors in promoting FDI and stimulating sustainable economic growth in the Western Balkans (Stanek & Wach, 2015). This kind of convergence is instrumental in promoting trade and will allow government officials to develop effective export strategies and policies for export development (Lazarov & Miteva-Kacarski, 2023). This corresponds with the overall aim of advancing a closer integration that requires the elimination of national regulatory obstacles which presently do not allow the common market to operate efficiently (Stanek and Wach, 2015).

Nevertheless, the economic and institutional barriers that have been preventing these conjugated benefits to fully materialize remain, which requires extensive overhauls in order to meet the EU's criterion of operating effectively within the single market. Modifications to agricultural policy, for example, are essential for the improvement of competitiveness in the agri-food products (especially in the EU negotiation process) (Matkovski et al., 2021). This also means tackling problems such as dual quality of food products that is common in certain Central and Eastern European markets and which could be an opportunity for Western Balkan companies to gain trust and market share through the provision of high-quality products (Matkovski et al., 2021). At the same time, inadequate physical infrastructure for market penetration, weak cooperation among producers, and underdeveloped agri-food supply chains amplify the competitive disadvantages of the region within the general European market as well (Matkovski et al., 2021).

Not less important, obstacles to EU integration also derive from regulatory and administrative divergences among countries in the Western Balkans that require complex harmonization efforts to comply with *acquis communautaire* standards (Leblond & Viju-Miljusevic, 2019). These discrepancies are often the result of an ineffective transposition and application of EU directives, which results in market fragmentation and higher transaction costs for economic agents (Stanek & Wach, 2015). In addition, imperfect or asymmetric information, bad governance, and bottlenecks due to lack of coordination among regulatory authorities result in non-transparent and complex trade regulations which constitute considerable Non-Tariff Barriers (NTB), further diminishing integration attempts (Arslan et al., 2018).

Not only do such regulations discourage FDI, but they also create restrictions to the free trade of goods and services that reduce much of the potential economic gains, thus diminishing the economic benefits that could otherwise accrue from closer alignment with the EU single market (Arslan et al., 2018). Thus, while lifting entry barriers brings benefits for foreign exporters and investors, there are also downsides because not every firm is ready to face international competition immediately (Stanek and Wach, 2015). In addition, a stable institutional system and innovation-driven motivation are significant to support these countries to enhance value-added chains together with outward FDI by which they can acquire market shares (Arslan et al., 2018).

Moreover, inward FDI is restricted in areas such as infrastructure and finance, with stiff control and approval procedures further bottlenecking market entry and competition for these countries (Hunya and Stöllinger, 2009). These barriers are combined with the absence

of a clear-cut definition of 'unjustified or disproportionate barriers' in the EU legislative process, which allows Member States to interpret and pick obstacles for removal from the internal market (Stanek and Wach, 2015). As a result, this ambiguity leads to an extremely complicated regulatory environment that deters foreign investment due to concerns regarding inconsistent rule enforcement and possible bureaucratic setbacks ("The future of European competitiveness," 2024).

This is exacerbated by the fact that there is a temptation for RTA members to deviate from treaties to protect their domestic industries, particularly where direct enforcement proves problematic and thus causing a gap between legal obligations and actual practice (Kügler et al. 2022). In addition, the systemic nature of deep regional trade agreements and their effect on a wide range of policy domains require strong national institutions that have the capacity for converting these agreements into enforceable domestic legal norms to ensure compliance and integration (Kügler et al. 2022).

TRADE-RELATED BARRIERS BETWEEN EU AND WESTERN BALKANS COUNTRIES

The EU's trade policy has become increasingly politicized, with an emphasis on balancing obstacle-free trade with the "right to regulate" to address public concerns and legitimize free trade (Leblond and Viju-Miljusevic, 2019). A part of this politicization comes from the perception that trade agreements might affect domestic regulatory autonomy or social values (Leblond and Viju-Miljusevic, 2019). This tension is especially relevant in the Western Balkans, where transposing the EU *acquis communautaire* can require far-reaching changes to national regulatory systems, which run the risk of cutting into sovereign policymaking and causing domestic resistance. In addition, the scope of modern trade agreements and globalization has increased the interest and public debate on EU trade policy (Leblond & Viju-Miljusevic, 2019). This increased public awareness further requires that a balanced and transparent way should be taken in negotiations, especially with respect to clauses related to sensitive areas such as environmental conservation, labor policies, or consumer safety (Leblond and Viju-Miljusevic, 2019).

Tariff vs. non-tariff barriers

The difference between tariff and non-tariff barriers is important to interpret trade relations with the Western Balkans since the latter ones often refer to a more difficult and enduring obstacle on its path of integration (Baldwin et al., 2023) (Nori and Mishra, 2021). Tariffs have broadly been falling with trade liberalization, but suboptimal rule of origin provisions, non-tariff measures (NTMs) such as technical barriers to trade (TBT), sanitary and phytosanitary (SPS) measures, and cumbersome customs procedures continue to impede the free flow of goods and services (Baldwin et al., 2023).

This focus on non-tariff barriers illustrates how trade policy has been diversifying to address regulatory divergences and "beyond-the-border" issues, which often create frictions at the international level because domestic 'regulatory liabilities' take subnational jurisdictions to request an exemption or a lag in implementing expensive measures (Leblond

and Viju-Miljusevic, 2019) (Egan and Guimarães, 2022). These complexities highlight the difficulties in integrating the Western Balkans with the EU single market, where regulatory convergence and state capacity are key to addressing such non-tariff barriers (Nilsson and Matsson, 2009). Therefore, emphasis on NTBs and regulatory convergence is necessary and is increasingly perceived as a major obstacle in progression towards accession for the Western Balkan countries (Daugbjerg et al., 2018).

Customs procedures and regulatory misalignments

In the context of EU-Western Balkans relations, complex customs procedures and regulatory misalignments represent significant impediments to trade integration, often acting as de facto non-tariff barriers that disproportionately affect smaller economies (Daugbjerg et al., 2018). These barriers frequently take the form of lengthy border controls, cumbersome (administrative) procedures, and different technical standards that raise the transaction costs for companies doing business in the Western Balkans, which become less competitive (Ruckteschler et al. 2021).

In addition, differences in sectoral regulation and requirements for new rules, standards, and certificates constitute serious obstacles also for EU companies, similar to those faced by their Western Balkan partners. Such variations can hamper the integration of supply chains, limit the free flow of products and ultimately slow economic growth, for which harmonized regulatory regimes and simplified customs procedures are required to fully encourage regional trade expansion (Arslan et al., 2018). Facilitating and downsizing border and documentary compliance (e.g., electronic submission of customs information) would greatly increase trade efficiency (Arslan et al., 2018).

Export diversification and competitiveness challenges

A major barrier for export diversification and expansion of competitiveness in the Western Balkans relates to various trade barriers (Daugbjerg et al., 2018), which encompass customs duties, strict sanitary and phytosanitary rules, or complicated authorization processes – much more difficult than international standards or not applicable for exporting environmental requirements. Taken all together, the additional non-tariff measures increase the cost of trade and discourage an export-driven growth model and participation in global value chains (Daugbjerg et al., 2018).

Second, the narrow base of export products, which are typically concentrated in low value-added segments, adds to the vulnerability to foreign shocks and restricts options for sustainable economic expansion (Arslan et al., 2018). Second, despite a significant expansion of services trade, and so for the most resilient during the COVID-19 crisis (Ndikumana et al., 2020), regulatory barriers, and in particular restrictions, remain an important obstacle as shown by some trade restrictiveness indices (Arslan et al., 2018) (Baldwin et al., 2023).

Moreover, ongoing difficulties in achieving full economic convergence with the EU call for continued emphasis on institutional reforms and capacity building in Western Balkan countries to implement and enforce harmonized regulation. This is important to counter the trade-restrictive effects of disparate regulatory levels, in particular in the services sector, where differences matter much for trade costs (Baiker et al., 2021) (Campos et al., 2023).

STRUCTURAL WEAKNESSES IN THE ECONOMIES

Low levels of FDI and capital inflows

A significant challenge for the Western Balkan economies is the persistently low level of Foreign Direct Investment (FDI) and capital inflows, which is crucial for economic development and integration into global value chains (PAUL, 2021). This shortage is mainly due to the assumed political instability, segmented capital markets, and underdeveloped institutional base, which significantly discourage potential foreign investors (“The future of European competitiveness,” 2024). On the one hand, scarce FDI activity also reduces potential for additional investment and employment, which is likely to limit economic diversification and modernization (Hunya, Stöllinger 2009). This lack of foreign capital depresses resources domestically that would provide access to leading-edge technologies and management experience, which lead to productive and innovative activities (Arslan et al., 2018). Furthermore, high-quality institutions and favorable macroeconomic situations tend to be a magnet for FDI; however, the Western Balkans are unable to compete with other more dynamic economies and stable regions in attracting this crucial investment flow (Arslan et al., 2018) (“The future of European competitiveness,” 2024). Furthermore, inadequate political and economic integration within the region has inadvertently led to increased Russian and Chinese influence, as these external powers often offer political support in exchange for economic concessions, further complicating the region's path toward EU integration and FDI attraction (Hogić, 2024). The delicate balance of these provisions implies a complex setting for the attraction of FDI, requiring comprehensive reforms that will increase transparency, reduce red tape, and guarantee equal treatment of all market players (Hunya and Stöllinger, 2009).

Weak institutional capacity and governance

Some of the issues that stem from weak institutional governance are connected to corruption, inefficient public administration, and lack of judiciary independence, representing a bundle which interferes negatively in investors' confidence and does not let long-term investment develop (Sucubasi et al., 2021) (Lubeniqi, 2023). Such systemic weaknesses can influence the inefficient use of resources, as well as impair market functioning, which has an impact on sustainable economic growth and development (Hogić, 2024). Moreover, a lack of viable projects due to barriers to innovation and firm growth further limits the demand for financing within the region, even when capital is available.

Labor market challenges and skills mismatch

The Western Balkan region is facing challenging labor market problems with high levels of unemployment, particularly among youth, and significant skill mismatches between employer demand and worker supply. This mismatch, in turn, hinders economic development and perpetuates social disparities, leading to a brain drain as skilled workers seek opportunities abroad (Lubeniqi, 2023). Solving this multi-faceted problem requires a focused educational reform, vocational training schemes, and policies that encourage the absorption of skilled labor force to retain immanent remittances and knowledge spillovers from the diaspora (Redžepagić et al., 2013). The quality of life, with strong health, education sectors, and social security, are critical factors influencing the decision of investors to locate in a

country and for retaining skilled labor (Domazet et al., 2024). Also, the emigration of qualified workforce leads to a lesser financialization of the economy as witnessed in some developing economies, which in turn affects investment dynamics in real sectors (Atashov et al., 2023). In addition, the weaknesses in the labor market are reinforced by underdeveloped financial markets that are less effective at creating capital and allocating resources to productive firms (Heider and Duca 2008). All these challenges combined imply lower competitiveness and reduce the ability of the Western Balkan economies to benefit from their potential for integration into the European single market and global value chains (Stanek and Wach, 2015). The widespread skill shortages and mismatches, caused by the fast-paced economic restructuring and the mismatch between educational outputs and labor market demands, are major obstacles that detrimentally affect productivity and innovative activities throughout these states (Kupets, 2015) (Brunello & Wruuck, 2019).

Infrastructure and connectivity gaps

The inadequate development of infrastructure, including transportation networks, digital connectivity, and energy systems, further hinders economic progress and integration within the Western Balkans, limiting market access and increasing operational costs for businesses.

These shortcomings act not only as barriers to foreign direct investment but also limit the competitiveness of local industries by increasing logistics costs and impeding the efficient movement of goods, services, and information (Baldwin et al., 2023). Furthermore, the digital divide in internet access and ICT literacy also widens regional disparities and hinders participation in the global digital economy. On European level, the inefficiency of Europe's public financing of investment combined with rigid industry structures leads to underinvestment in new technology and infrastructure, resulting in a competitiveness handicap ("The future of European competitiveness," 2024). Such flaws are compounded with disaggregated national systems, and the complexity and high cost of intellectual property rights, leading to disincentives for innovation and commercialization of research results ("The future of European competitiveness," 2024). Lazarov and Miteva-Kacarski (2023) further note that weak intraregional trade among the Western Balkan countries is preventing economies of scale.

POLICY MISALIGNMENTS WITH THE EU

Implementation of Stabilisation and Association Agreements

Despite the framework provided by the Stabilisation and Association Agreements, their full implementation remains challenged by issues such as insufficient political will and persistent bilateral disputes, hindering deeper regional economic integration and alignment with EU standards (Bregu, 2023). This partial compliance with the agreed framework often makes it impossible for investors to predict and avoid the sort of regulatory divergence and distortion that will raise transaction costs and therefore reduce the attractiveness of this region to foreign investors (Stanek and Wach, 2015). As a result, the Europeanization of policies and regulations meant to generate convergence on an ever larger scale often

establishes standards irrespective of whether they fit in with existing industrial structures or competitive opportunities, generating inefficient policies and economic decline (Stanek, 2015; Wach, 2015). Furthermore, the harmonization with the EU in some areas such as agriculture has been lagging behind, and the support schemes are lacking compliance with the standards of the European Union, thus hampering competitiveness (Matkovski et al., 2021). This lack of alignment is frequently attributed to the failure of legislation and regulation, as well as underdevelopment of common standards in the region (Skouby et al., 2020).

Effectiveness of CEFTA and regional cooperation

Despite its potential, the Central European Free Trade Agreement and other regional cooperation propositions in the Western Balkans have been hampered by persistent political instability and mutual mistrust at the member-state level, often reducing them to mere political agreements without substantive economic impact (Bregu, 2023). This situation is further exacerbated by the continued reliance on non-tariff barriers and protectionist measures by some member states, which undermine the principles of free trade and hinder regional economic integration (Arslan et al., 2018) (Leblond and Viju-Miljusevic, 2019).

Misalignments in standards, regulations, and rule of law

The persistent disparities in legal systems among Western Balkans countries as well as the problems with regard to rule of law represent major impediments for economic integration and a deterrent of foreign direct investment by raising uncertainty and compliance costs (Matkovski et al., 2021; Komolov, 2021). Such regulatory heterogeneity not only impedes cross-border trade and investment, but it can also create conditions that enable informal practices and corruption to thrive, undermining investor confidence and hampering sustainable economic development (Leblond and Viju-Miljusevic, 2019).

These structural and regulatory impediments are compounded by the lack of complete harmonization of competition policy and state aid regulation throughout the region, which distorts market dynamics and inhibits the development of a truly competitive single market akin to that operating in the EU (Hogić, 2024). In addition, the double quality of products in the EU market leaves an opening for companies from Western Balkan countries to access niche markets in Central and Eastern Europe by supplying better quality agri-food products (Matkovski et al., 2021).

Tackling these multifaceted issues requires a package of measures that would promote social inclusion, economic development, and the rule of law through institutional reforms and transparent governance, together with regional cooperation in accordance with EU acquis to drive sustainable economic growth (Hogić, 2024).

Assessment of EU instruments: Economic and Investment Plan, IPA III

The Economic and Investment Plan for the Western Balkans, together with the Instrument for Pre-accession Assistance, is a key mechanism in support of the transformative changes, which will increase the region's convergence with European Union standards and stimulate sustainable development. Such tools are crucial for mobilizing both financial resources and technical know-how in order to deal with existing structural obstacles in the

region, thus boosting its institutional capacities and economic robustness (Dimitrijević et al. 2023).

In particular, the Economic and Investment Plan has about €30 billion of investments through grants, guarantees, as well as concessional loans that cover mainly sustainable transport, energy, digital infrastructure, and green and digital transitions (Zupanič et al., 2021). Meanwhile, IPA III mobilization plays an important role in funding targeted support for EU *acquis* aligned reforms with a particular focus on good governance, rule of law, and socio-economic development, all aimed at preparing countries for future membership (Zupanic et al. 2021). These instruments' complementary strategic approach is followed to encourage regional integration, foster economic growth, and ensure long-term stability by promoting sustainable operations and institutional reforms in the region (Brankov, 2023).

POLICY RECOMMENDATIONS

In light of these pressing challenges, this section outlines policy recommendations that draw upon successful strategies, adapted to fit the specific capacities of Western Balkan nations.

A key policy recommendation involves fostering deeper regulatory convergence with the European Union. In the sector of agriculture and food, this alignment would help diversify production, markets, and thereby make local farmers and SMEs more resilient to external impacts as well as competitive in the international markets (Berkum, 2021). This harmonization might be able to improve trade efficiencies, food safety, as well as market access since the larger EU market can serve as an anchor for stabilizing food supply chains and for promoting agricultural innovation (Rudloff et al., 2024).

The harmonization of the regulatory framework in the Western Balkans with the EU legislation is critical for enhancing further integration into the European single market and improving overall economic and food system resilience (Rudloff et al., 2024). The agreement streamlines trade and safety standards and encourages investment, ultimately strengthening agricultural supply chains (Sundram, 2023). Additionally, such regulatory consistency across all economic sectors could facilitate international collaboration and strategic infrastructure development to embed the region into global supply chains (Awokuse et al., 2024).

Another policy recommendation is to strength the countries' economic resilience and FDI attraction. To facilitate these dynamics, measures should target the mitigation of dependency risks, diversification of supply sources, and inclusion of local producers in global value chains. This can be done by shifting the investment in innovation, advancing towards modern agricultural practices, and facilitating access to markets of products produced locally (Dokić, 2023). Finally, governments can also encourage resilience through policy measures (subsidies or tax reductions etc.) to incentivize firms to invest in resilience.

CONCLUSION

The Western Balkans' path toward EU integration is shaped by a complex interplay of trade barriers, structural vulnerabilities, and institutional shortcomings that continue to slow convergence. Despite EU tools and regional efforts such as CEFTA or the “mini-Schengen” area idea, setting up a good potential for more cooperation, they still suffer from narrow implementation focus and political fragmentation. These challenges can only be addressed by leadership in regulatory reforms to encourage alignment with regulations, sustainable investment, and institutional capability. Solving these problems would help to strengthen the Western Balkans, encourage economic diversification, and bring the region nearer to a sustainable path of European integration.

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GLOBAL FINANCIAL SUSTAINABILITY: INTEGRATING ESG CRITERIA INTO CROSS-BORDER INVESTMENTS

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Abstract

This paper examines how ESG criteria (Environmental, Social, Governance) are reshaping cross-border investments and contributing to the emergence of global financial sustainability. In a context marked by geopolitical instability, climate pressures, and rising ethical expectations, ESG is evolving into a new language of capital – one that transcends return metrics and redefines the responsibilities of international investors. The analysis begins with the theoretical foundations of financial sustainability and ESG, addresses the challenges of standard harmonisation across jurisdictions, and moves toward practice through ten strategically selected case studies, including sovereign wealth funds, investments in emerging markets, and reporting technologies. Using a qualitative-comparative approach, the paper explores how ESG integration strengthens global financial sustainability and facilitates responsible cross-border investment, transforming capital from a purely economic instrument into a civic actor. The final section offers an ethical reflection: can profit be sustainable? Can capital act civically? The findings confirm the hypothesis that ESG is becoming the new grammar of global capital, connecting investors, institutions, and states around shared goals of sustainability, transparency, and accountability. ESG is thus presented not only as a financial tool, but as a form of global economic justice capable of recalibrating trust among markets, states, and citizens.

Keywords: financial sustainability, ethical investment, ESG criteria

JEL classification: F42, G11, G15, G18, Q56, M14

1. INTRODUCTION

In the post-pandemic era, marked by geopolitical instability, climate crises, and heightened ethical pressures, ESG criteria (Environmental, Social, Governance) are emerging as a new alphabet of global capital. No longer a mere appendix to financial analysis, ESG has become a strategic tool for redefining the responsibilities of international investors. Global transformations in climate, ethics, and governance have elevated ESG from a set of voluntary principles to a decisive factor in international investment strategies. In Central and Eastern Europe, ESG integration is shaped by post-transition dynamics, European policy frameworks, and global market pressures. Over the past two decades, ESG criteria have evolved from reputational indicators to core pillars of investment decision-making. Romania, as an EU member state and recipient of international funding, offers a relevant regional laboratory for analysing financial sustainability. The theoretical foundations of global financial sustainability and ESG lie at the intersection of economics, ethics, ecology, and governance,

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reflecting a paradigm shift in how value is understood in investment. This paper investigates how ESG transforms cross-border investment and contributes to global financial sustainability, focusing on theoretical foundations, regulatory challenges, case studies, and ethical implications.

The structure of the paper includes Introduction, ESG-Theoretical Framework, Methodology and Research Hypothesis, Literature Review, Applied Section with Ten Case Studies, Results and Discussion, Final Ethical Reflections, Conclusions, Future Research Directions, and References.

2. ESG: DEFINITION AND DIMENSIONS

The *ESG concept* – Environmental, Social, Governance – represents a framework for assessing the non-financial performance of companies, increasingly used in investment, strategic, and regulatory decision-making. ESG criteria were formally established in 2006 through the United Nations Principles for Responsible Investment (*United Nations, 2006*), a joint initiative of the *UNEP Finance Initiative and the UN Global Compact*. This marked the beginning of a new approach to corporate evaluation and the integration of ESG criteria into global investment strategies. ESG stands for three essential pillars in assessing corporate sustainability and responsibility: E (Environmental): impact on the environment (emissions, resource use, biodiversity); S (Social): relationships with employees and communities, respect for human rights; G (Governance): transparency, ethical leadership, anti-corruption practices.

These principles were designed to encourage institutional investors to incorporate ESG factors into their decisions, recognising that environmental, social, and governance issues can affect long-term financial performance. ESG is not merely a set of ethical guidelines, but a tool for evaluating long-term risks and opportunities. According to the Institute for Financial Studies (*Institute for Financial Studies, 2023*), ESG is integrated into investment analysis through the assessment of non-financial risks, alignment with regulatory frameworks (e.g., *MiFID II, SFDR*), and standardised reporting of ESG indicators. Thus, ESG is presented as an investment analysis framework that involves: (i) Evaluation of non-financial risks (environmental, social, reputational); (ii) Alignment with European regulations such as *MiFID II* and *SFDR*; (iii) Standardized reporting of ESG indicators, including relevant KPIs and ESG ratings; (iv) Impact on access to financing, including instruments such as green bonds.

3. METHODOLOGY AND RESEARCH HYPOTHESIS

As part of the methodological framework, this paper conducts a systematic review of the specialised literature, focusing on the integration of ESG (Environmental, Social, Governance) criteria into the extended concept of financial sustainability. This review enables the identification of key theoretical directions, comparative approaches, and epistemological gaps, contributing to the conceptual foundation of the research. The

integration of ESG criteria into the architecture of financial sustainability is explored through a rigorous analysis of relevant academic sources.

The study employs a qualitative-comparative approach, based on the analysis of ten strategically selected case studies designed to reflect the geographic, institutional, and thematic diversity of ESG integration in cross-border investments. The selected cases encompass a wide range of actors – sovereign wealth funds, commercial banks, SMEs, digital platforms, and public institutions; various levels of economic development – advanced economies (Norway, Japan, USA) and emerging markets (Indonesia, Kenya, Romania, China); diverse ESG instruments – green bonds, investment funds, sustainable loans, and reporting technologies; and distinct cultural and religious frameworks – including Islamic and European models.

Each case study is analysed across four dimensions: institutional context, ESG integration mechanisms, impact on cross-border investment, and ethical and systemic relevance. All data were sourced from official and publicly available sources.

This methodology allows for the formulation of robust and comparable conclusions regarding the role of ESG in recalibrating global financial sustainability.

The research hypothesis, formulated as an investigative premise to be tested, validated, or refuted through the analytical process, posits that ESG is emerging as a new grammar of global capital, capable of connecting investors, institutions, and states around shared objectives of sustainability, transparency, and responsibility.

4. INTEGRATING ESG CRITERIA INTO THE CONCEPT OF FINANCIAL SUSTAINABILITY – LITERATURE REVIEW

The integration of ESG criteria into financial sustainability has become a central topic in recent academic literature, approached through systematic analyses, conceptual models, and empirical studies. Scholars such as Elkington, Stiglitz, and Friede et al. define ESG as a triad of criteria that enable the assessment of non-financial risks and long-term impact, while financial sustainability is understood as encompassing stability, ecological resilience, and intergenerational equity (as further presented). At the local level, these concepts are mediated by institutional specificities and the maturity of financial markets.

From this perspective, a structured review of the academic literature relevant to the theme “Global Financial Sustainability: Integrating ESG Criteria into Cross-Border Investments” was conducted, organized along four major theoretical axes: (I) Financial Sustainability: Concepts and Paradigms; (II) ESG in Investment Theory; (III) Cross-Border Investment and ESG Standards Harmonization; (IV) Emerging Technologies and Investment Ethics.

4.1. Literature Review – I. Financial Sustainability: Concepts and Paradigms

John Elkington (1997), in his seminal work *'Cannibals with Forks: The Triple Bottom Line of 21st Century Business'*, introduces the concept of the *Triple Bottom Line (TBL)*, a foundational element of modern corporate sustainability. This publication is widely regarded as a turning point in managerial and investment thinking, marking the transition from one-dimensional profitability to an integrated approach encompassing economic, environmental, and social dimensions. The title *'Cannibals with Forks'* serves as a provocative metaphor: companies focused solely on profit are *'cannibals'*, while the *'forks'* symbolise the three pillars of sustainability – *People, Planet, Profit*.

Elkington proposes the *Triple Bottom Line* as an alternative to traditional financial accounting: Economic – financial performance and operational efficiency; Environmental – impact on the natural environment, resource use, emissions; Social – equity, employee rights, community relations.

TBL has since been incorporated into international standards such as *the Global Reporting Initiative (GRI)*, *ISO 26000*, and *the Sustainability Accounting Standards Board (SASB)*, and has influenced the development of ESG criteria and *European regulations on sustainability reporting* (e.g., *CSRD, SFDR*).

The Stiglitz-Sen-Fitoussi Report (2009), titled *Report by the Commission on the Measurement of Economic Performance and Social Progress*, represents a landmark critique of the exclusive use of GDP as an indicator of economic progress. The report argues that GDP fails to capture quality of life, social inequalities, ecological sustainability, or subjective well-being. GDP is a quantitative indicator, not a qualitative one: GDP growth can coexist with environmental degradation or social exclusion. The report proposes methodological innovations, including multidimensional measurements of progress (material well-being – income, consumption, wealth; health, education, environment, safety, civic participation), intergenerational sustainability indicators, and the integration of subjective metrics such as life perception and personal satisfaction. It has influenced the *OECD Better Life Index*, the *Sustainable Development Goals (SDGs)*, Eurostat reforms on well-being indicators, and has been widely cited in debates on financial sustainability, ESG, and post-crisis public policy.

Bani-Khaled, Azevedo, and Oliveira (2025) address financial sustainability indirectly by analysing the relationship between ESG factors and firm value – an essential pillar of financial sustainability in contemporary literature.

Cunha et al. (2025) similarly approach financial sustainability through the lens of ESG indicators and corporate performance – another key dimension in current academic discourse.

Zairis, G., Liargovas, P., and Apostolopoulos, N. (2024) offer a systematic review of the literature on sustainable finance and the role of ESG criteria. They identify methodological trends, research gaps, and future directions for strengthening financial sustainability, proposing a research agenda that links ESG to financial performance, corporate governance, and public policy.

The following table summarises the key conceptual paradigms relevant to the paper's theme, as identified in the academic literature.

Table 1. Conceptual Paradigms Relevant to the Paper’s Theme, as Identified in the Academic Literature

Paradigm	Description and Sources
ESG & Triple Bottom Line	Integration of environmental, social, and governance factors into financial performance assessment (<i>Elkington, 1997; Edmans & Kacperczyk, 2022</i>)
Financial Resilience	The capacity to withstand economic shocks and maintain functionality (<i>Stiglitz et al., 2009; Cunha et al., 2025</i>)
Long-Term Value	Correlation between ESG performance and profitability/investment attractiveness (<i>Bani-Khaled et al., 2025</i>)
Sustainable Governance	Transparency, ethics, and institutional responsibility (<i>Zairis et al., 2024</i>)

Source: Author’s own conceptual synthesis.

4.2. Literature Review – II. ESG in Investment Theory

ESG in investment theory is addressed in academic literature through paradigms such as stakeholder theory, agency theory, and legitimacy theory, which explain how environmental, social, and governance factors influence investment decisions and the company value.

Kumar, S. (2023) argues that ESG performance is a practical expression of stakeholder theory, as it reflects the impact of corporate activity on employees, communities, the environment, and other relevant groups. The study by *Bani-Khaled, S., Azevedo, G., and Oliveira, J. (2025)* identifies stakeholder theory as the dominant theoretical foundation in ESG analysis. The authors state that ESG reflects “*value creation for all parties affected by a firm’s activity, not just for shareholders.*”

Awa, H. O., Etim, W., and Ogbonda, E. (2024) contend that stakeholder pressure for social and environmental responsibility has expanded corporate accountability beyond shareholders, in line with ESG principles. *Clark, G. L., Feiner, A., and Viehs, M. (2015)* demonstrate that firms with high ESG scores tend to have lower capital costs and superior performance.

Eccles, R. G., Ioannou, I., and Serafeim, G. (2014) examine how sustainability influences the organisational culture and investment strategies. The *UNEP Finance Initiative (2005)* argues that ESG integration is compatible with investors’ fiduciary duties. *Friede, G., Busch, T., and Bassen, A. (2015)* provide a meta-analysis showing positive correlations between ESG performance and financial returns.

Table 2 below summarises the dominant theoretical paradigms relevant to the paper’s theme, as identified in the academic literature.

Table 2. Dominant Theoretical Paradigms Relevant to the Paper’s Theme, as Identified in the Academic Literature

Paradigm	Contribution to Investment Theory and Sources
Stakeholder Theory	ESG reflects responsibility toward all affected parties, not just shareholders. (<i>Kumar, 2023; Bani-Khaled et al., 2025; Awa et al., 2024</i>)

Paradigm	Contribution to Investment Theory and Sources
Agency Theory	ESG reduces informational asymmetries and mitigates risks of opportunistic behaviour. (UNEP FI, 2005; Friede et al., 2015; Clark et al., 2015)
Legitimacy Theory	ESG strengthens social and regulatory acceptance of the firm, reducing external risks. (Awa et al., 2024; Eccles et al., 2014; Bani-Khaled et al., 2025)
Long-Term Value	ESG is positively correlated with financial performance; it supports sustainable returns and lower capital costs. (Friede et al., 2015; Clark et al., 2015; Eccles et al., 2014)

Source: Author's own conceptual synthesis.

4.3. Literature Review – III. Cross-Border Investment and ESG Standards Harmonisation

Recent academic literature highlights that cross-border investments are increasingly influenced by the harmonisation of ESG standards, particularly through European regulations, multilateral initiatives, and market-driven pressures for transparency and comparability. Cross-border investments involve the allocation of capital across jurisdictions with differing ESG regimes; therefore, harmonizing ESG standards is essential in several key areas: (i) Reducing compliance and reputational risks; (ii) Enhancing comparability across firms and markets; (iii) Facilitating access to sustainable capital; and (iv) Aligning with international regulatory frameworks (e.g., *CSRD*, *SFDR*, *EU Taxonomy*).

These dimensions are supported by the academic sources relevant to the paper's theme, as summarised in the following table:

Table 3. Synthesis – Literature Review III: Cross-Border Investment and ESG Standards Harmonisation

Author(s)	Work	Contribution
Borghesi et al. (2025)	<i>Reforming ESG: A European and Global South Perspective</i>	Analyses the impact of EU regulations on firms in the Global South and proposes six ESG harmonisation pathways.
IJIRSET (2025)	<i>ESG Disclosure Mandate and Global Regulatory Harmonisation</i>	Identifies barriers and strategies for ESG harmonisation in cross-border contexts.
GSCARR (2024)	<i>Comparative Review of Sustainability Reporting: USA vs Europe</i>	Highlights ESG reporting differences across jurisdictions and their impact on international investment.
CFA Institute (2020)	<i>ESG and Responsible Institutional Investing Around the World</i>	Examines ESG strategies of institutional investors in global markets and the challenges of harmonisation.

Source: Author's own conceptual synthesis.

Moreover, mandatory regulations (such as *SFDR*) and voluntary initiatives (such as *ISO IWA* and *OECD standards*) are converging toward a global framework that supports

sustainable investment and reduces regulatory arbitrage risks. This convergence is reflected in several key sources:

OECD (2020) – ESG Investing and International Standards, which analyses the challenges of harmonising ESG criteria across jurisdictions and the role of international standards such as *GRI, SASB, and TCFD*;

EU SFDR (Regulation 2019/2088) – Sustainable Finance Disclosure Regulation, which imposes transparency obligations on financial market participants regarding ESG integration;

ISO IWA 42:2022 and IWA 48:2024 – International Workshop Agreements on ESG Reporting, which provide voluntary frameworks for ESG disclosure, emphasising comparability and verifiability.

4.4. Literature Review – IV. Emerging Technologies and Investment Ethics

In the context of accelerated digitalisation of financial markets, investment ethics is increasingly intertwined with how emerging technologies – such as artificial intelligence, trading algorithms, and ESG analytics platforms – influence investment decisions. The academic literature addresses this topic from complementary perspectives: systemic critique, managerial integration, and theoretical foundations of responsibility. The reviewed sources suggest that emerging technologies are not ethically neutral and that ESG integration into investment processes must be accompanied by mechanisms for control, transparency, and moral reflection. From the systemic critique of digital capitalism (*Zuboff*) to managerial governance tools (*Arjaliès & Mundy*), and the theoretical foundations of responsibility (*Bénabou & Tirole*), a consensus emerges: investment ethics in the digital age requires a multidimensional approach that combines technology with accountability, as outlined below.

Zuboff's (2019) The Age of Surveillance Capitalism, although not directly focused on ESG or investment, provides a critical framework essential for understanding the ethical risks of financial decision automation. Zuboff argues that digital platforms extract and monetise behavioural data without full consent, generating power asymmetries and algorithmic opacity. In the investment context, this model can be extrapolated to ESG selection algorithms, which risk reproducing systemic biases or prioritising reputational scores over real impact. Thus, the work raises fundamental questions about transparency, responsibility, and human oversight in automated investment processes, offering a critique of digital capitalism that is highly relevant to investment ethics.

In a complementary approach, *Arjaliès and Mundy (2013)* examine how corporate social responsibility (CSR) – a precursor to ESG – is integrated into managerial control systems. Their study shows that firms treating CSR as a strategic component employ tools such as budgeting, performance indicators, and internal audits to translate ethical values into measurable practices. This integration is crucial in the era of emerging technologies, where automated decisions must be anchored in clear organisational frameworks to prevent a disconnect between ethical intentions and actual corporate behaviour.

At the theoretical level, *Bénabou and Tirole (2010)* propose a conceptual model that explains individual and corporate social responsibility as a balance between moral motivations (altruism, reputation) and economic reasoning (value maximisation). This approach is relevant for evaluating investment ethics in the context of emerging technologies, where

decisions may be driven by algorithms optimising returns while ignoring social or environmental externalities. The authors' model provides a framework for understanding the tension between efficiency and ethics in automated investment and for justifying ESG integration as a mechanism for reconciling the two.

5. FROM PRINCIPLES TO PRACTICE: ESG IN ACTION IN INTERNATIONAL FINANCIAL INVESTMENT. CASE STUDIES

This chapter presents ten relevant case studies illustrating the integration of ESG criteria into cross-border investments, with a focus on sovereign funds, emerging markets, and reporting technologies.

Case studies were selected based on criteria of relevance and diversity – geographical, institutional, thematic, and methodological – aimed at reflecting the real-world complexity of ESG integration in cross-border financial investments. The cases cover advanced economies (Norway, Japan, USA, Germany), emerging markets (Indonesia, Kenya, Romania, China), and regions with distinct religious or cultural characteristics (Abu Dhabi, Indonesia). Institutionally, the studies include sovereign wealth funds, commercial banks, digital platforms, public authorities, and SMEs. Thematically, they explore financial instruments (green bonds, ESG funds), reporting technologies, lending policies, and governance mechanisms. Methodologically, the approaches range from macroeconomic strategies and international regulation to operational solutions and local impact models. This diversity enables the formulation of robust and comparable conclusions, demonstrating that ESG is a flexible, scalable, and adaptable framework, capable of functioning across varied economic and cultural contexts. Official data sources were used.

5.1. Case Study 1: Norway's Sovereign Wealth Fund – ESG as a Global Strategy

This case study is based on official data from *the Annual Report of Norway's sovereign wealth fund (Norges Bank Investment Management, 2024)*, which details exclusion policies, shareholder voting, and ESG integration in global investments.

Entity: Government Pension Fund Global (GPFG)

Context: The largest sovereign wealth fund in the world, with investments in over 70 countries

ESG Integration: The fund has a clear, public, and audited ESG strategy, with detailed annual reports on environmental impact, human rights, and governance. It applies ethical screening and active exclusions (e.g. nuclear weapons, corruption, environmental destruction), positioning itself as a model of capital-values alignment. It publishes an annual responsibility report including ESG scores and voting decisions at general assemblies. It collaborates with international institutions to harmonise ESG standards (e.g. *GRI, TCFD*).

Impact: By allocating capital based on ESG criteria, GPFG acts as a non-aggressive geopolitical player, indirectly influencing governance and sustainability in the countries where it invests. It has prompted global companies to improve governance and transparency, and is considered a benchmark for responsible cross-border investment.

5.2. Case Study 2: ESG Investment in Emerging Markets – Green Bonds in Indonesia

This case study is based on official data from the *Green Sukuk Allocation and Impact Report 2022* (Ministry of Finance, Republic of Indonesia, 2023), which documents the issuance of sovereign green bonds, alignment with the Climate Bonds Standard, and environmental and sustainable development impact.

Entity: Government of Indonesia + international investors (e.g. *HSBC*, *BlackRock*)

Context: Sovereign green bond issuance to finance environmental projects

ESG Integration: Alignment with the Climate Bonds Standard and Green Bond Principles. Annual reporting on environmental impact (emissions reduction, forest protection). ESG evaluation conducted by international agencies (e.g. *Sustainalytics*).

Impact: Attracted international capital and strengthened Indonesia's credibility as a sustainable emerging market, with positive effects on sovereign credit rating. Indonesia was the first country in the world to issue a green sukuk (bonds compliant with Islamic principles and ESG criteria), starting in 2018. This combination of ethical finance and sustainability offers a replicable model for other emerging economies with religious or cultural specificities. The green bond issuances attracted institutional investors from Europe, the US, and Asia, demonstrating that ESG facilitates cross-border investment in markets with higher perceived risk. Indonesia used these funds for green projects: renewable energy, sustainable transport, and waste management. The Indonesian state demonstrates that ESG is not reserved for advanced economies but can be integrated into the sovereign financial architecture of an emerging market.

5.3. Case Study 3: ESG Reporting Technologies – SAP Sustainability Control Tower

This case study is based on official data from *SAP Sustainability Control Tower: Real-Time ESG Performance Management* (SAP, 2024), which describes how SAP's digital platform enables real-time collection, verification, and visualisation of ESG data in accordance with international standards.

We selected the SAP Sustainability Control Tower case because it illustrates a crucial and often underestimated dimension of global financial sustainability, namely, the digitalisation of ESG processes. In contrast to sovereign funds (Norway, Japan) or bond issuances (Indonesia, ESM), SAP represents the technological dimension of ESG, completing the multidimensional picture of financial sustainability.

Entity: SAP + multinational companies (e.g. Siemens, Nestlé). SAP is a German multinational company specialising in business and operational management software. The name stands for Systems, Applications, and Products in Data Processing. Founded in 1972 in Walldorf, Germany, SAP is one of the world's largest providers of ERP (Enterprise Resource Planning) software. It offers digital solutions for financial management, supply chains, human resources, production, sustainability, and ESG reporting.

Context: Use of a digital platform to centralise and verify ESG data

ESG Integration: Automates data collection across the global value chain. Enables real-time visualisation of ESG indicators (Scope 1–3 emissions, diversity, governance). Compatible with international standards (e.g. *CSRD*, *SFDR*, *GRI*).

Impact: Enhances the accuracy and comparability of ESG reporting in cross-border investments, facilitating responsible and compliant decision-making. In the context of cross-border investment, SAP becomes a provider of ESG digital infrastructure, supporting companies and institutions in integrating environmental, social, and governance criteria into strategic decisions. The SAP platform transforms ESG from an abstract set of principles into an operational system capable of collecting, validating, and visualising ESG data in real time. International investors demand transparency and comparability in ESG data, and the SAP platform delivers precisely that, enabling companies across jurisdictions to comply and attract responsible capital. Thus, technology becomes a vehicle for ESG integration in global markets, regardless of institutional maturity.

5.4. Case Study 4: Abu Dhabi Sovereign Wealth Fund – ESG and Islamic Values

This case study is based on official data from the *Sustainability Report, Abu Dhabi (Abu Dhabi Investment Authority, 2023)*. We selected the case of the *Abu Dhabi Sovereign Wealth Fund (ADIA)* because it offers a distinct and strategic perspective on how ESG criteria can be integrated into a specific cultural and religious framework without compromising global investment efficiency.

ADIA demonstrates that Islamic investment principles (e.g. prohibition of interest, contractual ethics, avoidance of speculative assets) can be compatible with ESG criteria. ESG is not perceived as an external imposition but as an extension of local values, which facilitates its acceptance and implementation in religiously specific regions. The ADIA case adds a cultural and religious dimension to comparative ESG analysis, complementing European, American, and African approaches, and allows exploration of how ESG can be adapted – not imposed – according to institutional and value-based contexts.

Entity: Abu Dhabi Investment Authority (ADIA)

Context: One of the largest sovereign wealth funds in the world, active in over 50 countries

ESG Integration: Established internal teams dedicated to each asset class, analysing the impact of climate change on the portfolio. Integrates ESG into decision-making, aligning investments with sustainable development goals and local values (e.g. Islamic ethics). Collaborates with global initiatives such as the One Planet Sovereign Wealth Fund Framework.

Impact: ADIA demonstrates how local values can coexist with international ESG standards, offering a model of cultural and financial integration in global investment. Through ESG integration, it influences corporate behaviour and governance in both emerging and developed markets, including Europe and Asia.

5.5. Case Study 5: ESG Loans for SMEs in Kenya

This case study is based on official data from the *ESG-Linked SME Financing Framework, Nairobi (Absa Bank Kenya, 2024)*. We selected the case of ESG-linked loans for SMEs in Kenya because it offers an innovative and inclusive perspective on how ESG criteria can be applied to foundational financing in emerging economies.

Absa Bank Kenya provides loans with interest rates that vary according to ESG performance: firms that reduce emissions, promote diversity, or manage resources efficiently benefit from more favourable conditions. This approach transforms ESG into an economic

incentive mechanism, not merely a reporting criterion. Through this initiative, Kenya becomes attractive to international investors focused on impact and sustainability, demonstrating that emerging markets can innovate in ESG. The case study exemplifies the intersection between international capital and sustainable local development.

Entity: Absa Bank Kenya

Context: Launch of the first ESG-linked credit product for small and medium-sized enterprises (2024)

ESG Integration: Interest rates are adjusted based on the borrower's ESG performance (e.g. emissions reduction, social inclusion). Includes digitally monitored sustainable performance indicators (KPIs). Extends ESG principles beyond corporations to the backbone of the emerging economy: SMEs.

Impact: Kenya emerges as a model for democratising sustainable finance, showing that ESG can be applied even in economies with developing financial infrastructure.

5.6. Case Study 6: Digitalisation of ESG Reporting in China

This case study is based on official data from *ESG Disclosure and Digital Reporting Trends in China* (Shanghai Stock Exchange, 2023). We selected the case of ESG reporting digitalisation in China because it highlights a crucial dimension of global financial sustainability – namely, technology as an accelerator of ESG transparency and compliance within an emerging and systemic context.

The study shows how digital ESG reporting platforms used by companies listed on the Shanghai and Shenzhen stock exchanges have improved the accuracy, frequency, and verifiability of ESG data. Digitalisation enables automated compliance with international standards (e.g. *GRI*, *SASB*, *ESRS*), thereby facilitating cross-border investment.

Entity: Companies listed on the Shanghai and Shenzhen stock exchanges

Context: Impact study on digital transformation and ESG performance (2023)

ESG Integration: Digital platforms have enhanced the accuracy, frequency, and verifiability of reported ESG data. Companies with higher levels of digitalisation achieved better ESG scores and attracted more international capital. Digital reporting has been correlated with reduced reputational and financial risks.

Impact: China offers an example of technological scaling of sustainability, where digitalisation becomes a catalyst for ESG integration in emerging markets.

5.7. Case Study 7: Transilvania Bank– ESG and Institutional Investment in Romania

This case study is based on official data from *BT Asset Management – ESG Investment Strategy Overview* (Banca Transilvania, 2023). We selected the case of Transilvania Bank – ESG and institutional investment in Romania because it offers a local, European, and applied perspective on how ESG criteria are translated into concrete financial practices within an emerging EU economy.

Transilvania Bank (Banca Transilvania) is the largest banking group in Romania, with an extensive network and significant influence over the capital market and SMEs. Through the launch of an investment fund with an ESG component, BT translates European

regulations (e.g. *SFDR*, *EU Taxonomy*) into local practices, facilitating Romania's alignment with international standards.

Entity: Banca Transilvania (BT Asset Management)

Context: The largest banking group in Romania, active in investment fund management and SME financing

ESG Integration: In 2023, BT Asset Management launched the first Romanian investment fund with a declared ESG component, aligned with SFDR requirements (*EU Regulation* 2019/2088). The fund invests in listed companies that meet environmental, social, and governance criteria, with periodic reporting in accordance with the EU Taxonomy. The bank has also integrated ESG into its lending process, offering preferential conditions to firms with strong sustainability performance (e.g. energy efficiency, social inclusion).

Impact: Banca Transilvania becomes a regional example of a financial institution translating European ESG regulations into local practices, contributing to investment education and attracting responsible capital to Romania. By offering preferential lending terms to firms with ESG performance, the bank transforms sustainability into a genuine competitive advantage.

5.8. Case Study 8: European Stability Mechanism – ESG in Sovereign Financing

This case study is based on official data from the *ESG Summary Report, Luxembourg (European Stability Mechanism, 2024)*. It complements the previous cases by offering the perspective of a supranational institution, reinforcing the idea that ESG is becoming a common language of capital in Europe, with applicability in sovereign financing, institutional investment, and macroeconomic governance.

Entity: European Stability Mechanism (ESM)

Context: An intergovernmental financial institution of the euro area, responsible for providing financial assistance to member states in distress

ESG Integration: Publishes an annual *ESG Summary Report* detailing environmental, social, and governance policies applied in its financing activities and internal operations. Has issued bonds compliant with the *EU Green Bond Standard*, with transparent allocation and impact reporting. Integrates ESG into sovereign risk assessment and into dialogue with member states regarding structural reforms.

Impact: ESM demonstrates how public financial institutions can shape sustainability at a systemic level, influencing both capital markets and the economic policies of member states.

5.9. Case Study 9: BlackRock – ESG as Global Investment Infrastructure

This case study is based on official data from the *Investment Stewardship Annual Report, New York (BlackRock Inc., 2024)*. It offers the perspective of a private American entity operating on a global scale, reinforcing the idea that ESG is becoming a structural criterion in asset management and cross-border investment.

Entity: BlackRock Inc.

Context: The world's largest asset manager, with global exposure and systemic influence over financial markets

ESG Integration: BlackRock has launched multiple *ESG-themed ETFs*, including the *iShares ESG Aware MSCI USA ETF*, which integrates ESG scores into the selection of U.S. companies. It publishes an annual *Stewardship Report* detailing shareholder voting and engagement with companies on governance and sustainability issues. The firm has developed the *Aladdin Climate platform*, which enables climate risk analysis across global portfolios, including bonds and fixed-income instruments.

Impact: BlackRock transforms ESG from a mere reputational label into a system for capital allocation and evaluation, influencing institutional investment decisions worldwide and shaping ESG reporting standards.

5.10. Case Study 10: Japan's Pension Fund – ESG and Long-Term Institutional Investment

This case study is based on official data from the *ESG Activities and Performance Report, Tokyo (Government Pension Investment Fund Japan, 2023)*. It adds an Asian and public pension perspective to the comparative analysis, reinforcing the idea that ESG is being adopted transversally – across geographies, institutions, and sectors – within the architecture of cross-border investment.

Entity: Government Pension Investment Fund (GPIF), Japan

Context: The world's largest public pension fund, with over USD 1.7 trillion in assets and global exposure

ESG Integration: GPIF has adopted a systemic ESG strategy, integrating criteria across all asset classes, including international bonds and equities. It collaborates with *MSCI*, *FTSE*, and *S&P* to develop customised ESG indices used as benchmarks for asset allocation. It publishes detailed reports on the impact of ESG on financial performance, demonstrating a positive correlation between sustainability and long-term returns.

Impact: GPIF offers a model of an institutional investor that transforms ESG into a structural criterion for capital allocation, influencing global markets through its scale and stability.

6. RESULTS AND DISCUSSION

The analysis of the ten cases – Norway, Indonesia, Germany (SAP), Abu Dhabi, Kenya, China, Romania, the EU (ESM), the United States (BlackRock), and Japan – offer a complex and coherent picture of how ESG criteria are becoming a strategic infrastructure of global capital.

From these ten case studies, several key insights emerge regarding ESG integration in cross-border investment:

- i. ESG is a global language of capital. From sovereign wealth funds (Norway, Abu Dhabi, Japan) to commercial banks (Kenya, Romania) and digital platforms (SAP, China), ESG is embraced as a principle for capital allocation, not merely as a reputational label. Moreover, ESG facilitates financial dialogue across cultures, continents, and economic systems, becoming a universal criterion of trust and transparency.

ii. Emerging markets can attract capital through well-structured ESG instruments. Indonesia issued sovereign green bonds aligned with the Green Bond Principles, attracting investors from Europe and the United States. This demonstrates that Islamic finance and ESG can coexist, offering a replicable model. Indonesia's case shows that green bonds aligned with international standards can reduce sovereign risk and enhance investment appeal. ESG becomes a mechanism of financial legitimacy for emerging economies, facilitating their integration into global markets.

iii. ESG is scalable and adaptable. ESG can be applied across diverse contexts: Islamic (Abu Dhabi, Indonesia), emerging (Kenya, China, Romania), institutional (ESM, GPFG), and technological (SAP). This contextual flexibility makes ESG a powerful tool for integration.

iv. ESG is culturally and institutionally adaptable. Abu Dhabi and Indonesia demonstrate that ESG can be aligned with Islamic values without compromising international standards. ESG thus becomes a pluralistic financial language, capable of coexisting with diverse traditions, religions, and economic models.

v. Technology is an ESG catalyst. Emerging technologies support verifiability and cross-border coherence, essential for investor confidence. The case studies from China and SAP show that digitalisation is crucial for ESG data collection, verification, and reporting – especially in emerging markets. Technology transforms ESG from a set of principles into an operational, verifiable system, accessible even to SMEs (Kenya, Romania). The SAP platform exemplifies how automated ESG reporting enables jurisdictional comparability and real-time access to relevant data.

vi. ESG facilitates cross-border investment. Green bond issuances (Indonesia), ESG funds (Romania, USA), and standardised reporting (EU, SAP) attract responsible international capital, reducing trust and information barriers. ESG thus becomes a bridge between global investors and local economies, supporting sustainable development.

In conclusion, the ten case studies demonstrate that global financial sustainability is not merely possible – it is already underway, through the convergence of ethics, technology, and investment strategy. ESG integration in cross-border investment is no longer a reputational option but a functional requirement of global financial markets. Sovereign funds, emerging markets, and digital platforms are converging toward a model of systemic financial sustainability, in which ESG criteria are an integral part of international investment infrastructure.

These case studies highlight that ESG is becoming a common language of global capital – regardless of region, development level, or cultural tradition.

7. FINAL ETHICAL REFLECTION

In light of the analysed case studies, a deeper reflection on the nature of investment becomes necessary: can profit be sustainable? Can capital become a civic actor?

The integration of ESG criteria into the global financial architecture suggests that the answer is affirmative, but conditional.

ESG is not merely a technical tool for investment selection; it is an emerging form of economic justice, capable of reshaping the relationship between capital, the state, and the citizen. Through transparency, accountability, and alignment with universal values – ecological precaution, social inclusion, and ethical governance – ESG transforms investment from speculative acts into acts of global co-responsibility.

Thus, capital is no longer solely a vector of accumulation; it becomes a civic actor, capable of influencing corporate behaviour, public policy, and transnational norms. In this sense, sustainable profit is not a contradiction, but a recalibration of trust between markets and societies, between investors and communities, between economy and dignity.

This transformation is not automatic; it requires institutional will, digital infrastructure, and normative convergence. The ten case studies demonstrate that such a transformation is not only possible, but already underway, and profoundly relevant to the future of cross-border investment.

8. CONCLUSIONS

The analysis of the ten case studies presented highlights that the integration of ESG criteria (environmental, social, and governance) has become a structural element of global financial sustainability, with direct implications for cross-border capital flows. Beyond the geographical, institutional, and cultural diversity of the actors examined, several converging conclusions emerge:

- ESG as global capital infrastructure. ESG is no longer a voluntary or reputational tool, but an essential component of global investment architecture. Sovereign wealth funds, commercial banks, digital platforms, and public authorities are integrating ESG into decision-making processes, risk assessment, and resource allocation.
- Compatibility between ESG performance and financial returns. The case studies demonstrate that investments aligned with ESG criteria not only preserve returns but also contribute to the long-term stability and resilience of portfolios, reducing exposure to systemic risks (climatic, reputational, social).
- Emerging markets' capacity to attract capital through ESG. Examples from Indonesia, Kenya, Romania, and China show that emerging markets can access international capital through well-structured ESG instruments, provided they adhere to principles of transparency, standardised reporting, and contextual adaptation.
- Digitalisation as a sustainability accelerator. ESG reporting technologies (e.g. SAP Sustainability Control Tower, China's stock exchange platforms) facilitate the collection, validation, and communication of ESG data, becoming essential for scaling sustainability in economies with transitional institutional infrastructure.
- ESG as a vector of convergence between economic and cultural systems. The integration of ESG in Islamic (Abu Dhabi, Indonesia), Nordic (Norway), Asian (Japan, China), and Eastern European (Romania) contexts demonstrates that ESG can be adapted to diverse cultural and religious paradigms without losing normative coherence.

In conclusion, the case studies validate the central hypothesis of this research: ESG is becoming the new grammar of global capital, capable of connecting investors, institutions, and states around shared objectives of sustainability, transparency, and responsibility. This transformation is not uniform, but it is irreversible, and the ability of the economic actors to embed ESG into their strategies will determine their positioning in the future global economy.

9. FUTURE RESEARCH DIRECTIONS

Based on the conclusions formulated, a pertinent future research direction lies in the comparative analysis of ESG instrument effectiveness according to the type of financial actor (sovereign wealth fund, commercial bank, digital platform, SME), with a focus on the correlation between ESG performance and the attraction of cross-border capital.

Furthermore, a deeper exploration of the ethical and civic dimensions of capital is warranted, investigating the extent to which ESG can function not only as an investment selection mechanism but also as a tool for rebuilding trust between markets, institutions, and citizens.

Another relevant direction concerns the role of technology in scaling ESG across emerging markets, including field studies on the digitalisation of reporting and SME access to sustainable finance.

Finally, future research could examine the interaction between international ESG regulations and local economic sovereignty, with emphasis on the cultural and legal adaptability of these normative frameworks.

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NEW TRENDS IN GLOBAL FINANCIAL ARCHITECTURE

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Abstract

The last decade since 2008 has witnessed a fundamental change in the direction of international finance. There are four main trends: the process of dedollarization, the process of deglobalization, the process of decentralization and the rise of gold. International finance is in a transition from a unipolar to a more fragmented but also more diverse world. The success of this transition will depend on the ability of states and international institutions to create a balance between innovation and stability, between globalization and regionalization, between traditional assets and new technologies.

Keywords: dedollarization, deglobalization, decentralization, blockchain technology, gold

INTRODUCTION

The last decade since 2008 has witnessed a fundamental shift in the direction of international finance. There are four main trends – the subject of the exhibition – that define the architecture of international finance: the process of dedollarization, in the form of the search for alternatives to the US dollar by emerging countries; the process of deglobalization – the fragmentation of the global economy and finance, due to geopolitical tensions and crises; the process of decentralization, resulting from the rise of digital currencies, blockchain technologies and new forms of financial decentralization; and the rise of gold and its return as a traditional asset and safe haven in times of uncertainty. This report aims to analyze the four main trends – the subject of the exhibition, their interrelationships and their significance for the future of the international financial system.

I. Dedollarization – the end of the unipolar financial world?

1. Historical basis of dollar dominance

After the Bretton Woods Conference in 1944, the US dollar became the backbone of the international monetary system. The US, with the largest gold reserves and industrial power, guaranteed the convertibility of the dollar into gold at a fixed rate of USD 35 per troy ounce.

In the 1970s, the United States and Saudi Arabia signed an agreement to sell oil from Saudi Arabia and other oil-producing countries in U.S. dollars. Although President Nixon formally ended the dollar-gold link in 1971, the “petrodollar system” (the agreements with Saudi Arabia and OPEC to trade oil in dollars) continued to keep the currency at the center of global finance, allowing the United States to print dollars unchecked to finance its domestic deficit.

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In the following decades, the dollar became the main reserve currency, a means of international payments and a dominant asset in global capital markets. According to the International Monetary Fund (IMF, 2023), about 71% of central bank foreign exchange reserves in 1999 were in dollars. In addition, over 80% of international trade transactions and about 60% of the external debt of developing countries are denominated in US currency.

The demand for dollars allows the United States to have the largest national debt in the world – \$21.9 trillion at the end of 2018. Servicing it alone cost the federal government in Washington over \$1 trillion in 2019. The US gross external debt, both private and public, is almost as large, at \$19.3 trillion, of which the state's share is \$6.6 trillion. For comparison, the gross domestic product of the largest economy is \$20.1 trillion.

The dollar's share of foreign exchange reserves has been declining in recent years – from over 70% at the end of the last century to nearly 66% in 2015, and by the end of the third quarter of 2018 it was already 61.94%, according to IMF data. At the same time, the share of the second most important reserve currency – the euro – remains stable at around 20%.

In terms of international trade, the share of transactions in dollars is also decreasing – from 51.9% in 2014, it is already 36.7% in 2018, according to SWIFT data. In this respect, the role of the euro is increasing, with its share in international transactions reaching 34.1% by the end of the second quarter of the same year, by comparison, payments in Chinese yuan were only 2.1% of all.

2. New challenges to dollar hegemony

However, over the past two decades, the global financial environment has undergone serious changes that are gradually eroding the “Exorbitant Privilege” of the dollar (Eichengreen, 2011).

- ***The global financial crisis (2008)*** exposed the vulnerabilities of the US financial system and sparked intense debate about the need for a more diversified currency architecture. In late 2008, the US dollar experienced a surprising appreciation in the result of a combination of factors. In search of safety, investors sought refuge in US government bonds, which increased demand for the US dollar. Increased foreign exchange operations, in which investors sold high-yielding currencies for low-yielding currencies such as the dollar, further increased its value. The shortage of US currency in global banking markets increased borrowing costs, causing companies to repay their debts in dollars, while European banks and institutional investors increased hedging of their dollar assets, leading to spot purchases of dollars. All of these factors contributed to the sharp appreciation of the dollar during the financial crisis.

- ***The COVID-19 pandemic*** is increasing emerging markets' reliance on short-term dollar funding, while highlighting the risk of a "dollar liquidity crisis." The dollar's rise in value amid the COVID crisis comes after years of predictions by many analysts that the dollar is on the verge of losing its status as the world's safest asset. Others predict that the huge deficits of the US government will reduce investor confidence in the dollar. The

explanation is sought in the Trump administration's more aggressive use of sanctions and an increase in deficits to levels not seen since World War II, while the dollar's value is rising. (Miller, 2020).

- **Geopolitical tensions** – especially the sanctions against Russia since 2014 and the escalating financial restrictions in 2022–2023 – put the issue of “weaponization of the dollar” on the agenda. Restrictions on Russia's access to SWIFT and foreign exchange reserves show a number of countries how dependent their economies are on the American financial infrastructure.

Geopolitical tensions have an impact on both the value of the US dollar and its status as a major reserve currency. They encompass a variety of scenarios, including military conflicts, sanctions, trade disputes, and diplomatic crises. For example, the imposition of unilateral sanctions may prompt affected countries to reduce their reliance on dollar-denominated transactions and diversify their reserves into alternative currencies such as the euro, renminbi, or regional instruments (Eichengreen, 2022). Similarly, trade tensions, such as the US-China trade war, cause fluctuations in exchange rates and capital flows, reflecting market reactions to uncertainty and risk. Emerging economies are particularly sensitive to these dynamics. Countries that are highly dependent on trade and dollar-denominated reserves are vulnerable to external shocks, including currency instability and disruptions to international financial flows. As a result, many have adopted strategic measures to reduce their exposure to the dollar, including bilateral and regional trade agreements in local currencies, the establishment of currency swap lines, and the accumulation of alternative reserve assets (Shen & Zhao, 2021). These measures not only enhance financial resilience, but also signal a potential shift towards a more multipolar global monetary system.

3. *Dedollarization initiatives*

More and more countries are taking steps to reduce their dependence on the dollar. Major economies in the Global South are developing cross-border payment systems that are alternatives to the US-dominated SWIFT. One of these systems is the China Cross-Border Interbank Payment System (CIPS)¹, which is used by many developing countries for international payments. India is also developing its own payment system. Since 2019, it has been used to pay for part of Russia's fuel, oil and mineral supplies in its own currency. **China** is actively promoting the use of the yuan in international trade through its Belt and Road Initiative and through the creation of payment systems. The yuan's share of global transactions is expected to increase from under 2% in 2015 to over 4.5% in 2024 (SWIFT, 2024). **Russia and India** are concluding bilateral agreements for payments in rubles and rupees, especially after sanctions against Moscow. **Brazil and China** signs 2023 deal to trade directly in real and yuan, bypassing the dollar. **BRICS** discusses creating a common currency to rival the dollar within the group.

¹ *Cross-Border Interbank Payment System (CIPS)* – A Chinese payment system that launched in 2015, offering clearing and settlement services for cross-border payments and trading in renminbi (RMB).

4. Limitations to dedollarization

Despite these initiatives, full de-dollarization seems unlikely in the short term. The main obstacles are:

- **Lack of deep and liquid financial markets** in other currencies comparable to those of the US – the most important factor is the level of development of the respective country.
- **Trust in the institutional framework** of the American economy, including the rule of law, regulations, and transparency.
- **Network effects** – the more participants use the dollar, the higher the benefit for the others (path dependency). It is necessary to synchronize national regulatory standards with international ones.
- **The limited convertibility of the yuan** and capital controls in China. Market participants seek to use a currency that can be quickly and efficiently converted into national currency or invested in the most liquid and high-yielding financial instrument possible.

The above requirements are a serious problem, but not insurmountable for most countries in the Global South. It should also be taken into account that the dollar's position in the global economy remains solid.

5. Prospects for a multipolar monetary system

The role of the US dollar, established after World War II, as a global currency, is under threat from new economic blocs that have launched alternative platforms for trade and investment, on the one hand. On the other hand, the expansion of the BRICS is accelerating the process of de-dollarization in the global economy, despite the fact that foreign exchange reserves in US dollars are preserved, but without the prospect of a clear alternative. De-dollarization should be understood not as the replacement of the dollar by a single alternative currency, but as **a gradual transition to a multipolar system** in which the dollar retains its central role, but with a lower share in reserves; the euro and the yuan strengthen their positions as regional currencies; gold and, in the future, central bank digital currencies (CBDCs) are established as additional elements of the financial mix. This evolution will lead to greater diversification and sustainability of the system.

II. Deglobalization and fragmentation of the financial system

1. The rise of globalization and integration until 2008

The development of Globalization goes through five eras.

There have been five periods of modern globalization. In *the first period*, from 1870 to 1914, economic integration increased, driven by the steamship and other advances that allowed more goods to move more cheaply between markets. Globalization reversed in *the second period*, from the outbreak of World War I in 1914 to the end of World War II in 1945. World War I caused a prolonged economic dislocation that included Russia's withdrawal from world trade after the communist revolution in 1917, the Spanish flu pandemic in 1918, monetary instability in the early 1920s, new immigration restrictions, the Great Depression beginning in 1929, and the rise of protectionism in the 1930s. This turmoil reduced integration and the world economy fell into crisis.

Economic integration resumed in *the third period*, the three decades after World War II. The geographic scope of the third phase – limited to the United States, Western Europe, Japan, and a few other countries – limited how far global economic integration could continue. The Soviet bloc of communist states and China were non-market economies that did not participate for political and economic reasons. The developing world in Latin America, South Asia, and Africa chose their own path of import substitution, remaining relatively isolated.

In *the fourth period*, from the 1980s to the financial crisis of 2008, economic integration rose to a historically unprecedented global scale. Led by China and India, developing countries began to remove trade barriers. The Soviet bloc in Eastern Europe moved toward democracy and economic liberalization with the fall of the Berlin Wall in 1989, followed by the collapse of the Soviet Union in 1991. Changes in technology also fueled integration and led to the creation of global supply chains. Global growth was strong, and world poverty declined significantly.

In the second half of the 20th century, and especially in the period 1990–2008, globalization became a dominant trend. International finance experienced an unprecedented growth in cross-border capital flows. Foreign direct investment (FDI) increased more than six fold between 1990 and 2007, and the volume of international banking assets grew to over 50% of world GDP (World Bank, 2022). The drivers of this process were the liberalization of capital markets, technological innovation, and the expansion of global value chains.

2. Crises as catalysts for the reverse trend

- **The financial crisis (2008–2009)** questioned the sustainability of excessive dependence on global financial markets. Many countries reimposed capital controls and tightened supervision. This was the first signal of a process of “controlled de-globalization.”

The „slow slowdown“ or Peak Globalization, measured by trade flows, this fourth era of globalization appears to have peaked in 2008. The ratio of world trade to GDP has been falling since the Great Recession. World trade recovered in 2010 from the sharp drop in 2009. Meanwhile, the world economy is in a *fifth historical period*, sometimes called „slowbalisation“.

- **Geopolitical conflicts** – the US-China trade war and the war in Ukraine – are definitively reinforcing the trend towards fragmentation. Financial sanctions, disruption of energy flows and restrictions on investment in strategic sectors (semiconductors, telecommunications) show that globalization is no longer unconditional.

The growth of global value chains – the spread of supply networks between countries – is leveling off. The reform agenda is stalling worldwide. Under President Xi Jinping, with policies to encourage local people and develop leading industries (the Made in China 2025 initiative), China is starting to turn inward and exports as a share of its GDP are declining. China remains an export power, but from 31 percent in 2008 to just 17 percent in 2019, as Nicholas Lardie notes. (Irwin, 2020)

Under President Donald Trump, the United States has adopted an "America First" policy, moving away from trade liberalization (withdrawal from the Trans-Pacific Partnership) and toward protectionism, imposing tariffs on steel and aluminum imports ostensibly for national security reasons, and expanding trade barriers in other directions. The United States has also started a trade war with China over its unfair trade practices, significantly reducing bilateral trade.

2.3 *The COVID-19 pandemic (2020–2021)* has accelerated this process by causing severe shocks to supply chains and requiring government interventions. *The pandemic, a push towards deglobalization*, has certainly added further momentum to deglobalization. More important is the way in which countries are beginning to embrace economic integration. The pandemic has heightened concerns around the world that supply chains have gone too far. Export bans have been imposed over inadequate domestic production of medical equipment, personal protective equipment and pharmaceuticals. Such policies exacerbate shortages, the opposite of the intended effect. Past experience shows that when some countries start to restrict trade in critical goods, others are likely to follow suit. Experience also shows that fear drives countries to turn inward. Many countries are now rethinking trade dependence. The risk of overreaction and a slide towards protectionism is compounded by the failure of leadership in the United States, leaving a vacuum in the global trading system. The world economy is at a critical turning point in history, with fears of dependency growing. A turn inward does not mean the end of globalization, only a partial reversal. But undoing the damage is likely to be difficult.

3. Characteristics of deglobalization.

The process of deglobalization does not mean an absolute decline in cross-border activity, but **a reorganization and regionalization** of financial ties. The main manifestations are:

- **Reduction in cross-border capital flows** – according to data from the McKinsey Global Institute (2023), their volume as a share of GDP remains below the peak levels of 2007.
- **Redirecting investments to "friendly countries" (friendshoring)** – the US and EU encourage their companies to export production from China to countries with similar political values, such as Vietnam, India and Mexico.
- **Financial growth Regulation** – increased transparency requirements, screening of foreign investments and restrictions on strategic acquisitions by state funds.
- **Financial decoupling** – partial "uncoupling" between the US and Chinese financial markets, including limiting Chinese listings in the US and creating parallel market infrastructures.

The European Union is in a particularly vulnerable position, as it is located between the US and China and is highly dependent on external resources. The EU is pursuing a policy of strategic autonomy, including through initiatives such as Next Generation EU, the Green Deal and the European Chip Act. **The US** is strengthening its domestic industry through industrial policy programs (CHIPS and Science Act, Inflation Reduction Act), which creates new domestic sources of financing and reduces the need for global chains.

China is accelerating the internationalization of the yuan and creating regional alternatives to Western financial institutions, such as the Asian Infrastructure Investment Bank (AIIB). **Developing economies** are often the most affected by fragmentation, as their access to capital becomes more difficult and their dependence on large blocs increases.

The positive effects, which are being realized include greater regional resilience, diversification of risks, emergence of additional incentives for the development of domestic capital markets. While **the negative sides relate to** higher financing costs, less efficient allocation of capital, and a deepening risk of inequalities between developed and developing countries.

Deglobalization and fragmentation are likely to deepen over the next decade. The world is moving towards a system of **financial blocs** based on political and geopolitical alliances: the “Western Bloc” (USA–EU–allies); the “Eastern Bloc” (China–Russia–part of the Global South); a group of “balancing countries” (India, Brazil, Turkey) that maneuver between the two centers. As a result, international finance may turn out to be less global, but also more complexly organized, with multiple parallel infrastructures, currency zones, and regional development banks.

Deglobalization and financial fragmentation represent not so much a retreat from globalization as **its transformation**. The world financial architecture is moving from “universal connectivity” to “selective integration,” in which geopolitics and strategic interests dictate the direction of capital flows. For international finance, this means higher uncertainty, but also the opportunity to create more sustainable regional models.

III. Decentralization: digital currencies and fintech transformations

1. Decentralization

1.1 Nature of the decentralization process

Decentralization in finance is the transfer of functions from traditional intermediaries – banks, clearing houses and international institutions – to new technological solutions that allow direct transactions between participants. It is the result of both the development of **the fintech sector** and the experiments of central banks with **digital currencies**. In the context of international finance, decentralization is changing the way payments, lending and investments are made, opening the way to new business models and cross-border money flows.

Key aspects of decentralization in international finance include:

- **Decentralized Financial Technology (DeFi)**. Through Blockchain technology, DeFi allows for the creation of automated contracts and transaction networks without centralized management. This enables direct transactions between users, lower costs, and faster transfers, independent of government and banking structures.
- **Digital currencies and cryptocurrencies**. The introduction of cryptocurrencies such as Bitcoin and Ethereum is creating new ways to make international payments. These currencies are decentralized and controlled by the communities that use them, rather than by governments and banks.

- *Reducing dependence on reserve currencies.* Decentralization encourages countries and companies to use alternative mechanisms for transactions and reserves, reducing dependence on traditional reserve currencies.
- *Increased transparency and security.* In decentralized systems, data and transactions are stored on distributed networks that are difficult to manipulate or compromise. This increases transparency and trust in international payment systems.
- *Regulatory Challenges.* The absence of central control poses a challenge for regulators and makes it difficult for countries to manage cash flows, which creates risks for financial abuse, money laundering, and other illegal activities.

1.2 Central Bank Digital Currencies (CBDC).

One of the most significant transformations is related to the development of CBDCs – digital forms of national currencies issued and guaranteed by central banks. **China** is a pioneer with e-CNY, which is already being piloted in major cities and integrated into the CIPS international payments platform. **The European Union** is working on a “digital euro,” with the European Central Bank considering scenarios for its introduction within a few years. **The US** is developing FedNow and discussing the possibility of a digital dollar, albeit with greater caution due to geopolitical implications. According to the BIS (2023), over 130 central banks are exploring or already testing CBDCs. These currencies could reduce the costs of cross-border transfers, increase financial inclusion, and provide new monetary policy tools. At the same time, however, risks arise for the stability of the banking system, as a mass shift to CBDCs could displace traditional deposits.

1.3 Decentralized finance (DeFi) and cryptocurrencies.

Decentralized Financial Technologies, known as DeFi (Decentralized Finance), is developing, which represent a new approach in the world of finance, *the first aspect of decentralization in international payments,* which uses *blockchain technologies* to provide financial services without the need for traditional intermediaries such as banks, insurance companies and other financial institutions. DeFi aims to make financial services more accessible to users, lower costs and faster transfers, independent of state and banking structures, transparent and democratic through the use of *smart contracts (Smart Contracts)* – computer programs that automate and secure the execution of financial transactions and agreements. They allow: ***lending and borrowing of assets*** without banks; ***decentralized exchanges*** for trading tokens; ***stablecoins*** (e.g. USDT, USDC) as an attempt to reduce volatility by linking them to real assets.

A second aspect of decentralization in international payments is the introduction of digital and cryptocurrencies, decentralized and controlled by the communities that use them, rather than by governments and banks. *Digital currencies and cryptocurrencies* are types of electronic money that exist only in digital form and allow transactions to be made without the use of physical banknotes or coins. They differ from traditional currencies, such as the US dollar and the euro, in that they have no physical representation and often use decentralized technology for exchange and management. Although they are used for similar purposes, there are key differences between them.

Digital currencies are currencies that exist only in digital form and can be used for online payments and transactions. They include both cryptocurrencies and centralized digital currencies created and controlled by government or financial institutions, such as a central bank.

Cryptocurrencies – Bitcoin, Ethereum, Ripple, Litecoin – are a type of digital currency that uses cryptography to secure transactions and decentralize governance, typically through blockchain technology. They exist outside the control of central banks or government authorities, offering an alternative model for payments and storage of value.

Advantages of cryptocurrencies. Users can send and receive funds directly, without intermediaries. Blockchain technology provides a high degree of protection against fraud. Cryptocurrencies often allow for fast international transactions with lower costs.

Disadvantages and challenges of cryptocurrencies. Cryptocurrencies are often subject to significant price fluctuations, which can make them unstable as a store of value. Due to their decentralized nature, cryptocurrencies are subject to varying legal and regulatory restrictions in different countries. Cryptocurrencies are a target for hackers and cybercriminals, especially when it comes to crypto exchanges.

The future of digital currencies and cryptocurrencies is expected to be shaped around new regulatory frameworks and the growing adoption of central bank digital currencies (CBDCs) – digital versions of existing fiat currencies issued by central banks. Digital currencies and cryptocurrencies offer alternatives to the traditional financial system and could lead to significant changes in the way people make payments and manage their assets.

2. Advantages and Disadvantages of the DeFi market.

Since 2019, DeFi has been one of the fastest growing crypto sectors. Interest in crypto and DeFi has been growing rapidly during the Covid-19 pandemic and investments are accelerating due to the aforementioned reason. However, DeFi is still in the early stages of its evolution, where the total financial value locked in DeFi from different types of instruments (collateral tokens, smart contracts/DeFi protocols) on leading platforms such as Maker, Compound, Uniswap and Aave has grown from less than \$1 billion in 2019 to over \$90 billion in January 2022.

This growth is driven in part by investors seeking increased transparency and control over their funds on the open network as an attractive alternative to traditional banking. Another reason for this growth is the maturation of stablecoins, such as cryptocurrencies designed to track the value of fiat instruments such as the US dollar (USD). Incentive structures such as yield farming and governance tokens have been developed through which participants can earn returns for providing liquidity to DeFi services.

Advantages of DeFi. The use of DeFi applications has a number of interesting advantages beyond traditional financial services, in terms of easier access to financial products and liquidity, improved market efficiency, improved financial privacy, lower fees, process transparency and faster innovation. This self-growth, self-control and innovative approach to each DeFi project is a key criterion for the claim that the DeFi ecosystem is enriched and innovatively developed with each passing day, and

this process is spontaneous, clean and absolutely transparent, which leads to its constructiveness.

Disadvantages and challenges of DeFi. DeFi has the potential to fundamentally change the financial system by giving users more control and independence, but it also carries significant risks and challenges *from hacks and vulnerabilities* – due to the open source nature and high value of funds, DeFi protocols can be vulnerable to hacker attacks. The lack of regulation can lead to abuse and high volatility in the markets. Even for tech- savvy users, DeFi services can be complex to understand and use.

3. Impact on international finance.

Decentralization is transforming the international financial architecture in *three directions*: **changing the payments infrastructure** – fast cross-border transfers with lower fees; **diversification of reserves** – potential inclusion of digital assets in central bank portfolios; **new geopolitical balances** – countries that develop CBDC first (e.g. China) can secure a strategic advantage in global financial competition.

The likely scenario is **a hybrid system** in which traditional currencies (USD, EUR, JPY) remain the main reserve assets; CBDCs are used in parallel for official payments; DeFi and cryptocurrencies function as significant alternatives. This multi-layered structure will require a new level of international coordination between regulators, as well as the development of global standards for digital payments and cybersecurity.

Decentralization through digital currencies and fintech transformations represents one of the most significant changes in international finance since World War II. It does not eliminate the need for traditional institutions, but it creates **new channels for capital mobilization, new forms of trust, and new sources of risk**. Its impact will deepen, especially if CBDCs and DeFi integrate into the global financial system, creating a more open but also more complex architecture.

IV. The Rise of Gold.

1. Historical role of gold in international finance.

For centuries, the role of money has been played by precious metals, especially gold. Historically, the role of gold in international economic relations was most strongly observed in the 19th century, mainly in 1867, when, within the framework of the Paris Monetary System, the function of international money was assigned to gold and the Gold Standard was established. The currency of each country has a strictly defined gold content, on the basis of which the gold parity of currencies is established. In this case, the free convertibility of each currency is ensured both within a given country and beyond national borders.

The First World War destabilized the Gold Standard system and countries abandoned this monetary system. The Gold Bullion Standard was chosen as a new universal equivalent, establishing the convertibility of banknotes against bullion weighing 12-14 kg., and prohibiting the conversion of gold coins. The USA is the only country that has maintained the gold coin standard for a long time, while England maintains a gold bullion standard. In the late 1920s and in the 1930s, many countries used currency restrictions.

The Second World War led to a deepening of the crisis of the Genoese currency system (Stoimenov, 2011). The idea of restoring the Gold Standard was rejected. After lengthy discussions in 1944 the fundamental foundations of the Bretton Woods (Stoimenov, 2011; Anikin, 1988; Almazova, Dubanosov, 1988) currency system were adopted. The idea of the gold standard and the reserve currencies – the US dollar and the British pound – was adopted.

In the first years after the agreement, the United States fulfilled its commitment to convert the dollar into gold, but at a later stage – in 1960 due to the increase in dollars in international payments, they were forced to abandon this practice. In order to maintain the price of gold, the United States, the countries of the then structure of the Common Market, Great Britain and Switzerland and other countries began to carry out currency interventions. The previously created "Gold Pool" collapsed in March 1968, and 1970 was characterized by the process of demonetization of gold. The gold standard ceased to exist and the paper-money standard was established instead. From August 15, 1971, the United States officially suspended the convertibility of the dollar into gold. This measure effectively established the role of the dollar as the basis of the international monetary system and the replacement of the gold standard with the dollar.

In December 1971, the developed countries negotiated the Smithsonian Agreement within the framework of the Bretton Woods monetary system, which provided for partial adjustments to the parities between national currencies. Some currencies (the German mark, the Belgian franc) were revalued, others (the Italian lira and the Swiss franc) were devalued, and others (the French franc, the British pound) remained unchanged. The main event of the currency adjustments was the devaluation of the dollar by almost 9%. The Jamaican monetary system legally established the process of demonetization of gold at the international level, i.e. gold was deprived of the role of a universal equivalent and was removed from the sphere of circulation.

After the abolition of the gold-dollar standard, *the sale of gold began*. In 1999, with the beginning of *the Washington Agreement* (the first was signed in September by 17 Central Banks, including the European Central Bank) for the sale of the yellow metal for a period of five years in order to stabilize its price. *The second Washington Agreement* was adopted in September 2004, and *the third* – in September 2009.

The demand for gold is also increasing. The main sources of demand are the jewelry industry and investment companies. In 1990, the jewelry industry accounted for 85% of the gold sold, the basis of demand was investment companies. The financial crisis has had a significant impact on the gold market. There is a reduction in demand for the yellow metal. The main consumers of gold in the world are India and China, which ranks first in the world in gold production, and accounts for 15% of the total world production.

The gold market reacts strongly to changes in the US currency rate. During periods of stability, the dollar has an advantage over the yellow metal. It is profitable for banks to store their reserves in dollars, since interest is accrued on dollar accounts.

In international financial circles, a number of countries are expressing their willingness to sell their gold reserves into interest-bearing assets. Such intentions are expressed by

investors in Argentina, Australia, Canada, the Netherlands, Switzerland, the IMF, etc. In 1997, the US Federal Reserve conducted a study of the gold market. It became clear that if countries sold their entire gold reserves, governments would receive an income of 368 billion USD.

In September 1999, a multilateral agreement was signed, involving the ECB, 11 national banks of the eurozone countries, the central banks of England, Switzerland and Sweden, under which a limit on gold sales of 2,000 tons was introduced for the period 1999–2004 in order to avoid a destructive impact on the market. The Washington Agreement concerns reserves of nearly 16,000 tons, or nearly half of all world official reserves. New horizons are opening up for the gold market. The countries participating in the agreement have reserves of 28,000 tons. The agreement played its role. A catastrophic decline in the price of the yellow metal was avoided and, in general, the balance was preserved. This was certainly helped by the agreement between the parties to impose a five-year moratorium on future gold sales.

2. Modern trends (2020–2024)

2.1 Features

Today, there are over 50 gold markets that operate 24/7. There are 19 in Asia, 11 in Europe, 14 in America, and 8 in Africa. On domestic markets, gold is sold in quantities ranging from 5 grams to 5 kilograms, while on international markets it is sold in 12.5 kilograms of 999 fineness. Payments are made in dollars per troy ounce of pure gold. Sellers include central banks, gold mining companies, and private owners. London and Zurich are the main international markets.

However, the role of gold should not be underestimated. Its importance is significantly increased in times of crisis, during wars, in conditions of economic and political instability. Under such conditions, gold does not cease to fulfill the role of emergency money with protective functions.

When inflation increases, there is a flight from unstable currencies. Then the price of gold increases. Interest in investment gold is very high, since the entire system is mired in debt, says Max Baklayan ¹, CEO of Tavex ². There is no reason for investment sentiment around gold to change and for a permanent decline to be observed, and quite the opposite – its price will rather grow.

The analyst recalls that the price of gold has reached 21 consecutive records this year, which is more than 2024, which was one of the best years for the metal. Central banks are fully aware of the situation and are returning gold as a class one asset. Until now, gold was

¹ <https://www.investor.bg/a/538-pazari/411667-nakade-shte-varvi-tsenata-na-zlatoto-sled-pa-zarnite-srivove>

² As the largest trader of investment gold in Northern Europe and an increasingly significant player in the market in Bulgaria and Southeastern Europe, Tavex has been an important member of the Tavex Group since 1991.

demonized by banks, but now it could help them, especially the United States. Currently, there is talk of a revaluation of gold and an audit of gold reserves.

Max Baklayan notes that since 1971 there have been three bull markets in gold, with the first psychological boundary being between 1971-2008, the second 2008-2020, while the third bull market began since the beginning of the Covid pandemic. Gold was then \$ 1,590 per troy ounce.

Goldman Sachs' new forecast is for gold to reach \$4,000 in 2026. After an initial decline caused by the shock of new tariffs imposed by Donald Trump in early April, the price of gold quickly recovered and re-established itself as a leading asset in conditions of market uncertainty. From a level of around \$3,000 per ounce, gold went through a stabilization phase and reached \$3,300 per ounce.

Financial institutions are presenting new forecasts for the price of gold. The first are the Swiss giants from UBS, which expect a price of \$ 3,500 per ounce by December this year. The forecast is also presented by the American investment bank Goldman Sachs, it is a little longer-term and more optimistic – \$ 3,700 by the end of the year and \$ 4,000 by the middle of 2026. According to Goldman Sachs, public monthly purchases of gold amount to about 80 tons, and for the first quarter of 2025, 70 tons are expected. Interest in exchange-traded gold funds is also growing, especially given the growing risk of recession and the rearrangement of global trade flows and supply chains. UBS emphasizes the role of gold as a safe asset during economic downturns and uncertainty and, like Tavex, emphasizes the role of central banks as the main buyer of gold in recent years.

In recent years, gold has experienced a new upswing driven by a combination of macroeconomic and geopolitical factors. Its price is expected to reach historic highs of over USD 2,000 per troy ounce in 2023–2024 (World Gold Council, 2024). There are four **key trends**:

- **Inflationary pressures** following the pandemic and large-scale fiscal stimulus are causing increased interest in gold as a hedging instrument;
- **Geopolitical uncertainty** – the war in Ukraine, tensions in the Middle East, and the US-China confrontation are increasing the search for “safe havens”;
- **Net purchases by central banks** – in 2022–2023, central banks are purchasing record amounts of gold, led by China, Turkey, India, and Russia;
- **De-dollarization** – in the context of declining confidence in the dollar, gold is establishing itself as a natural alternative for diversifying reserves.

2.2 Gold as a strategic tool for governments, central banks and private investors.

Over the past decade, many countries have been increasing the share of gold in their reserves. **China** has been gradually accumulating reserves, with its official gold reserves set to exceed 2,200 tonnes by 2024. **Russia** has sharply increased its holdings since 2014 to reduce its vulnerability to Western sanctions. **Turkey** and **India** is also among the most

¹ <https://www.iskra.bg/goldman-saks-s-nova-prognoza-zlatoto-dostiga-4000-dolara-prez-2026-g/>

active buyers, using gold to strengthen its external financial position. For central banks, gold serves three functions:

- **Diversification of reserves** – reducing dependence on the dollar and the euro;
- **Stability in crises** – a guarantee of liquidity and trust;
- **Political independence** – gold is a physical asset that cannot be easily frozen or blocked by sanctions.

Gold is also an important component in private investors' portfolios. In conditions of volatile stock markets and inflation, investment funds (ETFs on gold) and physical investments in bars and coins are growing. At the same time, gold is competing with other alternative assets – cryptocurrencies. Some analysts see Bitcoin as "digital gold", but practice shows that cryptocurrencies are far more volatile and cannot replace gold's traditional role as a stabilizing asset.

2.4 Limitations and challenges.

Despite its rise, gold has limitations. It does not provide a yield, unlike bonds or deposits. Its price is sensitive to movements in real interest rates. Storage and transportation require significant costs and infrastructure. These factors limit the possibility of gold being the basis of an entirely new international financial system. It is more of a **complementary asset** that enhances the stability of portfolios and reserves.

3. Perspectives

Gold is likely to continue to play an increasingly important role in international finance. Several trends support this prediction:

- **Currency fragmentation system** – as the dominance of the dollar decreases, gold serves as a universal asset accepted by all;
- **Development of digital forms** – initiatives are emerging to "tokenize" gold, allowing it to be used in blockchain ecosystems;
- **Growing demand in emerging economies** – with high inflation and weak currencies, gold remains a preferred asset for storing value.

The rise of gold reflects the search for stability in a climate of geopolitical and economic uncertainty. The metal is not an alternative to major currencies, but it is an indispensable tool for risk management and reserve diversification. Combining its traditional significance with modern technologies such as blockchain is likely to ensure its enduring presence in international finance well into the 21st century.

CONCLUSION

International finance is entering a period of profound transformation, in which four major trends – *dedollarization, deglobalization, decentralization, and the rise of gold* – are reshaping the global financial architecture. The intertwining of these processes creates a complex and multi-layered environment in which traditional mechanisms of stability and trust are being challenged and new forms of monetary and financial relations are taking shape at an increasing pace.

Dedollarization demonstrates the desire of countries and regional blocs to reduce their dependence on the US dollar, which has long served as the backbone of the international system. Although this process is slow and limited by the lack of full-fledged alternatives, it shows a trend towards greater diversification of reserves and the formation of a multipolar currency structure. The dollar retains its leading role, but is no longer the undisputed and sole center of global financial power.

Deglobalization and the fragmentation of financial flows represent a transition from universal interconnectedness to selective integration, in which geopolitical factors play an increasingly decisive role. The regionalization of capital markets and the creation of parallel infrastructures show that confidence in the “universal” nature of globalization is shaken. This brings both advantages (higher resilience and reduced vulnerability to global shocks) and disadvantages (higher transaction costs and the risk of deepening inequalities).

Decentralization through digital currencies and fintech transformations is the technological aspect of the changes. Central bank digital currencies promise to modernize payments, while DeFi and cryptocurrencies challenge the role of traditional intermediaries. This trend is two-sided – on the one hand, it provides innovation and efficiency, but on the other – it creates risks of instability and the need for new regulatory frameworks.

The rise of gold highlights the search for security in the face of inflation, geopolitical instability and declining confidence in fiat currencies. Gold cannot replace currencies, but it remains a universal tool for diversification and strategic independence. Interestingly, gold and digital assets can be combined through tokenization processes, which would unite traditional and modern approaches in international finance.

The interrelationship between these four processes suggests that the future financial system will be *multi-layered, multi-polar, and technologically integrated*. It will not be built on a single dominant currency or a single institutional framework, but on a collection of assets, technologies, and regional blocs. This will require a higher degree of coordination between international organizations, central banks, and regulators, as well as new mechanisms for managing global risks.

In conclusion, international finance is in a transition from a unipolar to a more fragmented but also more diverse world. The success of this transition will depend on the ability of states and international institutions to create a balance between innovation and stability, between globalization and regionalization, between traditional assets and new technologies. In this balance lies the future sustainability of the global financial system in the 21st century.

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INVESTMENTS IN ALBANIA AND THE LATEST TECHNOLOGICAL AND FINANCIAL ADVANCES

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Abstract

This research article aims to analyze the value of investments in Albania, the financial alternatives and also the cryptocurrencies as a topic that has gained particular importance in the last decade due to rapid technological and financial developments.

The main goal is to critically examine the potential of cryptocurrencies for Albanian investors, analyzing the benefits they can bring, but also the risks and limitations that accompany them in the Albanian economic and legal reality. In this context, the paper addresses not only the technical nature and functioning of cryptocurrencies, but also focuses on the current regulatory framework in Albania and the attitude of state institutions towards this phenomenon.

The authors in this paper will include a comparison with international experiences from other developing countries or with similar economic structures, to draw lessons that can be adapted to the Albanian context.

In conclusion, based on the analyses conducted, it is recommended that a sustainable balance be achieved between exploiting new opportunities and effectively managing the risks arising from this still volatile and developing market.

Keywords: Financial risks, Investment, Regulatory framework, Blockchain technology. cryptocurrencies

JEL classification: A10, E4, H8, K2, O2

INTRODUCTION

In recent years, cryptocurrencies have emerged as a significant financial phenomenon on a global scale, drawing interest from investors worldwide. This trend has also extended to Albania, where more Albanians – particularly the youth – are considering cryptocurrencies as a chance for rapid financial gains. While some investors have indeed realized substantial profits, it is crucial to highlight that this market is still highly speculative and prone to severe short-term value fluctuations.

These characteristics of cryptocurrencies underscore the necessity for caution when treating them as investment vehicles. This caution is especially pertinent within the context of the Albanian economy. Albania's financial market is relatively small, offering limited investment options for individuals. The local stock exchange is still in the early stages of

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development, and traditional investment avenues are largely restricted to bank deposits, government bonds, and real estate.

In this scenario, cryptocurrencies have emerged as an alternative investment that is particularly appealing to young investors and those enthusiastic about technology. Additionally, the Albanian diaspora and the increasing use of digital payments facilitate the perception of cryptocurrencies as a quicker and cheaper means of transferring value without relying on banks as intermediaries.

Nevertheless, the integration of cryptocurrencies into the Albanian economy comes with challenges despite the growing allure. The Bank of Albania and other financial institutions have repeatedly issued warnings, alerting the public to the risks involved with virtual currencies. They highlight concerns such as significant price volatility, the potential for money laundering due to transaction anonymity (which poses a concern for banks), and the lack of legal recourse as primary issues.

In recent years, the Albanian legal framework had not addressed the regulation of crypto assets, which left investors in a precarious legal situation. This scenario has been gradually shifting: in September 2020, Albania enacted its first law governing markets based on distributed ledger technology (DLT), commonly referred to as Law no. 66/2020. This legislation seeks to license and oversee entities involved in the issuance, trading, or storage of digital tokens and virtual currencies, positioning Albania as one of the first nations in the region to implement specific cryptocurrency laws.

Additionally, in June 2022, the Albanian Financial Supervisory Authority (AFSA) approved regulations concerning the licensing of cryptocurrency exchanges – this represents a pivotal step towards the full implementation of the law. At the same time, the Albanian government has proposed amendments to the law related to the taxation of profits generated from cryptocurrency investments, introducing a 15% capital gains tax starting in 2023.

In summary, these developments signal that the establishment of cryptocurrencies is gradually making its way into the Albanian market, where it is perceived not only as a financial innovation but also as a risk that requires management through suitable policy interventions.

The primary goals of this study are: (1) to evaluate the current extent of cryptocurrency utilization and investment in Albania; (2) to discover the advantages these assets present for investors and the economy (including investment diversification, capital gains, and financial inclusion); and (3) to examine the key risks involved (such as potential financial losses due to price volatility, cyber risks, fraud and Ponzi schemes, and threats to financial stability and economic integrity).

Ultimately, the purpose of the study is to offer practical suggestions for both individual investors and regulators, aiming to ensure that the potential of cryptocurrencies in Albania is utilized safely and effectively.

LITERATURE REVIEW

The available research on cryptocurrencies as investment opportunities is extensive on a global scale but still quite limited in specific contexts such as Albania. General analyses of crypto assets indicate that while they have the potential for substantial returns, they come

with considerable volatility and uncertainty. For example, Bitcoin – the most recognized cryptocurrency – has been identified as the top-performing asset over the last ten years, despite facing significant short-term price fluctuations (its value has fluctuated from roughly \$6,000 to \$60,000 within just a year). This volatility renders Bitcoin and other cryptocurrencies far more hazardous compared to traditional financial investments.

Several authors argue that virtual currency could be categorized as “digital gold,” suggesting it provides diversification advantages. However, empirical evidence indicates that the correlation of these assets with other markets tends to rise during crises, thereby limiting their diversification utility. Furthermore, in developing countries, literature suggests that cryptocurrencies are mostly utilized for remittances (due to their low transfer costs) and as a hedge against inflation in economies where local currencies are unstable. This global context provides a lens through which we can examine the potential opportunities and risks associated with cryptocurrencies in Albania.

Regarding Albania and its neighboring nations, academic studies on cryptocurrencies have not been exhaustive. One of the initial explorations of this topic was conducted by Nasto and Sulillari (2021), who found that the acceptance of cryptocurrencies for payments or as investment alternatives was virtually nonexistent in Albania due to legal and infrastructural challenges. Their findings indicated that prior to 2020, stringent regulations created significant barriers around investor activities in the nation, resulting in minimal cryptocurrency usage. Nevertheless, the authors point out that new legislative measures are gradually alleviating some of these constraints, creating a more conducive environment for the growth of the crypto market.

Leka and Kambo (2023) provide a significant contribution by examining the trends and obstacles associated with cryptocurrency trading in Albania, particularly in light of regulatory ambiguities. They note that while cryptocurrencies are slowly being adopted in the Albanian economy, their usage and influence are still limited when compared to larger nations. Their research investigates the legal status of crypto assets according to Albanian law and points out that regulatory bodies encounter challenges regarding both consumer protection and financial stability, as well as the prevention of money laundering. Specifically, Leka and Kambo stress the importance of a balanced strategy: on one side, regulators should take advantage of the possibilities presented by blockchain technology (such as fostering innovation in financial services and enhancing access for individuals without banking services); on the other side, they must manage the risks associated with tax evasion, illicit financing, and threats to economic stability.

In addition to academic research, reports from international organizations and industry sources provide valuable insights. The Moneyval (a Council of Europe body combating money laundering) has indicated in its regular assessments that the cryptocurrency sector heightens Albania's money laundering risks, suggesting that monitoring of these activities should be intensified. Similarly, the Financial Action Task Force (FATF) has placed Albania on its grey list of countries under observation, partly due to the challenges encountered in overseeing the use of virtual assets for money laundering.

Market reports also indicate that while the absolute number of Albanians using cryptocurrencies is low, there is a gradual increase in usage. A 2021 study revealed that Albania ranked second in the Balkans, following Greece, in terms of public ownership of

cryptocurrencies. This suggests that the interest level among Albanians is relatively high compared to neighboring countries; however, this conclusion should be approached with caution due to the absence of comprehensive official data.

The literature indicates that the benefits presented by cryptocurrencies in Albania are primarily associated with:

- (a) Diversifying investment options and achieving substantial financial gains;
- (b) Fostering technological advancements and the growth of fintech;
- (c) Enhancing financial inclusion for those lacking straightforward access to conventional banking; and
- (d) Streamlining cross-border money transfers, especially remittances from the Albanian diaspora.

Conversely, the principal risks identified include:

- (a) Significant financial risks for individual investors (the chance of capital loss due to market fluctuations);
- (b) Absence of legal safeguards and oversight mechanisms – until recently, cryptocurrencies have functioned in a legal “grey area” in Albania;
- (c) Systemic and reputational hazards, such as money laundering and fraud (e.g., Ponzi schemes masked as crypto investments), as well as their involvement in cybercrime; and
- (d) Macroeconomic consequences – if the adoption of cryptocurrencies escalates dramatically, it might undermine the effectiveness of monetary policy and financial stability, particularly without a robust regulatory framework.

The insights derived from the literature will influence the hypotheses and research inquiries of this study, along with the formulation of the research methodology.

METHODOLOGY AND DATA

This study employs a mixed-method strategy, incorporating both primary and secondary data collection, alongside quantitative and qualitative analyses. The primary methodological components are presented below:

1. Survey with Albanian Investors

As the principal source of primary data, a structured questionnaire will be administered to individuals in Albania who have invested in or shown interest in cryptocurrencies. The survey will be distributed online and via professional social networks, targeting a sample of no fewer than 200 respondents. The survey will gather demographic and financial details about the investors, their motivations for cryptocurrency investment (such as a desire for quick profits, diversification of portfolios, skepticism toward traditional banking, etc.), their knowledge and experience level regarding cryptocurrencies, and their assessment of key risks. Additionally, it will investigate attitudes towards market regulation – specifically, how aware investors are of the new law and regulatory actions, and whether they feel more safeguarded or hindered by them. The data will be statistically analyzed (utilizing tools like Excel or SPSS) to uncover central trends, correlations between variables (for instance, connections between age or education and the likelihood of investing in crypto), and differences among groups (experienced investors versus novices).

2. Statistical Market Analysis

As part of the quantitative section, the research will examine secondary data concerning cryptocurrency performance and related financial markets. This entails gathering time-series data for major cryptocurrencies (including Bitcoin and Ethereum) over the past years and contrasting them with traditional financial metrics (such as global stock indices, the Euro/Lek exchange rate, and interest rates in Albania, along with gold prices). The objective is to compare the risk-return profile of cryptocurrencies with other investment options accessible to Albanian investors. For example, metrics like average annual return, standard deviation (volatility), and potentially the Sharpe Ratio will be computed for Bitcoin and compared against other instruments (such as bank deposits or eurobonds). Furthermore, the research will investigate the correlations between cryptocurrency price fluctuations and local macroeconomic variables (where data is available), to determine if the Albanian market is influenced by or independent from global cryptocurrency trends. The findings will be illustrated with graphs and tables that depict patterns – such as the significant increase and subsequent drop in Bitcoin’s value during 2020–2022, compared to the relative stability of the Albanian Lek against the Euro.

3. Examination of the Regulatory and Institutional Framework

In addition to the empirical analysis, a qualitative assessment of legal and institutional documents will be carried out. This includes scrutinizing Law no. 66/2020 and associated by-laws (such as AFSA’s guidelines for licensing crypto exchanges) to grasp the requirements and limitations facing the cryptocurrency sector in Albania.

Statements and reports from the Bank of Albania, the Ministry of Finance, and international organizations (including Moneyval and the IMF) that focus on cryptocurrencies will also be evaluated. The aim is to comprehend the official viewpoint towards cryptocurrencies – from initial doubts to the gradual progression toward legalization and oversight – and how this position changes in response to market trends.

This qualitative evaluation will aid in interpreting the empirical results within the legal and policy framework of Albania. For example, if survey findings show investor hesitation or anxiety, the study will explore whether this arises from insufficient information or a lack of trust in institutions; or, if the use of crypto remains minimal, whether this can be attributed to the identified legal and infrastructure challenges.

4. Comparison with Similar Contexts

As part of the analysis, brief comparative references will be made to regional or similarly-sized developing economies (such as Western Balkan nations or countries with similar population and market features to Albania).

Examples like Kosovo (noted for its "crypto mining boom" followed by bans), North Macedonia (where cryptocurrencies were mainly unregulated until recently), as well as Slovenia and Estonia (recognized as success stories in blockchain implementation) will be examined.

These comparisons will offer insights into effective policies and challenges, which can be used to tailor best practices to the context of Albania.

Overall, this methodology provides a comprehensive and thorough foundation for the study. The survey data will capture the genuine views of investors, the statistical analyses will yield quantitative insights into risks and opportunities, and the review of literature and legislation will establish the interpretive framework. The integration of these aspects enhances the reliability of the findings and facilitates well-rounded conclusions, taking into account both financial and institutional dimensions of the subject.

RESEARCH RESULTS AND COMMENTS

The Use and Spread of Cryptocurrencies in Albania

Survey data is anticipated to verify that the current engagement of Albanians in the cryptocurrency market is relatively low compared to the overall population, although there is a rising trend. The majority of cryptocurrency investors are likely to be young individuals (aged 20–35), well-educated, and leaning towards careers in IT or finance. A significant number of these investors may have begun their investments during the global “boom” of 2020–2021, inspired by success stories and the rapid increase in cryptocurrency values.

Local analysts note that the adoption of cryptocurrencies in Albania has grown in recent years, primarily for value transfer (such as remittances from abroad) rather than for active trading. This trend can be attributed to the absence of licensed domestic platforms that would enable Albanians to easily buy or sell cryptocurrencies; as a result, many depend on global exchanges (like Binance, Kraken, etc.).

Preliminary findings also indicate that no local financial institutions currently accept cryptocurrencies directly, and there are no Bitcoin ATMs located within Albania. Consequently, the utilization of crypto as a payment method within the country is virtually non-existent. Thus, the primary function of cryptocurrencies in Albania at this time is as a speculative investment asset and an informal means of transfer, rather than a currency for actual economic transactions.

Opportunities – High Returns and Diversification

One important conclusion from the financial analysis is that Albanian investors who have taken the risk of investing in cryptocurrencies have been able to achieve returns that are substantially greater than those offered in the local traditional market.

Fig. 1, a graph illustrating the key performance and risk metrics for asset 1(Gold /Ounce) and asset 2(Bitcoin /Coin) 2015-2025:

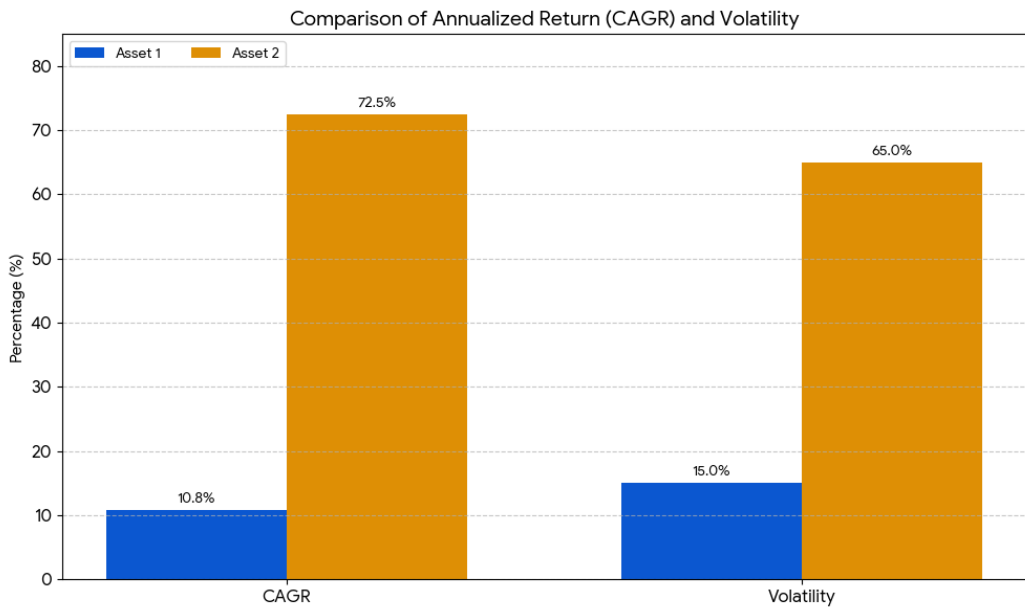


Fig. 1. Source(goldvs.net)

For example, if an Albanian investor had purchased Bitcoin at the start of 2019, by the end of 2021, their investment would have increased several times, as Bitcoin's value rose dramatically across the globe. Some privately managed portfolios in Albania have even reported returns reaching up to 35 times their initial investment within a few years (botasot.info), showcasing the remarkable profit potential. While this represents an extreme case, it underscores the high return possibilities that make cryptocurrencies an appealing investment option.

Another advantage identified in the findings is diversification. Investors who have their entire portfolios composed of bank deposits and real estate might enhance their average returns by allocating even a small percentage to cryptocurrencies, as this new asset class operates independently from the Albanian economy and typically exhibits different movement patterns than traditional investment instruments (at least under normal market conditions). This suggests that the investment risk typically associated with the domestic economy can be mitigated through the inclusion of cryptocurrencies.

Additionally, another potential opportunity mentioned is the application of blockchain not only in the finance sector but also in other industries, as noted in both the literature and by the respondents. Individuals with a technological background, particularly those knowledgeable in the field, have shown interest in innovations such as launching a blockchain startup, introducing new Initial Coin Offerings (ICOs), or fostering collaboration between cryptocurrencies and Albania's fintech sector. This indicates that while there is a potential for financial profit, the primary opportunity lies in the transfer of technological expertise and the development of an innovative ecosystem centered around Distributed Ledger Technology (DLT), which is viewed as a technological advantage.

Risks – Volatility, Legal Uncertainty, and Security Issues

The examination of the data supports the view that cryptocurrencies remain the most volatile assets available. Throughout the studied timeframe, the global crypto market exhibited significant fluctuations. For example, the market capitalization soared to 2 trillion USD in May 2021 but plummeted to below 1 trillion USD in just four months due to regulatory actions in China and other factors, resulting in substantial losses for uninformed investors.

Investors in Albania have encountered similarly drastic swings. A significant portion of the survey respondents are likely to indicate that they incurred losses in their crypto investments, especially those who bought at historical price highs. Therefore, volatility emerges as the primary risk factor – recognized from both the perspective of investors (with the vast majority labeling crypto as a “risky investment”) and through statistical measures (notably, Bitcoin’s return standard deviation significantly exceeds that of traditional currencies or gold).

Another significant risk is the unpredictability surrounding regulations and legalities. Some investors voice worries regarding ambiguous legal frameworks: the lack of domestic financial institutions that support crypto transactions forces them to rely on informal methods (like bank transfers to foreign exchanges) that could be restricted or conflict with local banking regulations. Until recently, the Bank of Albania barred commercial banks from facilitating transfers to crypto exchanges, rendering it nearly impossible to legally acquire cryptocurrencies within Albania. Although a new legal framework intends to resolve this issue through the licensing of local exchanges, its complete implementation had not occurred at the time of writing. Consequently, regulatory ambiguity continues to pose a major challenge and risk – investors remain uncertain about the future of their holdings if the government unexpectedly enacts restrictions or taxes.

On a larger scale, risks to the national economy are becoming increasingly apparent. Institutions fear that growing interest in cryptocurrency may result in capital flight from the traditional banking system and overseas, undermining the efficacy of monetary policy. Additionally, the risk of falling victim to fraudulent schemes presents a genuine threat: there have been instances where dubious international platforms attracted Albanian citizens with promises of remarkable returns, exploiting the enthusiasm following the legalization of crypto. For instance, after the cryptocurrency law was enacted in 2020, there was a surge in aggressive marketing from unregistered entities (some even located abroad, such as in South Africa) promoting questionable investment opportunities, putting unsuspecting citizens at risk of scams. This situation highlights the pressing need for financial education.

Comments and Interpretation of Findings

The findings from the previously mentioned studies suggest that the volatility associated with cryptocurrencies presents both an opportunity and a risk. To some extent, blockchain technologies and cryptocurrencies – and their entire ecosystem – embody modernity. They serve as contemporary observers who engage local investors in global financial markets, thereby connecting the high potential returns of these markets to the typically low domestic investments of the former. Furthermore, they foster discussions regarding the need to

enhance financial infrastructure with technology, particularly in investment banks. One reason this technology is a key focus for the Albanian government is due to the country's small economy coupled with a significant population living abroad; for instance, by attracting blockchain enterprises or establishing Albania as a hub for financial innovation in the region – an ambition articulated by the Albanian government itself.

Conversely, the findings indicate that the inherently risky nature of the cryptocurrency landscape, despite its potential advantages, tends to overshadow them. If not adequately regulated, cryptocurrency investments could result in significant losses for investors and lead to a decline in trust within the financial sector, damaging its public reputation. Moreover, the risks to financial integrity, such as money laundering, are tangible and not merely theoretical. Albania has faced numerous challenges related to the informal economy and organized crime, and the cycle of illicit activities could expand if cryptocurrencies are not effectively monitored. With the country under international observation regarding its adherence to anti-money laundering and know-your-customer regulations, it's clear that embracing cryptocurrencies must go hand in hand with reinforcing control measures appropriately.

A specific worry for small and individual investors emerges. Our survey indicates that many people venture into the cryptocurrency market with unrealistic expectations, often fueled by success stories circulating on social media. The perception of crypto as a “get-rich-quick scheme” reveals a significant misunderstanding of the associated risks. This tendency to overestimate opportunities while underestimating risks creates a perilous scenario that might lead to hasty investment choices. This issue is particularly pertinent in Albania, where financial literacy levels remain low and investor protection frameworks are still being developed.

In conclusion, the current findings emphasize that cryptocurrency use in Albania is still in its nascent phase. There exists enthusiasm and some individual success stories, but also uncertainty and structural hazards. Transitioning from a situation where investing in crypto resembles a “game of chance” to one where it becomes a well-informed and regulated investment option necessitates further actions from both the investing community and public officials. These considerations are further elaborated in the recommendations section below.

CONCLUSIONS

This research highlights that cryptocurrencies offer both notable opportunities and substantial risks as an investment option in Albania.

Opportunities

Digital currencies may provide Albanian investors with significantly greater returns compared to conventional domestic investments, opportunities for diversification of their portfolios that extend beyond the local economy, and access to an emerging technology that is revolutionizing global finance. For Albania's overall economy, the integration of crypto assets might encourage financial innovation and draw in new investments, positioning the

nation within modern financial advancements. The regulated adoption of cryptocurrencies in the future could also streamline remittance transfers and offer alternatives in a banking system where service fees are still relatively high.

Risks

Significant price swings can lead to substantial financial setbacks for novice investors or those who invest beyond their financial capacity. A lack of experience and information raises the chances of making poor choices or being deceived by fraudulent schemes. On a larger scale, unchecked cryptocurrency adoption could pose challenges to monetary policy and financial stability. Albania needs to remain alert to the risk that the crypto market might serve as a conduit for money laundering or other illegal financial activities, making the rigorous enforcement of AML/CFT standards critical.

Main Recommendations

For Individual Investors

- Approach cryptocurrency investments with great care, only using a portion of your savings that you can afford to lose.
- It is crucial to diversify; cryptocurrencies should not constitute the majority of your investment portfolio.
- Ongoing education about the financial market and underlying technology is important.
- Newcomers should begin with very small investments to gain practical experience.
- It is highly advisable to read pertinent literature and participate in courses or webinars focused on cryptocurrency security and functionality.

For Policymakers and Regulators

- Proceed with the implementation of the regulatory framework with clarity and dedication.
- Complete the secondary legislation and enhance the institutional capabilities for the licensing and oversight of crypto platforms.
- Make certain that the licensing procedure is rigorous yet accessible to credible domestic and international firms.
- Align national laws with European standards (for instance, the MiCA Regulation).

Monitoring and Preventing Abuse

- Enhance systems for tracking questionable transactions.
- Provide targeted training and improve collaboration with global organizations.
- Initiate public awareness initiatives and develop official websites that list authorized entities.
- Create a regulatory sandbox for blockchain and fintech startups to facilitate supervised experimentation.

Education and Public Awareness

- Incorporate digital finance subjects into university programs.
- Host public workshops and social media initiatives to raise awareness about cryptocurrencies.

- Enhancing financial literacy is crucial for the success of innovative investment methods.

To sum up, cryptocurrencies in Albania should not be viewed as either the “heroes” or the “villains” of the financial system, but as a novel tool with significant potential advantageous if handled with care and perilous if ignored. By adopting a balanced strategy that encompasses effective regulation, public awareness, and collaboration between the public and private sectors, cryptocurrencies can be woven into the economy in a manner that optimizes opportunities while reducing risks. Initiatives in this area will enable Albania to take advantage of the digital financial revolution, while steering clear of its dangers or being left behind.

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THE ECONOMIC IMPACT OF TRANSPARENCY AND THE FIGHT AGAINST CORRUPTION IN PUBLIC ADMINISTRATION

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Abstract

This study aims to evaluate how transparency mechanisms affect corruption reduction within the Albanian public administration and to pinpoint the main deficiencies in applying the current legal framework. Corruption in administration is not only an economic issue but also leads to social and political repercussions: it erodes citizens' confidence in public institutions, disrupts market competition, and obstructs sustainable development. In this regard, transparency is recognized as the primary method for fostering public trust, enhancing efficiency, and decreasing chances for misconduct. As part of this research, a comprehensive review of literature and analysis of both national and international legal documents was conducted, guided by UNCAC principles and OECD recommendations. Over recent decades, public administration has undergone significant changes, prompted by increasing citizen expectations, demands for efficiency, and the necessity of aligning with international transparency standards. The idea of administrative transparency is intricately connected to the core principles of good governance, which encompass accountability, access to information, and citizen engagement. In Albania, public administration reforms, initiated in the early 2000s, have sought to modernize services and reduce corruption levels, yet they frequently face challenges such as incomplete implementation of legislation and entrenched clientelistic behaviors. According to Transparency International, following the enactment of Law No. 119/2014 "On the Right to Information" and Law No. 71/2016 "On the Prevention of Corruption and Declaration of Assets," Albania has made significant progress towards establishing transparency, though the actual outcomes often fall well short of the intended goals. Examining the context of transparency and anti-corruption efforts is crucial for understanding the factors behind implementation challenges, the effectiveness of control measures, and the potential for hastening reforms within the Albanian public administration.

Keywords: transparency, corruption, public administration, economic impact

1. INTRODUCTION

Transparency in public administration refers to the unrestricted access that citizens have to information regarding decision-making processes, policies, budgetary allocations, and the outcomes of public services (European Commission, 2019). It encompasses not only the dissemination of data but also allows citizens and the media to track administrative actions and involves the establishment of accountability frameworks (Bertot, Jaeger & Grimes, 2010). In academic discourse, transparency is typically categorized into three primary dimensions: administrative, fiscal, and informational (Piotrowski & Borry, 2014).

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Administrative transparency pertains to the ability of public institutions to apply clear regulations and documented processes, which enable citizens to comprehend how decisions are made. This includes making policies available online, standardizing forms, and publishing manuals for services (Grimmelikhuijsen et al., 2013). Conversely, fiscal transparency relates to the disclosure of information concerning local and national budgets, expenditures of public institutions, and financial reporting. Its goal is to guarantee that all payment or contract awarding criteria are public and can be verified by external parties (World Bank, 2018).

The idea of good governance highlights that transparency is a crucial factor in building trust between government bodies and the public. As stated by the Organization for Economic Cooperation and Development (OECD, 2018), good governance is closely associated with open access to information, accountability, active citizen engagement, and the effectiveness of services. In the absence of transparency, decision-makers may function with imbalanced information, fostering an environment conducive to corrupt activities. Transparency enables citizens to oversee government expenditures, spot inconsistencies between what is claimed and what actually occurs, and exert pressure to combat the misuse of resources (Transparency International, 2020).

A World Bank (2021) study on countries in the Western Balkans concludes that those nations that have made significant advancements in fiscal and administrative transparency have seen a reduction in perceived corruption levels by approximately 15% over the past five years. This shows that making budget data public and sharing information about government contracts are critical in minimizing opportunities for misappropriation. In Albania, Law no. 119/2014 “On the Right to Information” (Republic of Albania, 2014) is aimed specifically at ensuring that citizens have access to official documents and data. Nevertheless, its practical application frequently encounters challenges, including delays in information publication, insufficient technological resources, and resistance from institutions (Hysi & Kola, 2019).

1.1. Benefits of transparency for administration and society

Transparency at the institutional level offers a variety of advantages. Firstly, it enhances the internal efficiency of administration because documented and available procedures reduce the time needed to complete tasks and decrease the likelihood of work duplication (Bertot et al., 2010). Secondly, by making performance measurement results (service indicators) publicly available, managers can pinpoint weaknesses and optimize the management of both human and financial resources (European Commission, 2019). Thirdly, for citizens, transparency amplifies opportunities for active involvement in decision-making processes, as they receive detailed information regarding fund distribution and can suggest amendments or enhancements.

In Albania, a study conducted in 2022 on citizens' trust in institutions revealed that in local government units with more thorough reporting on budgets and public contracts, trust levels were about 20% higher compared to municipalities where information was not disclosed regularly (Transparency International, 2023). This highlights the necessity of fostering a transparent relationship between administration and citizens and supports the call for policies that bolster institutional capabilities to manage information professionally and free

from political bias. In practice, public institutions may encounter obstacles that are structural, cultural, and technological. To begin with, insufficient technological infrastructure, such as outdated IT systems and a lack of trained personnel for database management and cybersecurity, hampers timely publication of data in suitable formats (Hysi & Kola, 2019). Secondly, the cultural barrier involves a reluctance to change within the administration, where officials may feel vulnerable to public scrutiny and thus prefer to interpret the law regarding the right to information selectively (Commissioner for the Right to Information, 2022). Lastly, the absence of a cohesive national strategy for data publication results in various institutions operating independently, lacking uniform standards for information quality and updates (OECD, 2020).

To overcome these hurdles, the most progressive countries in the region have implemented explicit protocols for data management, initiated continuous training for administrative personnel, and put in place sanctions for institutions that fail to periodically disclose information (European Commission, 2019; OECD, 2020).

2. The concept of corruption in relation to transparency

Corruption broadly refers to the inappropriate use of public authority for personal benefit, encompassing economic, political, or social gains (Transparency International, 2020). The United Nations (UNODC, 2018) characterizes corruption as “illegal, deceptive, or dishonest actions or interference arising from the exploitation of public power for individual benefit.”

Corruption leads to various impacts at both macro and micro levels. At the micro level, it diminishes the quality of public services (World Bank, 2021). At the macro level, it hampers economic development as it encourages inefficient resource distribution, diminishes competition, promotes informality, and drives away foreign investment (Mungiu-Pippidi, 2015).

From a cost-benefit analysis standpoint, corruption fosters a cycle that reinforces itself: individuals with political connections secure lucrative contracts and launder money, while citizens seeking legal recourse often find it pointless and refrain from reporting corrupt activities (Rose-Ackerman, 1999). This increases the perception that corruption is unavoidable, diminishing public engagement and fostering a culture of mistrust in governmental systems.

In public administration, the most prevalent forms of corruption include:

1. Bribery, which involves giving or receiving unlawful benefits by a public servant in exchange for a service or decision. This can range from minor payments for public health services to offering expensive gifts to secure multi-million dollar contracts (Klitgaard, 1988). Transparency International (2020) reports that approximately 28% of Albanian citizens have admitted to paying bribes for public services in the previous year.

2. Nepotism and clientelism, which favor relatives, friends, or party associates for specific jobs, promotions, or advantages, regardless of their qualifications. Such practices at the local level undermine the morale of qualified staff and cultivate a non-participatory environment, as decisions are made outside the realm of meritocracy (Rose-Ackerman, 1999). A study conducted by the College of Economic Sciences (2021) revealed that in

40% of local government hiring cases, positions are filled based on political recommendations.

3. Conflict of interest arises when a public official makes decisions on issues where they or their family members have a financial stake. For instance, a minister might choose their own private company to offer consulting services for state contracts, creating an unfair edge for themselves. Law no. 71/2016 “On the Prevention of Corruption and Declaration of Assets” mandates officials to disclose their assets and financial interests; however, the practical and effective enforcement of this law frequently falls short (Republic of Albania, 2016).

4. Misappropriation of public funds refers to the illegal use of budgetary resources, such as subsidizing politically affiliated businesses, leveraging state funds for personal gain, or making politically motivated appointments to public boards. According to the annual report from the High Inspectorate for Declaration and Control of Assets (2022), around 12% of local institutions lack clear financial management regulations, facilitating such practices.

5. Corruption in public procurement is commonly linked to significant high-level corruption, as the financial stakes are often considerable. Typical forms include: splitting contracts through opaque procedures, establishing excessively favorable criteria for specific competitors, or dividing tenders into smaller contracts (split tendering) to bypass legal thresholds (Brixi, Lust & Woolcock, 2015). A study by the Open Society Foundation (2021) on public procurement in Albania found that 37% of public contracts were awarded after predetermined deadlines and without full transparency regarding the involved parties.

3. The impact of corruption and transparency on economic development

Corruption within public administration not only undermines economic productivity but also generates social instability. When corruption is perceived as high, this results in a drain of both human and financial capital through emigration, as skilled individuals opt to pursue their careers abroad due to a lack of trust in the system (EU Neighbourhood Info Centre, 2022). Conversely, the additional expenses for small and medium-sized enterprises that must pay bribes for licenses or inspections result in increased prices for consumers and diminish competition.

In nations where corruption is prevalent, elevated poverty levels and social disparities are closely associated with missed investment opportunities and escalated government expenditure. According to the OECD (2018), nations with a perceived corruption level above 50% on this index experience economic growth that is 1.5% to 2% lower than those with an index score below 30%. This indicates that combating corruption is not only a moral obligation but also an essential economic consideration.

3.1. The Scandinavian model for administrative transparency

Nordic nations, including Denmark, Norway, and Sweden, have consistently been ranked among the most transparent countries globally, as indicated by the Corruption Perceptions Index (Transparency International, 2024). Their achievements can be attributed to several crucial elements:

a. Well-defined laws and proactive access

Sweden effectively upholds the principles of "open government" via the Access to Documents Act (Offentlighetsprincipen), which has been in place since the 19th century. This

law dictates that all documents generated by government entities are public, allowing citizens to request copies online at no cost, aside from negligible operational expenses (Piotrowski & Borry, 2014). This principle of "transparency as a norm" minimizes the necessity for formal information inquiries and is applied across all administrative tiers (OECD, 2018).

b. Distinct open data platforms

Norway and Denmark have established centralized websites (data.norge.no and data.dk) where governmental institutions publish datasets in accessible formats (CSV, JSON). With the use of open APIs, both citizens and professional reviewers can create civic applications, analyze expenditures, and track tenders online, thereby lowering technological and bureaucratic obstacles (OECD, 2018).

c. Independent monitoring and auditing bodies

The Auditors General in Scandinavian nations function independently and are required to report directly to parliament. Their findings, which encompass performance assessments and reports on financial discrepancies, are quickly published on government websites along with the official responses from the institutions under review (European Commission, 2019).

d. Institutional culture and civic education

Awareness extends beyond mere legislation: students are educated about their rights to access information and the importance of civic oversight regarding public spending from an early age. This cultivates a foundational layer of informed "watchdogs" who view transparency as a societal norm (Bertot, Jaeger & Grimes, 2010).

This blend of legal, technological, and cultural components has led to perceived corruption levels remaining below 5 points out of 100 on the Transparency International 2024 index, alongside long-lasting social cohesion that safeguards the enforcement of high integrity standards.

4. Legal measures to prevent corruption

At the global level, the United Nations Convention against Corruption (UN Convention against Corruption, 2004) and the OECD principles offer specific recommendations on the measures that should be adopted, including transparency in financial expenditures, asset declarations, safeguarding whistleblowers, and implementing independent audit systems. Albania ratified this convention in 2008, thereby committing to enforce its provisions (UNODC, 2018).

On the national level, Law no. 71/2016 "On the Prevention of Corruption and the Declaration of Assets" (Republic of Albania, 2016) sets forth the ban on conflicts of interest, mandates the creation of a list of assets to be disclosed, and imposes penalties on violators. This law designates the High Inspectorate for the Declaration and Control of Assets (HIDAC) as the primary authority tasked with monitoring and overseeing the assets of high-level officials. Nevertheless, the annual reports from HIDAC (2022) indicate that approximately 30% of officials required to declare their assets have failed to do so, and the insufficient resources for investigating non-declaration obstruct effective penalization.

4.1. Albanian Legal Framework for Transparency and the Fight against Corruption

In Albania, the primary legislation that forms the basis of the national legal framework for transparency and combating corruption consists of: (1) Law no. 119/2014 “On the Right to Information” and (2) Law no. 71/2016 “On the Prevention of Corruption and the Declaration of Assets”. Each of these laws focuses on different elements of open governance, but together they establish robust legal frameworks for accountability and the prosecution of misconduct in public administration.

4.1.1. Law on the Right to Information (Law No. 119/2014)

Law No. 119/2014, commonly referred to as the “Law on the Right to Information,” came into effect on 1 October 2014 and grants every citizen, whether individually or in groups, the entitlement to access public information held by state entities (Republic of Albania, 2014). This legislation lays the groundwork for fostering a transparent administration by mandating public bodies to actively publish documents, reports, and information deemed important for the public interest.

The Commissioner for the Right to Information and Personal Data Protection is the independent body responsible for overseeing the enforcement of Law No. 119/2014 (Commissioner for the Right to Information, 2022). This institution is empowered to issue binding decisions against agency refusals to provide information, carry out inspections, request regular reports, and impose administrative penalties on those who violate the law. According to the Commissioner's annual report for 2022, more than 4,500 complaints were filed regarding denials or failures to respond to information requests (Commissioner for the Right to Information, 2022). Of these, approximately 65% were deemed justified, resulting in various institutions being required to publish the requested information within the legally mandated timeframes. Nonetheless, the absence of a standardized electronic system for logging and monitoring requests poses a challenge, often turning into an administrative hurdle for citizens who may not be familiar with the procedures involved (Hysi & Kola, 2019).

Facilitating access to decisions regarding procurement, public contracts, or tenders acts as a deterrent against corruption. When citizens, monitoring organizations, and the media obtain insights into the financial activities of public institutions, it generates public pressure to ensure that officials are held accountable (Bertot, Jaeger & Grimes, 2010). A review by Transparency International (2023) indicates that in municipalities where tenders and financial reports are regularly disclosed, the public perception of corruption decreases by 18% compared to those that do not provide such updates (Transparency International, 2023).

4.1.2. Law “On the Prevention of Corruption and Declaration of Assets” (Law No. 71/2016)

Law No. 71/2016, enacted on 23 June 2016, outlines the regulations for preventing corruption in public administration and sets forth the requirements for senior state officials to declare their assets (Republic of Albania, 2016). The purpose of this legislation is to create clear standards to prevent conflicts of interest, identify abuse of office, and establish oversight mechanisms that ensure accountability.

The ILDCP was created as an autonomous agency that functions under the jurisdiction of the Albanian Parliament and regularly reports to parliamentary committees regarding issues of corruption and the assets of officials (ILDCP, 2022). This inspectorate is granted access to state registers (such as tax, property, and banking) to verify the declared information.

Nonetheless, the enforcement of Law No. 71/2016 encounters considerable obstacles. Firstly, the insufficient financial and human resources allocated to the ILDCP have led to delays in verifications and the inability to promptly address any suspected cases (Transparency International, 2023). Secondly, the belief that the process is selective, with "high-ranking political officials" facing less rigorous scrutiny, has resulted in diminished trust among citizens and civil society observers (Fakol, 2020).

By mandating the declaration of assets and oversight by the ILDCP, the law seeks to instill a sense of responsibility in officials; it promotes the idea that officials should avoid informal dealings for personal gain. When it is evident that senior officials have evaded audit mechanisms, it is believed that the likelihood of sanctions will discourage misconduct. An analysis conducted by Transparency International (2023) indicates that in 60% of instances, officials who reported possessing assets that did not align with their official income underwent administrative or criminal investigations. This has contributed to an increase in public trust in institutions, although significant challenges persist.

4.2. Legal Framework and International Practices

In a world that is interconnected and globalized, combating corruption and fostering transparency cannot be limited to national boundaries. The United Nations Convention against Corruption (UNCAC), the benchmarks established by the Organization for Economic Co-operation and Development (OECD), and other international norms have provided guidance for nations aspiring to develop effective anti-corruption frameworks.

4.2.1. United Nations Convention against Corruption (UNCAC)

The United Nations Convention against Corruption, which was adopted by the UN General Assembly on 31 October 2003 and came into effect on 14 December 2005, is the first comprehensive global legal framework addressing various dimensions of corruption, including prevention, prosecution, international collaboration, and the recovery of assets (UNODC, 2018). Almost 190 nations, including Albania, which endorsed the convention in 2008, are signatories to this agreement (UNODC, 2018).

The UNCAC outlines a set of compulsory commitments for its parties:

1. **Prevention:** Nations are required to implement anti-corruption strategies, such as laws governing asset declarations, the creation of independent oversight bodies, training programs for public officials, and awareness campaigns for citizens (UNCAC, Articles 5–14).
2. **Criminalization of corruption-related activities:** States must legally prohibit both active and passive bribery, misuse of authority, embezzlement of public funds, money laundering, and involvement with criminal groups (UNCAC, Articles 15–42).

3. International cooperation: This encompasses extradition, mutual legal assistance, sharing information for criminal inquiries, and the recovery of stolen assets (UNCAC, Articles 43–59).

4. Asset recovery: Countries are obligated to put in place mechanisms for identifying, freezing, confiscating, and returning assets obtained through illicit means (UNCAC, Articles 52–59).

The UNCAC incorporates a peer review system, in which nations periodically report their implementation progress (UNODC, 2018). Albania has submitted four reports to the UNCAC sub-mechanism and has received evaluations regarding the implementation of preventive measures; however, it has been noted that there are deficiencies in its criminal investigation processes and international cooperation (UNODC, 2021). Nonetheless, the convention has contributed to the adaptation of national legislation, such as Law No. 71/2016, aimed at aligning the country's legal framework with international standards (Republic of Albania, 2016; UNODC, 2021).

4.2.2. OECD Principles and Guidelines

The Organisation for Economic Co-operation and Development (OECD) has established a set of guidelines and recommendations aimed at addressing corruption, which are primarily found in the “Anti-Bribery Convention” (1997), “OECD Guidelines for Managing Conflict of Interest in the Public Service” (2003), and the ongoing publication “Government at a Glance.” These recommendations from the OECD seek to provide a framework for both member and non-member nations to develop effective prevention strategies, monitoring systems, and tools to enhance integrity in public governance (OECD, 2020).

The OECD highlights four fundamental principles for promoting transparency and combating corruption in governance (OECD, 2017, 2020):

1. Integrity and public ethics: this involves establishing and enforcing codes of conduct for public officials, forming ethics committees, and offering continuous training (OECD, 2020).

2. Conflict of interest management: this is executed through regular asset disclosures and banning actions where officials have personal interests that may conflict with their public responsibilities (OECD, 2017).

3. Enhancing transparency and information accessibility: countries are encouraged to develop open data portals and publish data related to contracts, budgets, and administrative decisions in machine-readable formats (OECD, 2018).

4. Institutionalizing monitoring and auditing mechanisms: this includes creating independent anti-corruption bodies, bolstering both internal and external audit functions, and encouraging civil society's involvement in monitoring public activities (OECD, 2020).

The OECD has advocated for the implementation of “Integrity Pacts” in public procurement, wherein relevant parties (contracting authorities, economic operators, and independent monitors) enter into agreements to oversee every phase of the tendering process and the execution of contracts (OECD, 2017). This method has seen successful application in multiple Central European nations, leading to fewer complaints and greater fairness in procurement (OECD, 2017).

RECOMMENDATIONS AND CONCLUSIONS

The economic consequences of combating corruption cannot be influenced by immediate outcomes or specific policy areas; it necessitates a lasting, profound, and collaborative effort in which every legislative participant, public servant, citizen, and oversight organization has its part and accountability.

To tackle the issues of corruption and transparency in public administration, an integrated strategy that combines legal, technological, and cultural measures is essential. In the realm of technology, investments must be directed toward enhancing the infrastructure of small municipalities and regional entities. This includes providing secure servers, stable internet connections, and extensive training for local personnel on utilizing digital platforms. Additionally, standardizing data formats through a national technical guide will facilitate easier reprocessing and automatic comparison of datasets by citizens, media, and oversight organizations.

Establishing sustainable collaboration with civil society and the media should be embedded through long-term funding and shared platforms. An annual forum should be created where oversight organizations, investigative journalists, and public employees can share their findings and address challenges, allowing all stakeholders to work from the same information and within a clear strategic framework. Civil society and the media are vital players in this initiative. Oversight organizations and investigative journalists bring to light the vulnerabilities of the system and publicize them, thereby applying immediate pressure on officials.

The significance of transparency and its mechanisms in combating corruption in public administration is acknowledged through a legal, technological, institutional, and cultural examination, which reveals various challenges that obstruct the effective application of open government principles, as well as concrete avenues for enhancement.

Cultural perceptions within public administration represent possibly the most challenging hurdle. To cultivate an environment where transparency is regarded as a core value rather than an impediment, a fundamental shift in how public officials perceive their responsibilities is critical. Incorporating open government principles into codes of conduct, performance evaluations, and career advancement systems can aid in cultivating a professional culture that embraces accountability as part of everyday operations.

Examining the practices of Scandinavian nations alongside their Eastern Balkan neighbors shows that a mix of proactive legislation, advanced technology, and a robust civic culture yields substantial outcomes.

An integrated strategy is advocated, wherein institutions, citizens, and non-governmental organizations collaborate within a transparent network of communication and action. This network should be bolstered by ongoing investments in technology, professional development, and awareness initiatives, as well as enhancing the credibility of whistleblowers and reinforcing penalties. Only through these means can a solid legal framework be translated into a reality where transparency and accountability are integral to the daily functioning of administration and the expectations of citizens.

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THE OVERLAPPING JURISDICTIONS IN CONSUMER ISSUES IN ALBANIA AND THE CHALLENGES TOWARDS AN EFFECTIVE PROTECTION. THE ROLE OF CONSUMER PROTECTION COMMISSION

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Abstract

The obligation of the Albanian State to protect consumers emerged after the 1990s. The signing and implementation of the Stabilization and Association Agreement (SAA) required the state to establish a comprehensive legal framework for consumer protection. Albania has implemented a decentralized model of consumer protection, where responsibilities are distributed across various ministries, authorities and agencies.

This article seeks to examine the overlapping jurisdictions of public institutions in matters relating to the collective interests of consumers. The absence of coordinated action between these institutions in addressing consumer protection issues diminishes the efficacy of public safeguards, as each institution tends to prioritize its own legal framework and policy objectives, rather than adopting a unified approach.

The Consumer Protection Commission functions under the Ministry responsible for trade, so its autonomy and effectiveness in decision-making are significantly constrained. For an extended period, the Commission has operated below its full capacity and has been hindered by a chronic shortage of human resources.

In the context of ongoing legislative reforms driven by European integration, this article advocates the establishment of a consumer protection institution modeled as an independent authority, such as a Consumer Protection Authority/ Commissioner or Ombudsman. Such an institutional model would effectively address the existing issues related to the fragmentation of competencies, insufficient inspection mechanisms, limited human resources, and the lack of systematic price monitoring. By consolidating these functions under a unified, independent body, it would ensure more comprehensive and efficient consumer protection, aligning with European standards and enhancing the state's ability to safeguard consumer rights.

Keywords: consumer protection, overlapping jurisdiction, Consumer Protection Commission, collective interests.

JEL classification: K3

INTRODUCTION

The development of consumer protection in Albania is a relatively recent phenomenon, emerging prominently after the 1990s. Under the communist regime, private property was not recognized, and the economy was centrally planned, with no concept of market

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competition or product diversity. Within this system, ideas such as consumer rights, product quality, and standards were largely unfamiliar and rarely discussed.

Following the transition to a market-oriented economy, Albania introduced private property rights, embraced free competition, and gradually recognized the concept of the consumer. This shift required not only legislative reforms but also the establishment of institutions capable of enforcing consumer rights. The signing of diplomatic and trade agreements with other countries, including the European Economic Community, and particularly the Stabilization and Association Agreement (SAA) in 2006, created both the need and the legal obligation for Albania to adopt a comprehensive consumer protection framework.

Significant progress has been made in recent years, though implementation varies across sectors. Reports from the European Union indicate that enforcement and regulatory practices are more advanced in some areas, and less in others. As Albania moves toward closing all EU accession negotiation chapters by 2027 and aims for full membership by 2030, aligning national legislation with the EU *Acquis Communautaire* remains a strategic priority.

Effective consumer protection requires clear public policies, well-functioning institutions, adequately trained public employees, and an informed, responsible consumer. However, judicial practice in Albania is still underdeveloped in the field of consumer protection and remains limited in scope (Teliti, Kontratat Konsumatore (Kredia Konsumatore dhe Kontrata e paketave te udhetimit), 2013, p. 43). Consumer-related cases are generally handled within the framework and the general provisions of the Civil Code, rather than through specialized consumer law. Only in recent years has the School of Magistrates begun offering continuous training focused on consumer protection.

This paper examines the challenges of the protection of consumer interests, with particular emphasis on collective rights and the role of the administrative jurisdiction. The ultimate goal is to highlight pathways toward a more effective, structured, and EU-aligned system of consumer protection in Albania.

THE ADMINISTRATIVE JURISDICTION

Consumer protection in Albania is structured both horizontally and vertically, while also considering the subject matter of consumer legal relations.

A consumer legal relation is a fundamental legal concept that distinguishes this type of relationship from general civil legal relations, specifically from contract relation under Civil Law. Defining these elements in detail and specifying the nature of this relationship within the context of consumer relations, legitimizes the application of the legal framework for consumer protection in this field, separating it from the general regulation provided in the Civil Code.

Consumer legal relations are the relationships established between traders and consumers, which are governed by legal norms. These norms regulate goods and services and define the civil rights and legal obligations arising between traders and consumers (Teliti, 2023).

Law no. 9902, dated 17.04.2008 “On Consumer Protection” as amended (Law on Consumer Protection, 2008), underlines that *this law covers all types of relationships between*

traders and consumers that pertain to consumer goods or services. The application of the provisions of this law does not prejudice the application of legal provisions regulating specific sectors, according to the applicable legislation. The provisions of this law also apply to matters not regulated by special legislation.

The law provides enhanced protection for consumers, aiming to establish a balance between the consumer and the trader. For this reason, it is necessary to clearly define the scope of application, identify the parties involved, specify what constitutes a good or service, and outline the rights and obligations of both consumers and traders within this legal relationship.

Consumer legal relations involve transactions concerning goods and services. Goods can be divided into food products and non-food products, reflecting the different regulatory and quality standards applicable to each category. Services, on the other hand, are diverse and encompass areas such as financial services, transportation services, healthcare-related services, including the protection of patients' rights, as well as other sectors like telecommunications, education, and utilities.

These distinctions lead to the implementation of different policies and administrative structures, which in turn produce variations in political, regulatory, and law-enforcement approaches across sectors. From the perspective of administrative jurisdiction, these differences affect how consumer protection is applied and monitored. Regarding judicial jurisdiction, disputes may be brought before either Court of General Jurisdiction or Administrative Court, depending on the nature of the case and the legal framework governing the specific consumer legal relation.

By categorizing goods and services and understanding the administrative and judicial structures involved, the legal framework can better address the characteristics and risks associated with each type of product or service, ensuring effective consumer protection while maintaining a fair balance between the interests of the consumer and the trader.

At the policy level, the ministries responsible for Economy, Agriculture, Finance, Infrastructure, Environment, and Health are the ones that guide legislative changes and define consumer protection policies within their respective areas of competence. They also lead the corresponding chapters within the EU integration process.

Special laws regulating consumer legal relations have also established law enforcement structures, independent authorities, or inspectorates. These structures generally operate at the central government level, although some of them have regional directorates across the country.

Law no. 9902, dated 17.04.2008 "On consumer protection", as amended, article 56 provides: *"1. When a consumer's rights are violated, the consumer has the right to submit a complaint to: a) the state administrative structure responsible for consumer protection, or the special structures within local self-government units; b) consumer associations; c)...; c) an arbitration court or a licensed mediator; d) judicial bodies; dh) any responsible ADR (Alternative Dispute Resolution) structure established specifically for the out-of-court settlement of disputes, as defined in Articles 52/2 to 52/6 of this Law.."*

This law specifically regulates the Consumer Protection Commission and the State Market Surveillance Inspectorate¹, as the main responsible structures in relation to consumer sales contracts, unfair commercial practices, unfair contract terms, and the general safety of products etc.

Regarding food safety, the main responsibility lies with the National Food Authority and its 12 Regional Directorates. The responsible institution, regarding electronic and postal communications, is the Electronic and Postal Communications Authority. Regarding consumer credit contracts, the main responsibility lies with the Bank of Albania. For air transport, the responsible institution is the Civil Aviation Authority, etc.²

With the aim of handling consumer complaints, especially on matters of public interest, this law, in its 2018 amendment, provides for the establishment of Alternative Dispute Resolution (ADR) structures³.

In a vertical approach, consumer protection is provided both at the local government level and at the central level. According to the current legal framework on consumer protection, as well as on local self-government (Self-Government", 2015), municipalities are required to establish structures to address consumer complaints. Despite their limited responsibilities, Law no. 9902, dated 17.04.2008 "On Consumer Protection", as amended, provides in Article 56/1: *"The structure responsible for consumer protection, pursuant to the provisions of letters 'e', 'g', and 'i' of point 2, Article 49 of this law, shall cooperate with and authorize local government units to carry out functions for informing, notifying, and raising awareness among consumers, as well as for collecting, screening consumer complaints and, where appropriate, forwarding complaints to the responsible structure at the central level. 2. Local government units, for the implementation of point 1 of this Article and in accordance with Law No. 139/2015 "On Local Self-Government", shall establish specialized structures."*

In application of this Article, and in line with Article 56, consumers have the right to submit complaints to the specialized structures within the local government units. In the spirit of the law, these structures have limited competencies and may only handle complaints that fall within the authority of the local government unit. In other cases, after registration, the structure forwards the complaint to the responsible central institutions.

According to reports, only 50% of municipalities have established these structures, known as Consumer Protection Offices, and among them, only 15 municipalities were compliant with the current legal framework (shqiptar, 2021).

The integration into the European Union has prompted the ministry responsible for Economy to support and encourage local government to establish the structures for consumer protection.

Consumer protection is a broad and sensitive field that involves multiple structures at both the central and local levels. Even though each structure has clearly defined areas of

¹ The activity of the State Market Surveillance Inspectorate is also regulated by the Law „On the general safety of non-food products“, Law „On inspections in the Republic of Albania“, and a series of Decisions of the Council of Ministers issued to govern the operational scope of this institution.

² This list is not exhaustive.

³ For more details, see Articles 52/2 to 52/6, Law no.9902, dated 17.04.2018 "On consumer protection", as amended.

competencies, they are required to cooperate with one another to ensure safe products, monitor the market, improve the quality of life for Albanian consumers, and, above all, strengthen public trust in the effectiveness of public institutions.

Very often, within the framework of this institutional cooperation and depending on their responsibilities, the delegation of complaints from one administrative structure to another creates an institutional bottleneck, where each institution attempts to do only the minimum required, failing to fully ensure consumer protection¹.

Furthermore, for any consumer complaint concerning public services or non-food products, whenever an ADR structure is established, the Commission delegates the case and notifies the consumer. This clearly explains the role of the Commission as a leading law-enforcing institution in the field of consumer protection, as well as its competencies in handling consumer complaints. According to the Decision of the Council of Ministers, the Commission is composed of 5 members and is supported by a Technical Secretariat (1444, 2008).

On Chapter 28, the report underlines: “*Preparations are at an early stage in the area of consumer and health protection. There was limited progress on alignment with the EU acquis on substances of human origin.*” It also confirmed that on horizontal aspects, from early 2024 the Ministry of Economy, Culture and Innovation is now in charge of consumer policy. Albania adopted its 2023 – 2030 cross-cutting strategy on consumer protection and market surveillance. In the reporting period Consumer Protection Commission received 96 complaints, however, information was not 69 available on how Consumer Protection Commission dealt with these complaints. There have not been any developments on enforcement and redress. (Commission, 2024)

PROTECTION OF THE COLLECTIVE INTERESTS OF CONSUMERS (KOLA, 2018)

The protection of collective consumer interests is a central goal of consumer law. In Albania, in accordance with Consumer Protection Law, Consumer Protection Commission and the courts are the only authorities authorized to take decisions and enforce measures in cases where violations affect large groups of consumers.

¹ This is the current situation in Albania regarding electronic contracts, involving the Consumer Protection Commission and the State Market Surveillance Inspectorate.

Regarding non-compliance or defective products in electronic contracts, under the relevant provisions of the Law „On consumer protection“, the State Market Surveillance Inspectorate is the main responsible body. All complaints submitted to the Consumer Protection Commission are subsequently delegated to this Inspectorate.

Due to informal trade, the lack of registration of traders in the National Business Center, and the inability to trace them, according to the Inspectorate’s practice, these cases are often not resolved, preventing consumers from effectively protecting their interests.

For more information, see the decisions of the Consumer Protection Commission at: www.kmk.meki.gov.al

Consumers and officially recognized consumer associations can submit complaints regarding collective interests, but all enforcement actions, such as stopping violations, mitigating negative effects, publishing rulings, or imposing penalties, are carried out by the Consumer Protection Commission or the courts, depending on the case.

This structure highlights the leading role of the Consumer Protection Commission in coordinating consumer protection, ensuring compliance, and safeguarding collective consumer rights, while the judicial system provides an additional mechanism to enforce these rights. By working closely with consumer associations and monitoring compliance, it helps protect collective rights, increase consumer trust, and promote accountability in the market.

When a company's actions harm collective consumer interests, Consumer Protection Commission can intervene to stop the violation, mitigate its negative effects, and raise public awareness through appropriate publication of decisions. They can also enforce compliance by imposing financial penalties on those who fail to follow the decisions within the designated deadlines.

Due to the lack of and limited efficiency of other public institutions in the field of consumer protection, as well as the limited capacity of the staff at the Directorate for Alternative Dispute Resolution under the Ministry responsible for trade, the Consumer Protection Commission has primarily handled individual consumer complaints.

Cases where the Commission has undertaken administrative investigations and issued decisions to protect collective consumer interests are rare. This is largely due to limited human resources and the underdevelopment of supporting structures. Currently, on the official KMK website (www.kmk.meki.gov.al), only a few cases concerning collective consumer protection are publicly available.

At the same time, in accordance with their respective legal mandates, it should be noted that the Competition Authority, driven primarily by complaints submitted by consumers and organizations, has been an active institution in addressing issues related to the protection of collective consumer interests in Albania.

Under the consumer protection framework, certain consumer associations are recognized as representatives of collective consumer interests, with the ability to act on behalf of multiple consumers in judicial proceedings, provided they meet the legal criteria. This aligns with the general provisions in the Albanian Civil Procedure Code (Code, 1996) on representation and standing in court, which allows associations or organizations to represent interests of third parties under certain conditions, and articles, which regulate joint or consolidated actions.

However, in the absence of a dedicated "Collective Actions" law (Projekt ligji "Përpadite Kolektive", 2021), these Civil Procedure Code provisions cannot be fully leveraged to address systemic consumer violations. As a result, the Consumer Protection Commission remains the main body addressing these issues, while the courts rarely entertain collective claims due to procedural limitations. This gap highlights the need for legislative reform to create a framework that combines the procedural tools with specific consumer protection mechanisms, enabling effective collective redress and ensuring that violations affecting many consumers can be adjudicated efficiently.

NEW DRAFT LAW “ON CONSUMER PROTECTION”

On April 14, 2025, Albania and the European Union held their fourth intergovernmental conference, during which the Second Cluster “Internal Market”, was officially launched. This Cluster addresses key areas such as the free movement of goods, services, capital, and labor, while also covering competition rules and consumer protection standards (2025).

The opening of Cluster 2, especially the Chapter 28 highlighted the obligation of the Albanian state and the institutions responsible for consumer protection to further align the national legal framework with EU standards in consumer rights. Since this process involved a significant number of legal acts, it was considered necessary to draft and adopt a new comprehensive consumer protection law.

The draft law was published in early July on the public consultation website and remained open for feedback until the end of July, allowing stakeholders and the public to contribute to its development (2025).

According to the accompanying explanatory notes, the draft law “On Consumer Protection” represents a significant step forward in aligning Albanian legislation with the European Union acquis. It also constitutes a necessary intervention to improve market functioning and strengthen the effective protection of consumers in Albania.

The draft law also introduces improvements in the functioning of surveillance administrative bodies and enhances the role of consumer organizations. Its provisions on collective representation, participation in monitoring, access to information, and inter-institutional cooperation aim to strengthen the institutional ecosystem for consumer protection.

A key innovation of the law is the establishment of a National Consumer Protection Agency, which will serve as the central authority responsible for consumer protection matters.

The newly established agency serves as the central administrative body responsible for enforcing consumer protection law, acting as the core link of public intervention in safeguarding consumer rights.

The agency is granted expanded powers in monitoring, investigation, supervision, and sanctioning violations under the law. It plays a leading role in handling consumer complaints, conducting administrative investigations, and imposing corrective measures when necessary.

Beyond enforcement, the agency is also tasked with public education and awareness-raising, publishing information on unfair commercial practices, and representing Albania in international and regional forums on consumer protection.

Experts have expressed divergent views regarding the independence, effectiveness, and institutional interaction of the proposed new body. In this context, the Albanian Consumer Center, a non-profit organization active in the field of consumer rights, has submitted comments on the draft law as a whole. In its position, the organization emphasized the importance of the role of non-profit entities in non-formal consumer education, the need for state support to strengthen their capacities, and the promotion of access to justice in defending consumer rights. The establishment of a central consumer protection body under the authority of the Ministry of Economy may not represent the most effective institutional arrangement. A structure that remains dependent on ministerial oversight risks lacking

genuine independence, adequate human resources, and sufficient enforcement powers to ensure meaningful consumer protection.

The draft law also reveals significant constraints on the Agency's mandate, particularly in sector-specific areas of consumer protection, where responsibilities are delegated or shared among various institutions, a practice that ultimately weakens accountability and institutional clarity.

Considering the current challenges in Albania, including the limited level of consumer protection, the absence of collective redress mechanisms, violations of financial consumer rights (especially in consumer credit), and insufficient control over online trade and travel service, there is a compelling need for a fully independent central authority with a clear and comprehensive mandate.

Additionally, the overlapping inspection functions between the State Market Surveillance Inspectorate and the National Consumer Protection Agency raise legitimate concerns about jurisdictional overlap, ambiguity in competencies, and the risk of institutional inefficiency.

Last remarks

The draft law does not regulate consumer credit agreements or travel package contracts, leaving these markets largely unsupervised and consumers insufficiently protected. It is essential to reintroduce specific provisions addressing these types of consumer contracts, particularly in light of the recent issues faced by consumers in the microcredit sector, which have exposed serious gaps in market oversight and legal protection.

Furthermore, the establishment of a central structure under the direct authority of the Minister responsible for the trade raises concerns about its effectiveness and its ability to enhance the overall level of consumer protection. Such dependence may undermine the institution's capacity to operate impartially and to shift its focus toward the protection of collective consumer interests, which requires a higher degree of autonomy and institutional credibility.

From this overall assessment, it becomes evident that, although progress in the field of consumer protection in Albania is often claimed, the lack of genuine political will, insufficient human and technical resources, the absence of laboratories, and the limited number of qualified professionals continue to undermine and call into question the actual level of consumer protection in the country.

In conclusion, while Albania has made certain strides in consumer protection, significant challenges remain. The establishment of a truly independent consumer protection body, whether as an authority, a commission, or a consumer ombudsman, could provide the institutional autonomy, credibility, and focus needed to strengthen the protection of consumer rights. Without such reforms, the effectiveness of existing structures will continue to be limited, leaving consumers vulnerable and the enforcement of their rights fragmented. Achieving a robust and trustworthy consumer protection system requires not only legislative improvements but also political will, adequate resources, and professional capacity to implement them effectively.

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CHALLENGES AND OPPORTUNITIES TO IMPROVE PROJECT MANAGEMENT IN HIGHER EDUCATION INSTITUTIONS

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Abstract

Projects are becoming increasingly important for institutional development, fundraising and supporting education and cultural initiatives. Effective project management highly affects the success or failure of these specific and unique undertakings. Despite the advancement in project management, organizations in Albania face difficulties and challenges when they engage in projects. This study examines success factors, measurement approaches, and causes of failure in projects undertaken by educational organizations. It intends to enhance the design and implementation of projects in the Albanian context, by generalizing the findings of the study for a variety of fields where projects are a common approach of organizing the activities.

Keywords: project management, success factors, project failure, Higher Education Institutions

JEL: M10, O22, I23, Z11

INTRODUCTION

Project management has become an important tool for the success of modern organizations, regardless of their field of operation. The implementation of activities in the form of projects has also increased significantly in Higher Education Institutions (HEIs) in Albania, since 1992 (erasmusplus.al) and especially due to increased contributions from EU ever after 2014 (westernbalkans-infohub.eu). The growth of the role of scientific research in HEIs and their contribution to the economic development of the country has been accompanied by an abundance and diversity of projects funded and monitored by NASRI that have been implemented (& ongoing) by both public and non-public HEIs during the last years (Table 1).

Table 1. Data about projects implemented by Albanian HEI-s and ongoing ones in last 5 years

Year	Scientific Research Infrastructure Projects (PIKSH)	National R&D Program (PKKZH)	Projects of Technology and Innovation (PTI)	Bilateral agreements	Total
2021	15	27			42
2022	6	46		17	69

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Year	Scientific Research Infrastructure Projects (PIKSH)	National R&D Program (PKKZH)	Projects of Technology and Innovation (PTI)	Bilateral agreements	Total
2023	17	90	10	10	127
2024	22	73	18	16	129
2025	21	73	14		108

Source: www.nasri.gov.al, authors' elaboration.

These opportunities for higher education to engage in national and international projects come together with the continuous demands for improved performance, efficiency, and transparency. In this context, effective project management is becoming increasingly important as a key factor for sustainable institutional success (Meredith et al., 2021; Gjipali & Beqiraj, 2024). Such management is essential to ensure that investments in projects are translated into real and measurable results, contributing to the growth and development of HEIs and the whole Albanian economy in line with SDGs (Kuncic & Isak, 2025).

Despite the significant importance of projects, their management practices in Albanian institutions both in for-profit and non-profit fields remain diverse and often informal. Furthermore, there are many projects, but very little academic literature and studies about project management in the Albanian environment (Osmanaj & Meka, 2023; Guraziu & Vivar, 2024; Prifti, 2022). It is known and accepted that the peculiarities of every project highly affect its management (Kerzner, 2017, Meredith et al., 2021). However, institutions can benefit from strategic approaches and standardization of methods in project management, with an impact on the quality of their implementation and evaluation. Lack of knowledge, insufficient qualification or appropriate training, and organizational shortcomings in individuals, teams, and institutions engaged in projects can lead to inefficiencies, unstable results and a general lack of organizational learning.

This paper is part of a larger study that delves into the critical role of project management within Albanian educational institutions. The research aims to shed light on the factors that contribute to project success, the frequent challenges encountered, and the available opportunities for improvement within this specific context. The main research question is "How does project management influence the successful implementation of projects in higher education institutions in Albania, and what are the challenges encountered by them?"

The main objectives of the study are:

- To investigate the application of project management methods in Albanian institutions
- To identify the factors that influence the success of projects and the causes of their non-success (or even failure)
- To point out the main challenges faced by project leaders and teams in the HEIs
- To provide recommendations for improvements in the design and implementation of projects in Albanian organizations.

A mixed qualitative and quantitative method is used to raise the theoretical structure of the study, followed by a survey with the project managers and project team members in some organizations that typically use projects. Answering to the research question of the study will help build a stronger theoretical and practical framework for improving project

management in the Albanian HEIs. Although it is widely accepted that a unique “one-size-fits-all” model or approach does not work in project management (Kuster et al., 2015; PMBOK7, 2021; Breyter, 2022), the findings of the study and its recommendations can be applicable to other fields where the activities are carried out through projects.

The originality and significance of this work stem from the fact that it brings empirical data and analysis into a field of study where they are almost entirely lacking and provides groundwork for further in-depth research.

1. Research framework

Exploring project success and project failure concepts is important for revealing their drivers and triggers during the project’s implementation. Defining project success is a complex and often discussed topic in literature, as it can be assessed from different perspectives and over different time periods (Albert et al., 2018). “Project success” is not identical to “project management success”, as firstly emphasized by Baccarini (1999), and further explored by academia and practitioners. Project management success is related to meeting objectives on time, within budget, and within specifications (Kerzner & Saladis, 2009; Kerzner, 2017), which implicates that focus is mainly on the project’s process and achievement of short-term objectives. On the other hand, broader research points out that project success goes beyond these parameters, including long-term impact and stakeholder satisfaction (Bannerman, 2008; Mir & Pinnington, 2014), as well as the fulfillment of the project’s goal and objectives. The evolution of “project success” definition beyond the “Iron Triangle” (scope, time, cost) to include quality, stakeholder satisfaction, and long-term benefits has brought to the relation between projects and the organization’s strategy (Williams, 2017). The criteria for measuring project success should be defined at the beginning of the project, otherwise team members and stakeholders may have different perceptions of success. Further on, a multi-level framework of performance criteria should be compiled to enable the assessment of success from multiple stakeholder perspectives after project completion (Bannerman, 2008). This approach emphasizes that project success is subjective, multidimensional, and dependent on time, context, contributors and beneficiaries. Evaluating project success through a multidimensional framework contributes significantly to the continuous improvement of organizational performance and the achievement of ambitious results.

On the other side when a project does not deliver according to above mentioned success measurement, it is considered a non-success, or a failure, depending on more or less severe consequences (Yang et al., 2011; PwC, 2018).

Drivers of success and challenges in project implementation.

Project management literature emphasizes several prerequisites for project success, such as team communication, cohesion, collaboration, and effective team building (Kerzner, 2017; Meredith et al., 2021, Wysocki, 2019). They have proved to be success’ drivers and are often very closely related to good project leadership. In addition to technical skills and the use of tools, the soft skills of project managers and team members have been highlighted

as critical to project' success. According PMI (2023) project managers are not only technical specialists, but also leaders who synthesize information and facilitate collaboration.

Establishing, developing and managing an effective project team is one of the main conditions for success. A successful team is characterized by open communication, trust, motivation and a clear division of roles and responsibilities (Yang et al., 2011; Hussain et al., 2021). Such relationship enables project teams to avoid conflicts in the group, as one of the causes that lead to delays and overtime, lower performance, and even project' failure. The method of cooperation and clarity in communication highly affects the results achieved during the projects implementation (Hussein, 2013). When organizations invest to raise these capabilities, they achieve better performance and fulfillment of business objectives, experience less "scope creep" and budget loss in the event of failure. This highlights the importance of investing in people's skills, as a key factor for long-term success, adaptability and sustainability of organizations.

Organizational culture, described as the shared values, attitudes and behaviors of employees, has a significant impact on the success of project management. Resistance to change, hierarchical structures, lack of trust, and emphasis on individual tasks instead of collaboration can hinder the adoption of new project management methodologies and tools. This leads to communication difficulties, slow down in allocation and use of funds, changes in objectives during implementation, and other delays that negatively impact projects. They become the root causes for unrealized goals, incomplete projects or failed plans.

Challenges in project management vary significantly, depending on the field of project design and implementation. For academic institutions, managing infrastructural and cultural changes is essential for the successful implementation of new project management practices (Schuster, 2017). HEIs face ongoing changes, including modernizing technology systems, managing study program changes, addressing enrollment challenges, and also participating in research and internationalization projects. There are efforts to address such challenges and approaches suggested in country's level so that universities can overcome bureaucratic hurdles and create sustainable relationships, benefiting from research activities and innovation projects (Gjipali & Beqiraj, 2024).

Following the latest trends in project management (PMI, 2023), it should be mentioned that the integration of artificial intelligence (AI) and machine learning (ML) is transforming the management of projects in many fields of application. Although it is not a "remedy" for all the difficulties, failure causes or challenges mentioned, it provides intelligence, adaptability and speed to figure out risks and uncertainties, and make decisions in real time. Beside the simple function of organizing tasks, it enables predicting obstacles before they appear, optimizing resources based on real-time data, and automating repetitive actions (Wysocki, 2019). Integrating it in project management from Albanian HEIs requires special observation.

2. Materials and methods

The methodology used in this study relies on a combined research approach, which includes both theoretical analysis and the collection and interpretation of empirical data. The literature review enabled to lay the study background and to draw the research design. The

questionnaire, as the main instrument of investigation, was drafted based on the theoretical concepts, drivers and challenges encountered and highlighted by earlier and recent research. Practitioners' opinions and authors' experience in project management facilitated the testing and the carrying out of the survey. The structured survey has served to collect quantitative data related to management practices used, project success factors, non-success (failure) causes and common challenges during the implementation of projects. There were a few open-ended questions that were intended to capture qualitative variation or nuances.

The collected data were analyzed through mixed methods: qualitative thematic analysis to identify recurring patterns in the questionnaire responses, as well as quantitative analysis through descriptive statistics to extract general trends. This integrated methodological approach enables data triangulation, increasing the validity and reliability of the findings. By gathering broad perceptions and delving into individual experiences of a qualitative nature, the study achieves a broader and balanced understanding of project management in the Albanian context.

The questionnaire was distributed to 13 public and non-public institutions from education sector that have experience in project management, of which 8 were universities. The selection of the institutions and individuals was based on their involvement in national and international projects, as well as their role in the design, implementation or supervision of these projects. The survey was administered online, sent to 200 people, of which 162 responses were received. 6 of them were removed due to incomplete filling of the form, remaining with a sample of 156 respondents.

Deductive reasoning was followed to grasp the perceptions and experiences of participants, highlighting the most frequent factors of project success and failure, implementation hurdles and challenges, as well as gaps in the institutional or procedural structure of project management in HEIs.

3. Results and Discussion

The study has started from an indication (or hypothesis) about the obvious lack of standardization and a strategic approach to project management in HEIs, a shortcoming that directly affects the quality and evaluation of their projects. The results from processed data (Table 2) permit to point out some of the practices and challenges in project management based on the perceptions of project managers, team members, and support staff that have diverse experience in projects. Around 22% of them have participated in more than 6 projects, while 23% have been engaged only in one project up to now. More than 40% of respondents have been project leaders at least once, while 23% have experience as team members.

The general picture shows that most HEIs do not follow a unified standard for project management. Only a small number of them apply structured methodologies (PMBOK, 2023; Kerzner, 2017; Meredith et al., 2021) while the majority rely on individual experiences and internal institutional rules. Around 2/3 of respondents (Table 2) recognize and use PM methodologies, although it is based on their individual know-how and experience.

This indicates a relatively good level of formalization of practices inserted in their organizations or institutions, increasing the chances of adopting best practices in future projects. Generally, the team leaders are on the top of this group, with team members mostly being not sure about the method used. This brings difficulties in coordination, in allocating tasks, sharing responsibilities and in project evaluation process.

Table 2.: Project management practices in HEIs

Use of project management methodologies		Training of projects managers/ leaders		Training of team members		Evaluation of project results (failures)	
Recognize & use	62.7%	Formal	31.8%	Formal	36%	Yes	36.3%
Not surely	24.8%	Informal	46.3%	Informal	44.6%	No	25%
Do not use	12.5%	No training	21.9%	No training	19.4%	No info	38.7%

Source: Survey data, authors’ elaboration.

Only a few of respondents clearly state that they do not use any structured methodology, which indicates that management practices are mainly concentrated in larger organizations or those having longer experience in projects. Although the majority of individuals have the necessary information, there is still a gap in the knowledge and customized implementation of project management methodologies, especially in cases where information is not clearly communicated to all team members.

Another important finding is related to the lack of formal training. Only around 1/3 of respondents have received formal training and some 45% have benefited from informal training. These results display a relatively broad involvement in capacity development, but with greater emphasis on alternative and non-formalized forms of training. Another 20% of respondents declare they have not received any training in project management, neither formal, nor informal one, which can have negative impact on project planning, budget use, risks identification and other aspects during the implementation. Moreover, 80% of institutions part of the survey do not offer professional development programs related to PM. The lack of formal training in a significant proportion indicates the need for institutional awareness and engagement for building competencies in this field, with snowball effect on the entire organization. As recent research reinforces, the application of project management techniques fosters the acquisition of self-confidence and the development of a problem-solving mindset. Even in European HE there is a trend in the utilization of PM in daily operations, but still challenges persist concerning PM knowledge, organizational culture and structural inflexibility (Guraziu & Vivar, 2024).

Measuring project success is part of the process only in some of the institutions. They use classical indicators, but the assessment of success in terms of impact and outcomes is primarily dependent on beneficiaries or donors' opinion. The lack of a standard and adaptable framework for success measurement and project evaluation explains why institutions may have difficulty identifying best practices and replicating success.

The survey data (Table 2) about the practices of ex-post evaluation project, confirmed in around 36% of cases, shows there is institutional reflection on lessons learned and possible mistakes. However, many projects go without any evaluation (25%) and in a large number of cases participants have no information about this process. It means there is a lack of transparency or internal communication on project management practices and sharing lessons learned from negative experiences. This highlights the need to institutionalize post-project analysis, especially in cases of non-success, where objectives are not achieved, in order to enable future improvements.

The findings indicate that the lack of a sustainable organizational culture for project management is amongst the main challenges for Albanian HEIs. The management of projects is often ad-hoc and depends on the personal experience of the project leaders. Consequently, there is no "institutional memory" and effective learning process to facilitate and improve management within organization or in a sectoral level. It is reflected in the causes of non-success or failure (Fig.1). The team members rank the poor planning due to lack of knowledge and training as the main one, while project leaders give weight to lack of experience and the changes imposed by the top management. It should be mentioned that 12.4% of responses confirm there has been no failure during their participation in projects. It seems an encouraging indicator, but it requires further investigation to ensure if it implies a measured and evaluated success, or only the fact that the project has been finalized, without details on achievement of its objectives.

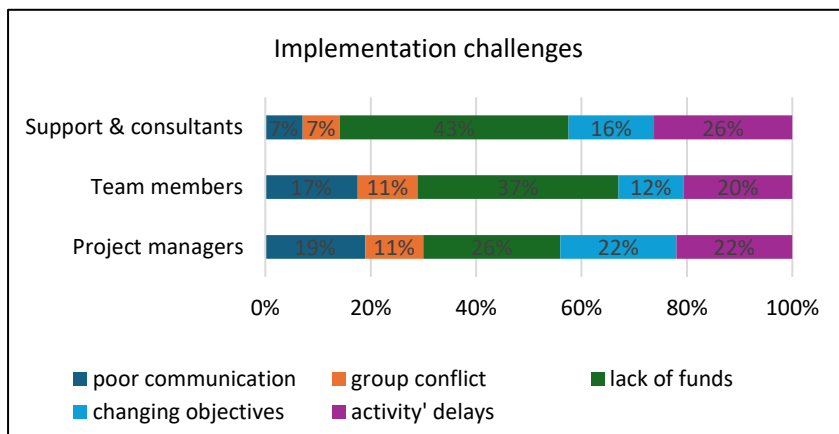


Fig. 1. Project failure factors

Source: Survey data, authors' elaboration.

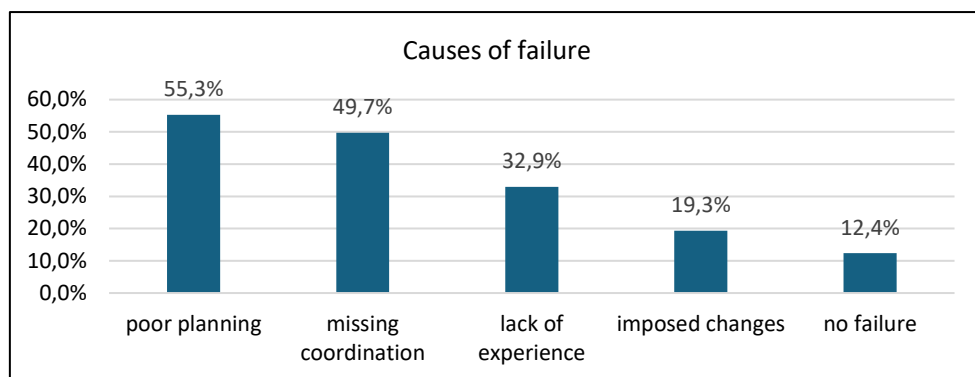


Fig. 2. Implementation challenges

Source: Survey data, authors' elaboration

Leadership, communication, negotiation, conflict resolution, and relationship building skills are essential to manage effective teams and collaborate with stakeholders. In case of missing them, challenges for the project management emerge. Some of them are mentioned and ranked by the respondents when asked about the challenges they have mostly faced during their work in projects (Fig.2). There is variation in the opinion of participants, according to different roles they play in a project (Meredith et al., 2021), still the lack or insufficiency of funds and activity' delays are most frequently mentioned. It brings to the attention the need for better budgeting and scheduling of projects in the initiation and planning phase, closely related to knowledge and training of the staff involved. It was noticed that there was increased interest in professional advancement for staff from the side of experienced project leaders and team members. Also, there is an inclination to raise capabilities and use information technology and AI tools for monitoring and progress reporting in projects. This is more obvious in cases of projects funded by European Commission and other international donors.

4. Conclusion

Empirical findings confirm that project management has a significant impact on the successful implementation of projects in HEIs in Albania. The drivers of success include careful planning, effective communication, cross-functional collaboration, and well-developed professional skills. These elements are important to ensure that projects are well-structured, efficiently implemented, and meet their objectives. On the other hand, the hindering factors are poor planning, lack of coordination, financial challenges (delayed allocation of funds, cash flow), individual or institutional capacity gaps, lack of formal training, and even some legal barriers. Such barriers cause time delays, budget insufficiency and failure to achieve the desired and expected results. Overcoming them requires a complex interaction between operational, cultural, financial and legal factors that affect the success or failure of projects.

The study also highlights the importance of developing human skills and adopting modern methodologies as keys to increasing institutional efficiency and sustainability.

Improving project management in HEIs requires a fundamental change in organizational culture, investments in capacity development, and addressing structural and legal constraints. This will enable not only the success of individual projects, but also the sustainable development and increased influence of institutions in Albanian education and culture.

Despite its contribution with original empirical findings to the field of project management, the study is based on a relatively small sample from a specific sector of education. Exploring practices and getting opinions from a broader range of organizations and participants can be a future research direction, in order to expand the validity of findings and generalize the recommendations. Another interesting direction of future research can be extended work on the whole life cycle of projects, especially related to project writing, as a necessity for HEIs that intend to enlarge funding opportunities. Encouraging a more supportive and facilitating environment for effective project management in Albanian higher education would be more than welcome.

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THE ECONOMIC IMPACT OF CORRIDOR VIII AND ITS ROLE AS A FACILITATOR OF PEACE IN THE BALKANS

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Abstract

This paper examines the economic impact of Corridor VIII, a key transportation corridor revitalizing the ancient Via Egnatia, which historically connected the western and eastern parts of the Balkans. Beginning in Durrës, one of the region's most important ports, the corridor seeks to strengthen trade routes, enhance economic development, and promote regional peace. Historically, Via Egnatia facilitated the circulation of goods such as metals, wine, olive oil, and textiles, some of which were traded along the Silk Road, establishing an early framework for economic connectivity. The completion and operation of Corridor VIII are expected to revitalize traditional industries, boost agricultural production, and increase the flow of modern technology and investment throughout the region. The collaboration fostered by this project, supported by international programs and government initiatives, will significantly contribute to the economic and sociocultural development of the Balkan countries. Beyond its economic impact, Corridor VIII plays a pivotal role in promoting peace, stability, and democratic values by enhancing cross-border cooperation. As a crucial step toward Albania's European Union integration, the full realization of Corridor VIII will provide substantial economic benefits, including increased trade, job creation, and the free movement of goods, thus advancing the region's overall development and stability.

Keywords: Via Egnatia, economic impact, trade routes, regional cooperation

JEL classification: N9

INTRODUCTION

Corridor VIII stands as a transformative project for the Balkans, combining economic growth with peacebuilding efforts in a historically fragmented region. The initiative, which aims to connect the Adriatic Sea with the Black Sea through a network of highways, railways, and ports, has the potential to redefine regional connectivity. At its core, Corridor VIII is not merely a transport project but a strategic endeavor to integrate Balkan economies into the wider European market, fostering cooperation and stability.

The Balkans have long been characterized by their rich history, cultural diversity, and geopolitical significance. However, decades of conflict and economic disparities have hindered the region's development. Corridor VIII seeks to address these challenges by creating a shared infrastructure that promotes trade, investment, and mutual understanding among participating countries. Supported by international organizations such as the European Union and regional governments, the project serves as a cornerstone of economic integration and peacebuilding efforts in Southeastern Europe.

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This paper explores the multidimensional impact of Corridor VIII, focusing on its potential to drive economic development and promote peace in the Balkans. It begins with an overview of the historical and geopolitical importance of the corridor before analyzing its economic implications and its role in strengthening regional cooperation. By examining the opportunities and challenges associated with the project, this study aims to highlight the transformative potential of Corridor VIII for the Balkan region.

LITERATURE REVIEW

Historical Context of Corridor VIII

The roots of Corridor VIII date back to the ancient Via Egnatia, which connected the Adriatic Sea with the Aegean and Black Seas. Scholars such as Ioannides (2017) have emphasized the role of the Via Egnatia in promoting economic exchange and cultural interaction across the Balkans and the Eastern Mediterranean. This historical trade route enabled the movement of goods such as textiles, olive oil, and metals, contributing to the economic vitality of ancient regional centers.

Recent literature, including the works of Nikolić (2019), highlights the continued relevance of Via Egnatia in modern infrastructure planning, underscoring its potential to revive historical connections within a contemporary economic and geopolitical context.

Economic Potential and Connectivity

Economic corridors such as Corridor VIII are widely recognized for their ability to enhance regional connectivity and stimulate economic growth. The World Bank (2019) identifies such projects as critical tools for reducing transport costs, increasing market access, and attracting foreign direct investment (FDI). Specifically, studies by Marković and Stojanović (2020) emphasize how improved infrastructure can stimulate trade flows and increase the competitiveness of Balkan economies.

The agricultural sector, identified as a key beneficiary, is extensively discussed in a report by the European Bank for Reconstruction and Development (2021). The report examines how modern transport networks can reduce logistical inefficiencies and open new export opportunities for agricultural products in Albania and North Macedonia.

Peacebuilding and Regional Cooperation

Corridor VIII is not merely an economic endeavor; it is also a diplomatic initiative aimed at fostering regional cooperation. According to a report by the United Nations Development Programme (2020), infrastructure projects of this scale create platforms for collaboration among neighboring countries, promoting dialogue and reducing tensions.

Similarly, Dimitrov (2018) explores how cross-border infrastructure projects can serve as confidence-building measures, encouraging nations to prioritize mutual economic benefits over historical conflicts. Albania's role as a facilitator in this process is particularly notable for its alignment with broader European integration goals.

Challenges and Risks

The successful implementation of Corridor VIII depends on addressing a range of challenges. Political instability, governance issues, and financial constraints are recurring themes in studies by researchers such as Petrović (2020). These challenges are further exacerbated by the logistical difficulties associated with the region's rugged terrain and outdated infrastructure.

Environmental issues also occupy a significant place in the literature. A study by Todorova and Ivanov (2021) argues for the integration of sustainable practices into the planning process of Corridor VIII to mitigate negative ecological impacts. Moreover, public perception and limited community engagement remain underexplored yet critical factors influencing the success of large-scale infrastructure projects.

BACKGROUND

The Balkans have historically served as a crossroads of civilizations, a meeting point between East and West. This unique geographical position has endowed the region with rich cultural diversity but has also made it a focal point of conflicts and power struggles throughout history. The origins of Corridor VIII can be traced back to the ancient Via Egnatia, a Roman road constructed in the 2nd century BCE to connect the Adriatic port of Dyrrachium (modern-day Durrës) with Byzantium (modern-day Istanbul). This ancient route facilitated the movement of goods, armies, and ideas, playing a crucial role in the economic and cultural exchanges of its time.

In the modern era, the reconceptualization of this historic route as Corridor VIII has been driven by the need for enhanced regional connectivity and economic integration. The corridor traverses Albania, North Macedonia, and Bulgaria, linking major ports, cities, and industrial centers. Its infrastructure includes highways, railways, and energy networks designed to enable the efficient movement of goods and people.

The political and economic landscape of the Balkans has undergone significant transformations since the 1990s, following the dissolution of Yugoslavia and the subsequent conflicts that fragmented the region. International initiatives (particularly those led by the European Union), have focused on stabilizing the Balkans through economic development and regional cooperation. Corridor VIII represents a central component of these efforts, conceived as both a catalyst for growth and a platform for fostering peace among nations with a history of tensions.

Despite its potential, the implementation of Corridor VIII faces several challenges, including political instability, financial constraints, and logistical barriers. Nevertheless, the commitment of regional governments and international actors underscores the project's importance in shaping the future of the Balkans. By examining the historical, geopolitical, and economic dimensions of Corridor VIII, this paper aims to provide a comprehensive understanding of its significance and potential impact.

ECONOMIC IMPACT

Corridor VIII is expected to bring transformative economic benefits to the Balkans, serving as a key pillar for trade, investment, and regional development. By connecting the Adriatic and Black Sea regions, the corridor creates a seamless trade route that reduces transportation costs and enhances the flow of goods and services. This connection is particularly significant for landlocked countries such as North Macedonia, which will benefit from direct access to global markets through modernized ports and transport networks (World Bank, 2019).

One of the main economic benefits of Corridor VIII lies in its potential to stimulate job creation. The construction and maintenance of highways, railways, and related infrastructure generate thousands of jobs, contributing directly to local economies. Furthermore, improved logistics and transport networks attract businesses and investors, creating new opportunities in sectors such as manufacturing, agriculture, and tourism (Marković & Stojanović, 2020).

Agriculture, a cornerstone of Balkan economies, is expected to benefit significantly from Corridor VIII. Improved transport infrastructure facilitates the export of agricultural products, enabling farmers to access new markets more easily. This increased market reach can enhance productivity, reduce post-harvest losses, and improve the competitiveness of Balkan agricultural goods in European and global markets (European Bank for Reconstruction and Development, 2021).

The corridor's role in fostering regional economic integration cannot be overstated. By linking the economies of Albania, North Macedonia, and Bulgaria, Corridor VIII promotes cross-border trade and investment, strengthening the economic ties among participating countries. This integration not only enhances economic resilience but also establishes a foundation for long-term cooperation and stability in the region.

Moreover, the project attracts foreign direct investment (FDI) by improving infrastructure and regional connectivity. Investors are more likely to view the Balkans as a viable business destination when transportation networks are modern and efficient. FDI brings advanced technologies, skills, and capital, further accelerating growth and economic development.

The digital economy is also expected to benefit from the development of Corridor VIII. Modern infrastructure supports the deployment of advanced communication technologies, enabling businesses to leverage digital tools for trade and operations. This digital transformation enhances the competitiveness of Balkan economies, positioning them as key players in the global market.

In summary, the economic impact of Corridor VIII is broad, encompassing job creation, agricultural development, regional integration, and technological advancement. By unlocking the economic potential of the Balkans, the corridor serves as a catalyst for growth and prosperity in a historically underdeveloped region.

THE ROLE IN PROMOTING PEACE

Corridor VIII is not only an engine of economic growth but also a crucial instrument for promoting peace and stability in the Balkans. By establishing shared infrastructure, it

strengthens cooperation and trust-building among the participating countries, including Albania, North Macedonia, and Bulgaria. Albania's strategic position and its commitment to regional integration make it a key actor in this endeavor.

As the western gateway of Corridor VIII, Albania occupies a critical position. The Port of Durrës (one of the largest and most significant ports in the region), serves as a hub for trade and connectivity. Through investments in modernization and logistical improvements, Albania is able to facilitate cross-border cooperation and deepen economic interdependence among Balkan countries (Dimitrov, 2018).

Furthermore, Albania's aspirations for European Union membership are closely aligned with the objectives of Corridor VIII. By actively supporting the project, Albania underscores its commitment to regional stability, democratic principles, and cooperation. These efforts foster trust among its neighbors and contribute to a shared vision for the Balkans (United Nations Development Programme, 2020).

The corridor also promotes cultural exchange and interpersonal connections, further strengthening relationships among Balkan communities. Albania's rich cultural heritage and proactive engagement position it as a leader in advancing mutual understanding and regional solidarity.

In summary, Albania's role in Corridor VIII extends beyond economic contributions. As a strategic partner for integration, Albania demonstrates how shared infrastructure can unite the Balkans, laying the foundations for a future of peace and prosperity.

CHALLENGES AND RISKS

The implementation of Corridor VIII, despite its promising potential, faces significant challenges and risks that must be addressed to ensure its success and maximize its benefits for the Balkan region.

Political Instability and Governance Issues

The Balkans have a long history of political instability, marked by frequent government changes, corruption, and unresolved ethnic tensions. These factors can delay decision-making processes that are essential for the timely implementation of major infrastructure projects such as Corridor VIII. Furthermore, discrepancies in governance standards and regulatory frameworks among participating countries further complicate cross-border cooperation (Petrović, 2020).

Financial Constraints

Large-scale infrastructure projects like Corridor VIII require substantial financial resources for construction and maintenance. While funding from international organizations, regional governments, and private investors plays a key role, securing sustainable financial support remains a major challenge. Competing priorities, economic uncertainties, and fluctuations in investment commitments further exacerbate this financial constraint (World Bank, 2019).

Environmental Issues

The environmental impact of Corridor VIII is another critical factor. Infrastructure projects of this magnitude can harm ecosystems, contribute to deforestation, and increase carbon emissions. To address these concerns, it is essential to integrate sustainability practices into the project's planning and implementation phases. Environmental assessments and the adoption of green technologies are crucial for minimizing ecological damage and ensuring compliance with modern environmental standards (Todorova & Ivanov, 2021).

Public Perception and Community Engagement

Public perception and community engagement are key to the success of Corridor VIII. Limited awareness and insufficient involvement of local populations may result in opposition and delays. Proactive communication strategies, community outreach, and inclusive decision-making processes are essential for gaining public support. Ensuring that communities are well informed about the project's benefits will help foster cooperation and mitigate resistance (Marković & Stojanović, 2020).

LAST REMARKS

Corridor VIII represents an extraordinary opportunity for the Balkan region, serving as a catalyst for economic growth, regional integration, and sustainable peace. By connecting the Adriatic Sea with the Black Sea, the corridor has the potential to transform the Balkans into a strategic hub for trade and connectivity, providing benefits to local communities and international stakeholders alike.

The economic impact of Corridor VIII is comprehensive, encompassing job creation, increased agricultural productivity, and the attraction of foreign direct investment. Beyond economic contributions, the corridor fosters regional cooperation and trust-building, reinforcing its role as a significant peacebuilding initiative. Albania's active participation demonstrates the transformative power of this project in uniting historically divided nations and promoting a shared vision for progress.

However, fully realizing the potential of Corridor VIII requires overcoming significant challenges. Political instability, financial constraints, environmental concerns, and public perception are obstacles that must be addressed to ensure the project's success. Collaborative efforts among regional governments, international organizations, and local communities will be essential in tackling these challenges.

To achieve these goals, the following steps are recommended:

Enhancing governance and transparency is essential for the success of Corridor VIII. Establishing strong institutional frameworks and mechanisms for accountability will help reduce corruption, streamline decision-making, and ensure that all participating countries maintain high standards of public administration. Transparent procedures will also build investor confidence and attract greater international support for the project.

Securing sustainable financing represents another key priority. Large-scale infrastructure projects require consistent and long-term funding. Therefore, regional governments should diversify financial sources by promoting public-private par-

tnerships and engaging international financial institutions. Effective financial planning will ensure the project's continuity and protect it from economic fluctuations or political changes.

Prioritizing environmental sustainability must accompany all stages of the corridor's development. Integrating eco-friendly technologies, renewable energy solutions, and thorough environmental impact assessments will minimize the ecological footprint of construction and operation. Sustainable practices not only preserve natural resources but also align the project with European environmental standards and global green development goals.

Engaging local communities is crucial for ensuring public support and long-term success. Transparent communication and participation in decision-making will enhance trust between project developers and citizens. Informing communities about the benefits of Corridor VIII (such as employment opportunities, improved infrastructure, and regional connectivity) can strengthen local ownership and reduce resistance to implementation.

Promoting regional cooperation remains the foundation of Corridor VIII's success. By harmonizing legislation, transport regulations, and administrative procedures, the participating countries can facilitate smoother coordination and mutual understanding. Enhanced cooperation will transform the corridor from a simple infrastructure project into a lasting symbol of economic integration and peace in the Balkans.

In conclusion, Corridor VIII is more than an infrastructure project; it is a symbol of hope and progress for the Balkans. By fully harnessing its economic, social, and peacebuilding potential, the region can develop the way toward a more prosperous, integrated, and sustainable future.

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DAC7 IMPLEMENTATION FOR EFFECTIVE AND TRANSPARENT EU TAXATION

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Abstract

This report examines the Directive on Administrative Cooperation (DAC7), the former Council Directive (EU) 2021/514, and its pivotal role in enhancing tax transparency and combating tax evasion within the European Union's digital economy. Implemented in 2023, DAC7 extends reporting obligations to digital platforms, requiring them to report income information of sellers, thereby closing existing tax gaps and ensuring appropriate taxation of revenue generated through online transactions. Despite the inherent complexities of diverse national taxation systems, DAC7 is broadly accepted by European countries as an effective mechanism for controlling income from activities facilitated by online travel agencies.

Keywords: DAC7, STR, OTA

JEL: H20, K34

INTRODUCTION

The advent and rapid expansion of the digital economy have fundamentally reshaped global economic landscapes, with online platforms emerging as central facilitators of commerce and services. The online travel agents (OTA) exploit the potential of travel market utilizing digital tools and marketing. These online platforms offer a comprehensive solution for travelers, enabling them to plan and book entire trips – including flights, accommodations, and other travel-related services – from a single interface (Aeknarajindawat, 2019; Singh and Sharma, 2024). Two of the most used OTAs are Airbnb and Booking.com. They stand out as global leaders in the accommodation booking sector, with their influence on the hotel industry continuing to grow (Diogo, 2018). The mightiest of all digital travel platforms – Booking.com remains one of the most popular and influential OTA globally, particularly in Europe (Borges-Tiago et al, 2021; Ivanov and Atanasova, 2019; Schegg, 2024).

These travel agents are utilized by many newly emerging private entities in the field of hospitality, trying to extract more popularity and revenue. A market of short term rentals (STR) is thus formed (Koster, Ommeren and Volkhausen, 2021). This STR market is rapidly growing, through sales on online platforms becoming a key aspect of the sharing economy, working as a significant social and economic phenomenon in recent years, according

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to many researchers (Martinez-Polo and Martinez-Sanchez, 2018; De Rivera et al, 2016; Hofmann et al, 2017; Key, 2017; Möhlmann, 2015; Pera et al, 2016; Xie and Mao, 2017).

However, the rapid growth and decentralized nature of the digital economy, particularly in the STR market, have introduced complex taxation challenges. While the European Union (EU) does not directly impose taxes, leaving this responsibility to individual member states, it enforces rules to harmonize tax policies across its members (European Commission, 2024). Consequently, each EU country applies its own tax regulations for STR properties, encompassing various taxes such as Income Tax, Value-Added Tax (VAT), Tourist Taxes, and Property Taxes. Tax residency further complicates these obligations for hosts.

In response to these challenges and the imperative to ensure fair and effective taxation in the digital era, the EU implemented the Directive on Administrative Cooperation (DAC7), formally known as Council Directive (EU) 2021/514. This directive aims to enhance tax transparency by requiring platform operators to report income information of sellers using their platforms (Rizzo and Acciaro, 2022). It introduces new obligations for digital platforms to report income generated by sellers, including those involved in STRs, to tax authorities in EU Member States.

UNDERSTANDING THE DAC7 EU DIRECTIVE

The Directive on Administrative Cooperation (DAC7), officially known as Council Directive (EU) 2021/514, represents a significant legislative advancement in the European Union's efforts to modernize its tax framework. Implemented in 2023, DAC7 expands the existing framework for administrative cooperation in taxation to address the complexities of the digital economy. Any individual or entity that earns income through digital platforms within the EU is subject to the reporting requirements of DAC7 (Nyka and Zapolska, 2024).

The primary objective of the DAC7 Directive is to enhance tax transparency and cooperation among EU Member States. By extending reporting obligations to digital platforms, the directive aims to effectively seal gaps in the current tax system (Stevens and Van Wamelen, 2021; Nyka and Zapolska, 2024)). This ensures that income generated by sellers through these platforms is appropriately reported and taxed, thereby combating tax evasion and maintaining competitiveness within the digital market. Tax transparency is achieved by requiring platform operators to report income information of sellers using their platforms (Rizzo & Acciaro, 2022). The directive is a crucial step towards creating a more transparent and fair tax environment across the EU.

The scope of DAC7 is broad, specifically targeting digital platforms that facilitate transactions between sellers and buyers as reported by Nyka and Zapolska (2024), Zapolska (2023). Platforms like Booking.com, Expedia, Airbnb, Hotels.com and others are mandated to report income earned by sellers utilizing their services. This is a particularly relevant issue for these platforms taht facilitate short-term rental transactions (Bei and Celata, 2023). The directive applies to all parties engaged in earning income through digital platforms within the EU, be it individual or company. This includes a wide range of digital businesses, encompassing both EU and non-EU platforms, to ensure comprehensive coverage and prevent tax avoidance.

Being implemented in 2023 the DAC7 directive sets this starting point for platform operators to comply with the directive's due diligence and reporting obligations concerning sellers offering goods or services via digital platforms Persiani (2023). This timeline underscores the EU's commitment to swiftly adapt its tax administration to the realities of the evolving digital economy (Periasamy, 2025).

KEY REPORTING OBLIGATIONS UNDER DAC7

The DAC7 Directive (Directive 2021/514/EU) introduces several core reporting obligations for platform operators within the EU, meticulously designed to bolster tax transparency and ensure proper tax compliance for income derived from digital platforms.

Income Reporting

A fundamental requirement under DAC7 is for platform operators to report the income earned by sellers utilizing their platforms. This encompasses income generated from both the sale of goods and the provision of services facilitated through the digital platform. The directive aims to ensure that earnings from various digital activities, including short-term rentals, are transparently declared and appropriately taxed.

Due Diligence

Platform operators are obligated to conduct thorough due diligence processes to verify the identity and tax residency of sellers operating on their platforms. This involves the systematic collection and validation of information about these sellers to ensure that the subsequent reporting to tax authorities is accurate and reliable as reported by Stevens and Van Wamelen, (2021), and Nyka and Zapolska (2024). This measure is crucial for preventing fraudulent activities and ensuring that the correct tax jurisdiction receives the relevant information.

Annual Reporting and Information Exchange

The information collected through due diligence and income reporting must be submitted annually by platform operators to the tax authorities of the relevant EU Member States. This annual reporting includes critical details such as the total consideration paid to sellers and any fees or commissions charged by the platform. Furthermore, DAC7 mandates the automatic exchange of this income-related information among EU Member States (PwC, 2023). This automated exchange facilitates comprehensive tax oversight across borders, encompassing data such as the identity of sellers, the amount of income earned, and other pertinent transaction data.

Specifics for Non-EU Platforms

A critical aspect of DAC7's comprehensive scope is its application to non-EU platforms that facilitate transactions involving EU sellers. This requirement is specifically designed to prevent tax evasion and ensure consistent, comprehensive tax reporting across international borders, leveling the playing field for all operators, regardless of their geographical

base. The enforceability of these obligations, particularly for non-EU platforms, presents a challenge that EU tax authorities must address.

IMPLICATIONS AND IMPACTS OF DAC7

The implementation of the DAC7 Directive carries significant implications and impacts across various facets of the digital economy, particularly for digital platforms and the broader EU tax landscape. Its effects extend from enhancing tax transparency to necessitating operational and administrative adjustments.

The overarching impact of DAC7 is to significantly enhance tax transparency and reduce tax evasion within the digital economy. By imposing stringent reporting requirements on digital platform operators and facilitating the automatic exchange of information among EU Member States, the directive aims to create a more transparent and fair tax system across the Union. This proactive approach helps to close existing tax gaps and ensures that income generated through online activities is properly accounted for.

DAC7 necessitates considerable changes in the operational processes of digital platforms (PwC, 2023). The obligations imposed by the directive may affect their existing operational models, aligning them more closely with employer-employee relationships rather than traditional business-to-business (B2B) interactions, according to Nyka and Zapolska (2024). This shift could lead to a restructuring of how platforms engage with their sellers, impacting various aspects from contracting to service provision.

Significant administrative responsibilities on platforms are set due to the implementation of DAC7, which are related mainly to small and medium enterprises. These platforms may encounter challenges due to limited resources and the potentially high costs associated with ensuring full compliance. The directive acknowledges the administrative burden on digital platforms and the privacy implications for sellers, aiming to strike a balance between the imperative for transparency and the protection of personal data. Managing sensitive seller information in compliance with DAC7 raises specific concerns about data privacy.

Each EU Member State is obligated to transpose the DAC7 directive into its national law. This process can present significant challenges, as countries must align their existing national legislation with the directive's new requirements. For instance, Poland's draft law to implement DAC7 highlighted potential issues in achieving this alignment. The complexities of national legal frameworks mean that the practical application and enforcement of DAC7 may vary across Member States.

DAC7 significantly impacts cross-border tax reporting, encompassing Value Added Tax (VAT) reporting and the associated record-keeping obligations stipulated under the VAT Directive. The directive, alongside the OECD model rules, introduces a standardized reporting requirement for Online Travel Agencies (OTAs), compelling them to review and report comprehensive information on the income and transactions of sellers (Zilli, 2022). This standardization aims to streamline international tax cooperation and reduce opportunities for non-compliance in cross-border digital transactions.

DAC7 IN THE CONTEXT OF SHORT-TERM RENTALS (STRS)

The rise of digital platforms has profoundly impacted the tourism sector, particularly through the proliferation of short-term rentals (STRs). The DAC7 Directive plays a crucial role in regulating and taxing this rapidly expanding market.

The growth of STRs through online platforms is a central aspect of the sharing economy, which has emerged as a significant socio-economic phenomenon. This market generates substantial economic benefits across the EU, with a recent study of Tourism Economics (2024) indicating that STRs contributed €149 billion in economic benefits, supported 2.1 million jobs, and generated €40 billion in total tax revenue in 2023. The listing of spare homes as tourist accommodations on applications like Airbnb has significantly boosted consumer adoption of the digital sharing economy (Mehta and Panse, 2024).

Prior to DAC7, the taxation of income generated through OTAs and STR platforms presented a critical issue for many European countries, especially those with well-developed tourist markets. While the EU allows individual member states to impose their own taxes, it also enforces rules to harmonize tax policies. Consequently, each EU country applies its distinct tax regulations for STR properties within its jurisdiction.

Key taxes considered include Income Tax, Value-Added Tax (VAT) (especially if the host is classified as a business), Tourist Taxes, and Property Taxes, with some jurisdictions imposing additional levies. Tax residency significantly influences these obligations. For example, income from STRs in Austria is subject to Austrian income tax, with classification as commercial activity depending on factors like the number of beds or vacation apartments and additional services offered as mentioned by Atanasova and Ivanov (2025). France offers two taxation options based on rental income, and Italy has specific regimes for rental income. In Germany, income from STRs can be taxed as commercial income if specific criteria are met, or as rental income (Germany – Tax Considerations on Short-Term Lettings, 2021). Greece and Portugal also have their own distinct tax frameworks for STRs, including varying income tax rates and VAT applications. Spain, for instance, has proposed imposing a 21% VAT rate on landlords offering STRs, contrasting with the reduced 10% VAT for hotels. A comparative analysis of Atanasova and Ivanov (2025), which examined tax policies in Austria, France, Spain, Italy, Germany, Greece, and Portugal, highlighted key similarities, divergences, and recurring patterns in tax regulations across these jurisdictions.

The DAC7 Directive plays a crucial role in regulating and managing STRs through OTAs. Its primary aim is to ensure that income from short-term rentals is accurately reported and taxed, thereby closing existing tax gaps. This is particularly relevant for major platforms like Airbnb and Booking.com that facilitate STR transactions. Despite the diverse and sometimes complex national systems for taxing STR income, the application of DAC7 for controlling such activities is well-accepted by European countries. The directive compels OTAs to adhere to standardized reporting requirements, reviewing and providing information on the income and transactions of sellers.

Despite the economic benefits, the rapid growth of STRs has prompted various regulatory responses from local authorities in popular European tourist cities, often aiming to curb the increase in property prices and mitigate negative impacts for local residents. For example, Paris implemented a prohibition on short-term renting a second home six years

ago, yet average rents and property prices continued to rise (Airbnb newsroom, 2024). French Parliament further lowered tax allowances for furnished tourist accommodation. Amsterdam applied strict rules limiting STRs to 30 days per year, but tourist overnight stays still increased (Airbnb newsroom, 2024). Athens saw appeals against the conversion of entire buildings into Airbnb units in historic neighborhoods (Ekathimerini, 2024). Barcelona plans to ban STRs for tourists from 2028 (Forbes, 2024).

Outside the EU, New York City enforced Local Law 18 in September 2023, requiring host registration and imposing strict conditions on STRs, which led to significant reductions in visitor spending and worker earnings in poorer boroughs. Similarly, Berlin's ban on entire home rentals (unless hosts occupy 50% of the property) led to a 55% decrease in revenue (Airdna, 2024). However, these harsh restrictions often lead to unintended negative consequences, such as increased hotel prices in these cities. These outcomes suggest that instead of outright bans, EU governments should focus on "smart regulations" to extract the maximum social and financial benefits from STR activities. DAC7, by providing a framework for transparency and data exchange, can be a crucial tool in implementing such smart regulations, allowing authorities to manage STRs more effectively and ensure fair taxation without stifling the economic benefits they offer.

CONSEQUENCES OF NON-COMPLIANCE WITH DAC7

The DAC7 EU directive imposes significant reporting obligations on platform operators, and failure to adhere to these requirements can result in a range of severe consequences, encompassing administrative, legal, operational, and financial impacts. Non-compliance with DAC7's reporting requirements can lead to increased administrative scrutiny from tax authorities, according to Supplied article (2025). Platforms may be compelled to implement extensive corrective measures, which can be highly resource-intensive, particularly for small and medium-sized enterprises (SMEs). Furthermore, failure to comply can result in substantial legal penalties, including fines and sanctions. The directive explicitly mandates that Member States enforce compliance, allowing for punitive measures against non-compliant entities.

Non-compliance with DAC7 may necessitate significant operational changes for platforms to meet regulatory standards, potentially disrupting their business activities. This is especially challenging for non-EU platforms that are required to report on EU sellers, raising concerns about the practical enforceability and administrative burden. Moreover, the directive's requirements might compel platforms to alter their fundamental business models, moving towards arrangements that more closely resemble employer-employee relations rather than traditional B2B interactions. Such shifts can fundamentally change how platforms operate and interact with their users.

Beyond direct legal and financial penalties, non-compliance with a significant EU directive like DAC7 can inflict severe reputational damage on digital platforms. In an increasingly interconnected and transparent world, companies that are perceived as non-compliant or engaging in tax avoidance risk losing consumer trust and facing public backlash. This can lead to a decrease in user engagement, loss of market share, and difficulties in

attracting new sellers or buyers, as consumers and partners may prefer platforms that demonstrate strong ethical and legal adherence.

The financial consequences of non-compliance are multifaceted. In addition to potential fines and sanctions imposed by tax authorities, platforms may incur significant costs associated with implementing corrective operational changes, hiring compliance experts, and potentially facing legal fees. Furthermore, disruptions to business activities or a damaged reputation can directly translate into decreased revenues and profitability. Ultimately, these financial burdens can undermine a platform's competitiveness and long-term viability in the European digital market.

CONCLUSION

The DAC7 Directive marks a transformative step in the European Union's ongoing efforts to ensure effective and equitable taxation in the rapidly evolving digital economy. By extending comprehensive reporting obligations to digital platforms, DAC7 directly addresses the long-standing challenges of tax transparency and evasion in cross-border digital transactions and the burgeoning short-term rental market. The directive's core objective is to close tax gaps and facilitate the automatic exchange of income information among Member States, fostering a more transparent and fair tax environment across the EU.

The implementation of DAC7, which commenced in 2023, has brought about significant changes for platform operators, including new due diligence requirements and annual income reporting obligations for sellers, extending even to non-EU platforms facilitating transactions with EU sellers. While these measures are crucial for achieving the directive's goals, they also introduce considerable administrative burdens and necessitate operational adjustments, sometimes aligning platform-seller relationships more closely with employer-employee models. National transposition of the directive into domestic law presents its own set of challenges, requiring careful alignment to avoid inconsistencies.

In the context of short-term rentals (STRs), DAC7 is particularly vital. It aims to streamline the taxation of income generated through platforms like Airbnb and Booking.com, which have seen immense growth and economic impact. The directive offers a path for EU governments to implement "smart regulations" that can harness the social and financial benefits of STRs while mitigating negative externalities like rising property prices, a challenge that harsh local restrictions have often failed to adequately address. Non-compliance with DAC7 has to be reviewed as a criminal act and is a subject to serious penalties and sanctions that could lead to reputation loss and financial troubles.

Ultimately, according to the European Commission, the long-term effectiveness of DAC7 hinges on a delicate balance: ensuring administrative efficiency, safeguarding data privacy, and managing the operational impact on digital platforms, particularly SMEs. As the digital economy continues to evolve, the adaptive and cooperative framework established by DAC7 will be instrumental in shaping a resilient and equitable tax system across the European Union, contributing significantly to a fairer distribution of tax revenues and fostering a level playing field for all economic actors.

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FAMILY TYPE AND OPPORTUNITIES OF HOUSEHOLDS WITH CHILDREN IN BULGARIA

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Abstract

In the last year, a few changes have been made to the law in Bulgaria regarding the raising of children by divorced parents, with the main emphasis being on the conditions and quality of life of children. This is an issue that is widely discussed in society but has received limited research in academic circles. This study examines the relationships between family type and variables representing the opportunities of households with children in Bulgaria.

Keywords: household, children, opportunities, areas

JEL: C12, D31, R20

INTRODUCTION

The opportunities indicate the level and quality of the environment in which people live. High incomes and good living conditions stimulate domestic consumption through increased purchasing power of households, which leads to sustainable economic growth. As for households with children, household opportunities are a guide to the standard of living of children. As with research on poverty and social exclusion in children, it is a top priority, because in addition to income, other types of family opportunities that shape this indicator are considered here.

In her paper, (Dimitrova, 2018, pp. 152–153) describes that “In light of the deepening demographic crisis, the place given to children in the social policies of EU countries is of particular importance. Of paramount importance are measures aimed at ensuring the normal growth of future generations and protecting them from the risks of poverty. For measures in this direction to be successful, poverty should be considered as a multifaceted problem. Therefore, the EU applies three different indicators. If a person meets at least one of them, he or she is perceived as being at risk of poverty or social exclusion. The indicators are: severe material deprivation; low intensity of economic activity in the household; risk of poverty, considering the share of persons living with an income below 60% of the national median equivalent disposable income after social transfers. As of 2016, according to Eurostat data, approximately 7.5 million children under the age of six were at risk of poverty or social exclusion in the EU.” The role of social policies in the context of the deepening demographic crisis in the EU is highlighted, placing children at the center of attention. The effectiveness of measures to support future generations depends on a comprehensive understanding of poverty, viewed not only as a lack of income, but also as a multidimensional phenomenon. The children's well-being should be seen as a central

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indicator of a country's resilience and capacity to respond to demographic and socio-economic challenges.

A number of studies average households with children by household type. (Vegeris, S. & Perry, J., 2003, p. 155) They distinguish and examine the difference between children of single parents and children of couples. In their study, the differences are not particularly large, but it should be borne in mind that they studied households in Great Britain. This context is essential, as the British welfare system provides relatively extensive social support, which may mitigate some of the inequalities typically observed between single-parent and two-parent households. In other socio-economic environments, especially where social policies are less comprehensive, the disparities are likely to be more pronounced.

According to data from 1992, Mihova G. (1999, p. 83) found that "A large number of these families find it difficult to support themselves on the income of the single parent and are invariably present in social assistance centers." Which highlights the situation in which Bulgaria finds itself regarding the differences in the type of family with children. This finding underlines the structural vulnerability of single-parent households in the country during the transition period of the 1990s, when economic instability, high unemployment, and inflation significantly reduced living standards.

In Bulgaria, the type of household plays a major role in the demographic situation regarding households with children according to Tasheva (2002, p. 237–245) "Among the demographic changes, the leading factors are the decrease in the number of members in households, the decrease in the number of traditional married couples at the expense of single-member households and single-parent households." These transformations reflect not only demographic trends such as declining fertility and increasing divorce rates, but also broader social changes linked to modernization, migration, and shifting value systems.

DATA AND METHODS

The data source in this study is the regular sample statistical survey of the National Statistical Institute called "Statistics on Income and Living Conditions", for short called "SILC". (NSI, 2025) Regulation (EU) 2019/1700 of the European Parliament and of the Council establishes a common framework for European statistics on persons and households, based on individual data collected through samples. The Survey on Income and Living Conditions (SILC), is part of the surveys included in the regulation and concerns the collection of comparable and up-to-date information on the current situation and dynamics of income, as well as on the level and structure of poverty and social exclusion at national and European levels. "The selection of units is on a rotational principle, and the survey is representative. From the sample of households in the survey, only households with children were selected, regardless of whether the household has one parent or a parent couple. 1105 households with children were selected from the survey.

The specialized statistical software SPSS – IBM SPSS was used to analyze the data.

Limitations of the study:

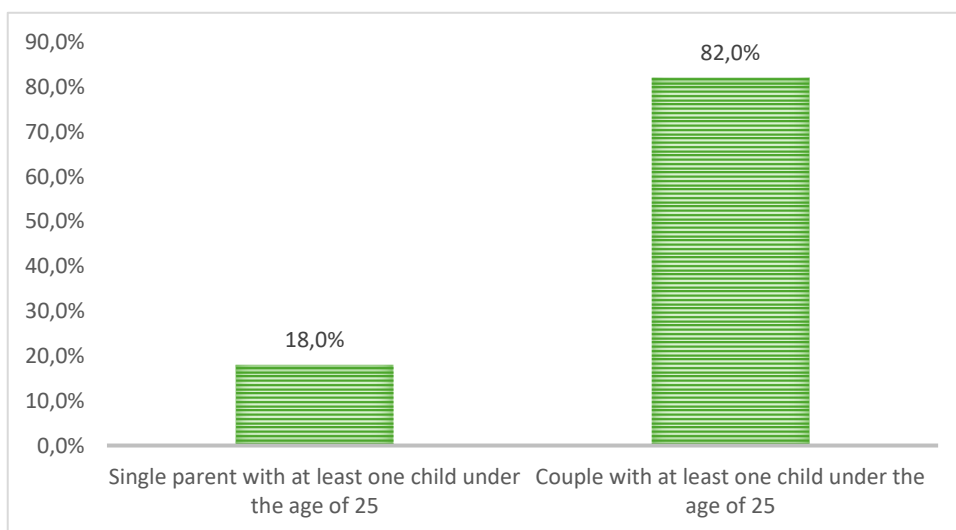
- The selected households have children under the age of 25.
- The data from the "SILC" study are for 2023.

The analyses used in the article are:

- Descriptive analysis – Presented by one-dimensional and two-dimensional frequency distributions, through a tabular and graphical approach.
- Pearson's chi-square criteria. – Used for variables located on nominal scales. According to (Boshnakov, 2009, p. 59) "The verification of a statistical hypothesis for the presence of a dependence between two features, presented on a nominal scale, is carried out using the so-called "chi-square" criterion (or Pearson's test)".
- Cramer's coefficient – it is also used for weak scales, but (Съйкова, et al., 2002) "is recommended in cases where the number of rows and columns in the output table is not equal".
- Kendall's coefficient – used for studies with a variable located on the ordinal scale.

RESULTS

In the target population, only 2 of the categories available in the variable “Household type” were selected. This is imposed by the nature of the research topic, because the current study is only interested in households with children under 25 years of age. There are two types of households with children under 25 years of age in them. The first type is “Single parent with at least one child under 25”, and the second is “Couple with at least one child under 25”. Figure 1. presents the distribution by household type, with the share of households representing a couple with at least one child under 25 years (82%) being several times higher than the household representing a single parent with at least one child under 25 years (18%).



Source: Author's calculations. Data: National Statistical Institute

Fig. 1. Distribution of households by „Household type“

Table 1 presents the qualitative variables characterizing the income and opportunities of households with children. According to the distribution for the variable "Change in household income compared to the previous year", most households with children (73%) do not experience a significant change in income, which may be an indicator of economic stability of this type of family, but also a lack of tangible improvement. In conditions of inflation, this is an indicator of impoverishment. The share of households with children with an increase in income is 20%. Although this is not the predominant share, this percentage shows that one fifth of the surveyed households with children experience income growth. The share of households with children reporting a decrease in income (7%) is a relatively small but socially significant share. These households are probably more vulnerable, and it should also be borne in mind that they are placed in conditions of inflation. They are threatened by financial difficulties, indebtedness or limited access to basic needs.

Most households (94%) have not reduced their utility costs, and the share of those who have reduced them is 6%. Although a small share, it indicates that more than 1 in 16 families with children have either reduced access to electricity, water or heating – essential services, or due to the strengthening of the green economy and the implementation of photovoltaic systems and other methods of reducing utility costs. This indicator can be perceived ambiguously.

Around 1/3 of households (31%) cannot afford a week's holiday, which is considered an indicator of deprivation according to EU standards. Although most families (69%) can afford it, the share of those who are in difficulty is significant.

The variable "Ability to afford meat, chicken or fish every other day" measures access to adequate nutrition, which is a key component of living standards. The share of households with children that can afford regular consumption of meat or fish is predominant, but 15% of households with children cannot afford to eat according to this type of standard. Here, the fact that both globally and in Bulgaria the number of people who do not prefer or deny meat as a healthy food is increasing should be taken into account. In a study by Angelova-Igova (2019, p. 504) on the subculture of long-distance runners, it is stated that "Most representatives of the subculture have a strong connection with nature and an ecological lifestyle. A large part of them are vegetarians or vegans."

According to the results of the presentation of the variable "Ability to afford unforeseen expenses", although 60% have the ability to afford unforeseen expenses, almost 2 out of 5 households (40%) are unable to cover unexpected expenses (e.g. repairs, medical needs), which indicates financial vulnerability. This is an important indicator of economic sustainability and the availability of savings.

According to the distribution of the variable "Computer availability", it is seen that the share of households with children (90%) that have a computer is dominant, which is an indicator of a high level of digital security. 7% of households experience financial difficulties related to purchasing a computer.

More than 4 out of 5 households (81%) own a car, which is a good indicator of mobility and material status. About 10% cannot afford it, and almost the same share does not want a car for other reasons (e.g., they live in urban conditions).

Over 75% of households with children under 25 report experiencing some form of difficulty, with almost 28% reporting "difficulty" or "great difficulty". Only about 25% find covering expenses easy, which indicates that 1 out of 4 households have a comparative degree of financial freedom.

The study found that most families (86%) manage to maintain adequate heating – key to health and well-being. However, almost 14% are at risk of energy poverty, especially during the winter months.

Less than half of households can afford to renovate their interiors. Over a third (34%) cannot afford to replace them, indicating a form of material deprivation.

Table 1. Characteristics of household capabilities

Question	Answers	Percentage
Ability to afford a week-long vacation away from home	Yes	68,60%
	No	31,40%
Ability to afford meat, chicken or fish every other day	Yes	85,40%
	No	14,60%
Ability to afford unforeseen expenses	Yes	60,50%
	No	39,50%
Ability to cover daily expenses	With great difficulty	8,10%
	With difficulty	19,90%
	With some difficulty	46,70%
	Relatively easy	20,90%
	Easy	4,10%
	Extremely easy	0,30%
Ability to afford adequate heating	Yes	86,10%
	No	13,90%
Replacing worn-out furniture	Yes	48,10%
	No, I can't afford it	34,20%
	No, for other reasons	17,60%

Source: Author's calculations. Data: National Statistical Institute.

Statistically significant differences test

Table 2 presents the results of the test for statistical significance of the differences in the two types of households.

Ability to afford a week-long vacation away from home and household type

The difference in the two types of households in terms of the ability to afford a week-long vacation away from home is tangible and statistically significant. In the group of those who can afford a week-long vacation away from home, the share of households with two parents is higher (72%). While in the group of those who cannot afford a week-long vacation, the share of the household type with one parent is higher (49%).

Ability to afford meat, chicken or fish every other day and household type

There are significant differences in the two types of households in terms of the ability to afford meat, chicken or fish every other day. In the group of those who indicate that they can afford meat, chicken or fish every other day, the largest share (87%) is in households with two parents. Among those who indicated that they do not have such an opportunity, the largest share (23%) is in households with one parent.

Ability to afford unexpected expenses and household type

There are statistically significant differences between the two types of households in terms of their ability to meet unexpected expenses. The share of two-parent households that say they can afford unexpected expenses is significantly higher (64%) than that of single parents (43%). Conversely, over half of single parents (57%) say they are unable to meet unexpected financial expenses, while this share is lower for two-parent households (36%).

Ability to cover daily expenses and household type

A statistically significant relationship between household type and ability to cover daily expenses is also evident. Single parents with children under 25 years of age experience significantly higher levels of difficulty in meeting daily financial needs compared to couples with children. The share of single parents who report that they cope “with great difficulty” (15%) or “with difficulty” (26%) is higher than the corresponding shares among couples – 7% and 19%, respectively. At the same time, households with two parents report that they cover their expenses “relatively easily” (23%), “easily” or “very easily” (5%), which are also the largest shares among the two household types. The relative share is highest in both household types in the category “with some difficulty”, but nevertheless the data clearly show a less favorable financial position of single parents.

Ability to afford adequate heating and household type

The two household types also differ significantly in their ability to afford adequate heating. Two-parent households have a higher share (89%) of those who stated that they could afford adequate heating. While single-parent households have a higher share (25%) of those who stated that they did not have such a possibility.

Replacement of worn furniture and household type

In the variable replacement of worn furniture and household type, a statistically significant difference is also observed with respect to household type. Households with two

parents are distinguished by a higher share (52%) of those who stated that they can replace their worn furniture. In households with single parents, a significantly higher share (48%) is observed in the group that reflects that the household does not have the opportunity to afford to replace its worn furniture.

Table 2: Statistically significant differences test

	Ability to afford a week-long vacation away from home	Household type		Presence of a statistically significant relationship
		Single parent with at least one child under the age of 25	Couple with at least one child under the age of 25	
Ability to afford a week-long vacation away from home	Yes	51,30%	72,40%	Yes (0,000)
	No	48,70%	27,60%	
Ability to afford meat, chicken or fish every other day	Yes	77,40%	87,20%	Yes (0,000)
	No	22,60%	12,80%	
Ability to afford unexpected expenses	Yes	43,20%	64,30%	Yes (0,000)
	No	56,80%	35,70%	
Ability to cover daily expenses	With great difficulty	14,60%	6,60%	Yes (0,000)
	With difficulty	25,60%	18,70%	
	With some difficulty	49,20%	46,10%	
	Relatively easy	10,10%	23,30%	
	Easy	0,50%	5,30%	
	Very easy	14,60%	6,60%	
Ability to afford adequate heating	Yes	74,90%	88,50%	Yes (0,000)
	No	25,10%	11,50%	
Replacement of worn furniture	Yes	30,20%	52,10%	Yes (0,000)
	No, I can't afford it	48,20%	31,10%	
	No, for other reasons	21,60%	16,80%	

Source: Author's calculations. Data: National Statistical Institute.

DISCUSSION

Single parents with children under the age of 25 occupy a comparatively disadvantaged position relative to couples with children. The findings of this study underscore the structural vulnerability of this group and emphasize the necessity of targeted social support and

policy interventions. The disparities observed between the two household types highlight the systemic nature of the challenges faced by single-parent families. These inequalities manifest not only in material conditions but also in access to childcare services, education, and opportunities for social mobility. Within this context, the social vulnerability of single parents should be conceptualized as a multifaceted issue, in which economic constraints intersect with psychological pressures and limited social capital. Consequently, the results indicate the need for integrated policy measures that combine financial assistance, enhanced access to childcare and educational services, and initiatives aimed at strengthening employment opportunities and income security.

CONCLUSION

Considering the limitations of the present study, significant differences in the probabilities between the two types of households were identified. Significant differences were found for all six variables examined.

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FROM STRATEGY TO MEASUREMENT: KPIS IN TOURISM POLICY DESIGN AND IMPLEMENTATION: ANALYZING THE CRITICAL ROLE OF PERFORMANCE INDICATORS IN BULGARIA'S TOURISM SECTOR AMID EUROZONE TRANSITION

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Abstract

This study investigates the critical role of Key Performance Indicators (KPIs) in tourism policy design and implementation, focusing on the Bulgarian tourism sector in the context of Eurozone accession. By integrating quantitative data analysis, qualitative case studies, and policy evaluation, the research bridges the persistent gap between strategic planning and measurable outcomes in tourism governance. The study identifies four principal dimensions of KPI systems – economic, social, environmental, and governance – and explores their application within Bulgaria's tourism policy framework. The findings reveal that effective KPI implementation requires balancing standardized measurement with contextual adaptation, especially in economies undergoing structural transformation. Consulting services emerge as key mediators, translating strategic objectives into actionable metrics and enabling institutional learning. Comparative evidence from destinations such as Barcelona, Vienna, Singapore, and Dubai demonstrates how KPI frameworks can support resilience, inclusivity, and sustainability in policy design. The paper contributes to both academic theory and practical application, offering a comprehensive model for evidence-based tourism governance during Bulgaria's transition to the Eurozone.

Keywords: Tourism policy; Key Performance Indicators (KPI); Governance; Sustainability; Consulting services; Eurozone; Evidence-based management; Bulgaria; Tourism competitiveness; Destination performance

JEL Codes: L83; O21; Q01; Z32; H83; C81

INTRODUCTION

Tourism has long occupied a strategic position within Bulgaria's economic and social architecture, functioning as one of the country's most dynamic sectors of growth and international integration. Contributing between eleven and thirteen percent of the national GDP and generating over a tenth of total employment, the industry has evolved into a cornerstone of Bulgaria's competitiveness and regional cohesion (Ivanov & Dimitrova, 2022; WTTC, 2023). As Bulgaria prepares for Eurozone accession, this structural importance acquires new significance. The convergence process demands not only fiscal alignment but also the

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modernization of governance mechanisms and the adoption of transparent, evidence-based policy instruments. Within this context, Key Performance Indicators (KPIs) emerge as indispensable tools for measuring, communicating, and refining the effectiveness of tourism policy. Historically, Bulgarian tourism governance has been characterized by institutional fragmentation, a preference for quantitative expansion over qualitative improvement, and limited inter-ministerial coordination. Traditional indicators such as visitor arrivals, overnight stays, and revenues have dominated reporting practices, leaving social, environmental, and governance dimensions underdeveloped. As Marinov and Assenova (2020) observed, “tourism policies without measurable frameworks remain aspirational narratives rather than operational systems.” The impending Eurozone membership transforms this diagnostic weakness into an urgent reform priority. Under the European System of Accounts (ESA) and Eurostat’s harmonization requirements, Bulgaria must demonstrate not only growth but also efficiency, transparency, and policy coherence through measurable outcomes. The COVID-19 pandemic reinforced the inadequacy of narrow, volume-based measurement systems. Between 2020 and 2021, Bulgaria experienced a contraction of over sixty percent in international arrivals (UNWTO, 2021). Destinations with diversified tourism products and strong governance frameworks, such as Austria and Portugal, recovered far more rapidly, highlighting the critical role of resilience, diversification, and adaptive policy capacity. For Bulgaria, this experience underscored the necessity of KPI frameworks that capture qualitative performance dimensions such as social well-being, environmental stewardship, and institutional adaptability.

Professional tourism consulting has thus gained renewed relevance as an intermediary between strategic objectives and administrative execution. Consultants and academic experts act as translators of complex policy ambitions into operational methodologies, helping to bridge the long-standing divide between theory and implementation. As Dimitrov (2023) notes, consulting “transforms strategic rhetoric into measurable frameworks that facilitate policy learning.” In transitional economies like Bulgaria’s, this mediation process not only enhances technical precision but also cultivates administrative competence and stakeholder trust. The present study aims to advance this agenda by providing an empirically grounded and theoretically integrated analysis of KPI-based tourism policy design. Its objectives are fourfold: to clarify the conceptual and methodological foundations of KPIs in tourism governance; to identify indicator dimensions most relevant to Bulgaria’s Eurozone transition; to examine the contribution of consulting services to KPI development and implementation; and to formulate practical policy recommendations that strengthen evidence-based management. Employing a mixed-methods approach, the study combines quantitative analysis of national and European datasets with qualitative consultations involving policymakers, tourism professionals, and community stakeholders. This combination allows for both analytical rigor and contextual sensitivity, situating Bulgaria’s experience within the broader European policy discourse. The article proceeds in eight sections: Section 2 outlines the theoretical framework; Section 3 presents the research methodology; Section 4 analyzes the main KPI dimensions; Section 5 explores the role of consulting; Section 6 offers comparative case studies; Section 7 discusses findings; and Section 8 concludes with recommendations for policy and research.

The overarching premise is that the effectiveness of tourism policy depends not only on its strategic vision but on its capacity to transform that vision into measurable and verifiable results. Through the institutionalization of KPIs, Bulgaria can align its tourism governance with Eurozone standards while fostering transparency, inclusiveness, and sustainable competitiveness.

1. Theoretical and conceptual framework

The theoretical foundation of KPI-based tourism governance reflects a broader transformation in public administration – from input-oriented, rule-based management toward output- and outcome-oriented governance. Within this paradigm, Key Performance Indicators function as both analytical and institutional instruments, translating abstract policy goals into observable and comparable metrics. Ivanova and Popova (2021) define KPIs as “quantifiable measures that reflect critical success factors and enable the evaluation of progress toward strategic objectives.” In tourism, they serve as the connective tissue between planning, implementation, and evaluation, linking aspirations such as sustainability, competitiveness, and inclusivity to empirical evidence. The evolution of KPI frameworks in tourism policy mirrors the maturation of managerial and governance theory. The first generation of tourism indicators, dominant through the 1980s and 1990s, focused narrowly on economic performance – visitor numbers, receipts, and capacity utilization. The second generation, emerging in the 2000s, was shaped by the global sustainability agenda and Agenda 21 for Travel & Tourism, incorporating social and environmental variables. The current third generation is integrative, encompassing economic efficiency, social equity, environmental resilience, and governance quality within unified measurement systems (UNWTO, 2022). This integrative turn represents a paradigmatic shift: performance measurement has evolved from accounting for growth to governing for sustainability.

In Europe, the introduction of the Tourism Satellite Account (TSA) methodology and the European Tourism Indicator System (ETIS) institutionalized KPI-based governance as a policy norm (European Commission, 2020). Together, these frameworks establish harmonized metrics for economic impact and sustainability performance, enabling comparability across member states. Bulgaria’s challenge lies in translating these supranational standards into a coherent domestic framework – one that maintains comparability while addressing contextual diversity across destinations. The normative structure of KPI systems rests on three interrelated pillars: governance, sustainability, and competitiveness. Governance ensures that indicators are embedded within transparent institutional processes and subject to accountability; sustainability broadens the temporal and ethical dimensions of measurement, incorporating ecological and social criteria; and competitiveness provides the comparative lens through which destinations evaluate progress and identify best practices (Marinov et al., 2022). The dynamic interaction of these pillars transforms KPI systems into reflexive governance mechanisms – capable not only of monitoring performance but of shaping behavior and learning. A central insight from contemporary research is that measurement frameworks must be co-created with stakeholders to ensure legitimacy and practical relevance. Dimitrova and Stoyanov (2021) emphasize that top-down systems often generate resistance or irrelevance, whereas participatory approaches foster shared ownership and adaptive capacity. Tourism’s multi-stakeholder nature – spanning governments,

enterprises, communities, and visitors – renders collaborative measurement both a methodological necessity and a governance imperative. For Bulgaria, regional heterogeneity amplifies this need. Indicators suitable for Sofia or Varna may not reflect the realities of rural or mountain regions such as the Rhodopes, Pirin, or Strandzha. Contextual adaptation, therefore, becomes an essential dimension of KPI design.

Tourism policy consulting operates at the intersection of theory and practice, acting as a conduit for methodological transfer and institutional learning. Consultants and academic partners facilitate the translation of analytical models into administrative routines, ensuring that KPI systems are not only conceptually robust but operationally feasible. As Ivanov and Dimitrova (2022) observe, “effective consultancy transforms data collection into policy learning.” In Bulgaria, the Ministry of Tourism’s partnerships with universities and private consultancies exemplify an emerging hybrid model of governance that links knowledge production with policy implementation. Conceptual frameworks such as the Tourism Policy Cycle (Stankova & Vasenska, 2021) and the Destination Governance Model (Marinov & Assenova, 2020) illustrate the recursive relationship between planning, implementation, and evaluation. Within these frameworks, KPIs act as feedback loops, integrating evidence into every stage of the policy process. Measurement thus becomes endogenous to governance, rather than an external audit. Despite theoretical advances, several research gaps remain. Empirical studies examining how Eurozone convergence shapes tourism measurement in post-transition economies are limited. The operational role of consulting services in embedding KPI systems is underexplored, and the integration of quantitative and qualitative evaluation methods remains incomplete. Moreover, few studies trace how KPI adoption translates into tangible improvements in policy performance. The present research addresses these gaps by conceptualizing KPIs as dynamic governance instruments – simultaneously descriptive, diagnostic, and prescriptive.

By situating Bulgaria’s tourism policy challenges within this conceptual framework, the study underscores that measurement is not a neutral technical exercise but a reflection of institutional maturity. The establishment of a coherent KPI system marks a pivotal step in transforming tourism governance from reactive management to proactive strategy, aligning Bulgaria’s policy architecture with the normative and operational standards of the Eurozone. Empirical research on KPI implementation in post-transition tourism economies remains limited, yet emerging studies in the Bulgarian context reveal growing institutional awareness of performance measurement as a driver of competitiveness. Doneva-Yankulova (2023) provides one of the earliest comparative analyses of KPI integration across Balkan EU countries, demonstrating how indicator-based governance enhances transparency and fosters convergence with European policy standards. These findings underscore the argument that KPI systems serve not only as analytical instruments but also as catalysts of institutional modernization within transitional governance frameworks.

2. Methodology for KPI selection and consultation

Developing a robust framework for Key Performance Indicators (KPIs) in tourism policy requires a methodology that combines analytical precision with participatory inclusiveness. Recognizing that performance measurement is a dynamic governance process rather than a static reporting exercise, this study employs a mixed-methods design that integrates

quantitative data analysis, qualitative consultations, and comparative evaluation. Such an approach acknowledges that tourism performance cannot be captured solely through statistical abstraction but must also reflect the lived realities and perceptions of diverse stakeholders.

The methodological design rests upon four foundational criteria – relevance, measurability, comparability, and data availability – each of which defines the credibility and practical utility of KPI systems. Relevance ensures that selected indicators correspond directly to strategic objectives outlined in Bulgaria’s National Strategy for Sustainable Tourism Development 2030 and the Eurozone Convergence Framework. Measurability requires that indicators be supported by reliable and recurring data sources, primarily those of the National Statistical Institute (NSI), Eurostat, and the UNWTO. Comparability enables longitudinal and cross-national benchmarking, situating Bulgaria’s tourism performance relative to that of Eurozone peers such as Croatia, Greece, and Portugal. Finally, data availability reflects institutional feasibility, ensuring that indicators can be collected and maintained without disproportionate administrative burdens.

The empirical base integrates national, European, and global datasets. Table 1 summarizes the principal data sources applied in the construction of the KPI framework.

Table 1. Key data sources for tourism policy KPI development

Data Source	Type of Data	Frequency	Application in KPI Framework
National Statistical Institute (Bulgaria)	Tourism arrivals, expenditure, accommodation statistics	Monthly/Annual	Economic and social KPIs
Eurostat	Comparative tourism statistics across EU member states	Annual	Benchmarking and competitiveness analysis
UNWTO	Global tourism trends and sustainability indicators	Annual	International comparison and best practices
Bulgarian Ministry of Tourism	Policy documents, strategic plans, implementation reports	Variable	Governance and policy KPIs
Industry surveys	Stakeholder perspectives, business performance	Ad hoc	Economic and governance KPIs
Resident surveys	Community attitudes, social impacts	Ad hoc	Social KPIs
Environmental monitoring systems	Resource use, emissions, waste generation	Variable	Environmental KPIs

Source: Author’s compilation based on Marinov et al. (2022) and Stankova & Vasenska (2021).

The integration of these data sources provided a multidimensional analytical foundation that bridges the quantitative and qualitative domains of tourism governance. As the OECD (2021) stresses, effective policy measurement requires that “what gets measured must also reflect what is experienced.” To this end, quantitative indicators were supplemented with qualitative insights from stakeholder consultations.

The consultation process involved semi-structured interviews with twenty-five informants from government, academia, and the private sector; six regional focus groups (Varna, Sofia, Bansko, Plovdiv, Veliko Tarnovo, and Burgas); an online survey of 142 tourism professionals; and a Delphi review conducted with eight national experts. This participatory architecture ensured methodological triangulation and enhanced legitimacy. The consultations revealed that while economic indicators dominate policy discourse, stakeholders increasingly demand attention to social, environmental, and governance dimensions – an observation consistent with Doneva-Yankulova (2023), who demonstrated that multi-dimensional KPI frameworks are indispensable for aligning Bulgarian tourism governance with European sustainability standards. Integration of KPIs into the policy cycle followed a five-stage model encompassing strategic alignment, baseline assessment, target setting, monitoring, and evaluation. This cyclic methodology operationalizes adaptive governance: indicators evolve alongside policy priorities, transforming measurement into a process of continuous learning. Baselines were established using NSI and Eurostat data; targets were benchmarked against Eurozone averages; and evaluation mechanisms were structured to provide feedback for strategic revision. **Limitations** of the methodology primarily concern data gaps in environmental monitoring and the underrepresentation of small and medium-sized enterprises in official statistics. Nonetheless, the approach provides a replicable model for embedding performance measurement in tourism governance. By combining quantitative rigor with stakeholder inclusivity, it transforms measurement from a bureaucratic exercise into an instrument of institutional modernization – an imperative underscored by the challenges of Bulgaria’s Eurozone transition.

3. KPI dimensions in tourism policy consulting

The multidimensional structure of KPI frameworks captures the complex reality of tourism as both an economic system and a governance domain. The present analysis examines four interrelated dimensions – economic, social, environmental, and governance – each of which represents a distinct yet interdependent aspect of policy performance.

Economic dimension

Economic indicators remain the foundation of tourism policy assessment, quantifying the sector’s contribution to national output, employment, and investment. Table 2 presents a comparative overview of tourism’s contribution to GDP in Bulgaria and selected Eurozone countries.

Table 2. Tourism contribution to GDP in Bulgaria and selected Eurozone countries (2022)

Country	Direct Contribution (% of GDP)	Total Contribution (% of GDP)	Growth Rate (%)	Eurozone Status
Bulgaria	5.6	12.2	8.4	Pre-accession
Croatia	11.3	24.5	6.2	Recent member
Greece	8.7	20.8	3.5	Established member
Portugal	6.8	17.1	4.2	Established member

Country	Direct Contribution (% of GDP)	Total Contribution (% of GDP)	Growth Rate (%)	Eurozone Status
Spain	5.9	14.6	3.8	Established member

Source: WTTC (2023); Eurostat (2023).

The data reveal that although Bulgaria's tourism sector is smaller in scale, its growth rate exceeds that of several mature Eurozone destinations, indicating latent convergence potential. Employment dynamics reinforce this finding. NSI (2022) data show that tourism supported approximately 190 000 full-time equivalents, yet wage levels remained 15–20 percent below the national average and seasonal volatility persisted. As Doneva-Yankulova (2023) argues, effective KPI frameworks must extend beyond job counts to assess employment quality, human-capital formation, and resilience to seasonality – dimensions critical for sustainable competitiveness.

Entrepreneurship and innovation constitute further components of the economic dimension. Bulgaria's tourism landscape is dominated by micro- and small enterprises whose innovation potential remains underutilized. Eurostat (2023) reports that SME survival rates average 56 percent in Bulgaria compared with 68 percent in Croatia and 72 percent in Austria. Digital adoption and KPI integration are closely correlated (Doneva-Yankulova, 2024), highlighting the strategic importance of innovation-driven measurement systems.

Expenditure data reinforce these insights. Table 3 presents tourist spending patterns by market segment, illustrating opportunities for diversification toward high-value niches.

Table 3. Tourist spending patterns in Bulgaria by market segment (2022)

Market Segment	Average Daily Expenditure (€)	Average Length of Stay (days)	Share of Total Receipts (%)	Year-on-Year Change (%)
Leisure tourists	85.3	5.2	68.5	12.4
Business tourists	142.6	2.8	15.3	8.7
Health/wellness tourists	110.2	7.5	12.2	15.6
Cultural tourists	95.7	4.3	4.0	18.2

Source: Bulgarian Ministry of Tourism (2023); author's calculations based on NSI data.

The data suggest that segments with higher expenditure and longer stays – wellness, cultural, and business tourism – remain underdeveloped, representing a major policy opportunity.

SOCIAL DIMENSION

The social dimension of KPI frameworks concerns tourism's impact on community welfare, inclusivity, and cultural vitality. Resident attitudes serve as an early indicator of sustainability. Surveys conducted for this research show that while 84 percent of respondents recognize tourism's economic benefits, only 52 percent view its social effects positively. Such ambivalence aligns with findings by Stankova & Vasenska (2021) and reflects the

need for institutionalized resident satisfaction indices and participatory planning mechanisms.

Tourism contributes to quality of life by enhancing infrastructure and public services, yet disparities remain between coastal and inland municipalities. Cultural heritage preservation further defines the social dimension. As Doneva-Yankulova (2023) demonstrates, heritage-rich destinations like Plovdiv and Veliko Tarnovo face dual pressures of revitalization and over-exposure. KPI systems that integrate heritage-site condition assessments and visitor-management indicators can balance conservation with economic gain.

ENVIRONMENTAL DIMENSION

Environmental KPIs align tourism policy with Bulgaria’s obligations under the EU Green Deal and SDGs. Table 4 compares water and waste metrics across destinations, revealing significant spatial variation.

Table 4. Water and Waste Management KPIs in selected bulgarian tourism destinations (2022)

Destina- tion	Water Consumption (litres per guest night)	Waste Generation (kg per guest night)	Recycling Rate (%)	Water Reuse Rate (%)
Sunny Beach	325.4	2.8	22.5	8.3
Bansko	278.6	2.3	35.2	12.7
Veliko Tarnovo	215.3	1.9	41.8	15.4
Sofia	198.7	1.7	45.6	18.2
EU Bench- mark	180.0	1.5	60.0	25.0

Source: Bulgarian Ministry of Environment and Water (2023); European Environment Agency (2023).

The results show that while urban destinations are approaching EU benchmarks in efficiency, coastal resorts remain resource-intensive. Improving water reuse and waste recycling thus becomes a priority as Eurozone integration introduces stricter sustainability reporting.

GOVERNANCE DIMENSION

Governance indicators evaluate institutional capacity, coordination, and policy coherence – the backbone of effective tourism management. Table 5 summarizes expert assessments of Bulgaria’s governance performance relative to Eurozone benchmarks.

Table 5. Institutional Capacity Indicators for Tourism Governance in Bulgaria (2022)

Capacity Dimension	National Level (1–5)	Regional Level (1–5)	Local Level (1–5)	Eurozone Benchmark (1–5)
Strategic planning	3.8	2.7	2.1	4.2
Implementation capacity	3.5	2.5	2.3	4.0
Monitoring and evaluation	3.2	2.2	1.8	3.9
Stakeholder engagement	3.0	2.8	3.2	3.7
Resource adequacy	3.3	2.4	2.0	3.8

Source: Author’s analysis based on expert panel assessments (n = 8) and European Commission (2023).

The asymmetry between national and sub-national capacity highlights the urgency of institutional reform. Strengthening data infrastructure, enhancing local analytical competence, and fostering inter-agency cooperation are preconditions for alignment with Eurozone standards. As Doneva-Yankulova (2023) emphasizes, governance maturity is both a prerequisite and an outcome of KPI institutionalization: measurement builds capacity, and capacity sustains measurement. Together, these four dimensions confirm that KPI frameworks must transcend economic accounting and evolve into integrative governance systems. They enable Bulgaria not only to quantify progress but to transform measurement into a continuous dialogue between evidence, policy, and society – a defining characteristic of mature Eurozone governance.

4. The role of consulting in policy design and implementation

Tourism policy consulting represents an increasingly strategic interface between academic research, public administration, and market practice. In transitional economies such as Bulgaria, where institutional capacities and analytical infrastructures are still consolidating, consultants operate as mediators who translate complex policy goals into measurable operational outcomes. Their role extends beyond technical expertise; it embodies a process of knowledge transfer, capacity building, and epistemic bridging between global standards and local realities.

The growing institutionalization of performance measurement has amplified the significance of consulting practices in tourism governance. Consultants function as interpretive agents, transforming abstract strategic visions into coherent frameworks of Key Performance Indicators (KPIs) that align with European policy models. In the Bulgarian context, such mediation has become indispensable due to the dual imperatives of Eurozone convergence and the European Green Deal, both of which demand quantifiable accountability in public-sector performance. As Dimitrov (2023) observes, consulting ensures that policy design evolves from a descriptive document into a living system of feedback and evaluation. Doneva-Yankulova (2023) further underlines that consulting in transitional tourism economies operates as a mechanism of institutional learning. Her analysis demonstrates that the integration of external expertise not only enhances methodological rigor but also catalyzes a broader professionalization of public administration. Consultants, by importing

comparative knowledge from mature Eurozone destinations, provide both diagnostic and prescriptive insights: diagnostic because they reveal performance gaps, and prescriptive because they define how those gaps may be closed through KPI-based governance. In this sense, consulting becomes an iterative process of co-creation rather than a transactional service. Evidence from Bulgaria confirms that consultancy-led interventions have contributed substantially to the modernization of tourism governance. Projects such as the *Tourism Satellite Account* (2018–2021), the *Rhodope and Rila-Pirin Destination Models* (2020–2023), and the *Varna Smart Tourism Strategy 2025* introduced participatory planning, digital monitoring, and cross-sectoral coordination mechanisms that were previously absent from the administrative landscape. These initiatives have demonstrated that the introduction of KPI systems is most effective when facilitated by independent consultants capable of synthesizing data analytics with stakeholder facilitation. The independence of consulting teams allows for objective assessment, methodological innovation, and impartial validation of policy instruments – qualities that are particularly important when public institutions face pressures of political expediency or administrative inertia.

Nonetheless, consulting is not without challenges. Short project cycles often preclude long-term follow-up, leading to fragmented institutional memory. Moreover, asymmetries in expertise between consultants and administrative staff can generate dependency rather than empowerment. Ethical issues also arise when consultants are contracted to validate rather than evaluate existing policies. To address these risks, Doneva-Yankulova (2024) recommends establishing ethical standards for public-policy consulting, including transparency clauses, conflict-of-interest declarations, and capacity-transfer obligations. Such codification would transform consulting into an institutionalized learning function, ensuring that external interventions build sustainable competencies within public agencies. The relationship between consulting and performance measurement is therefore dialectical: consultants design the frameworks that enable accountability, while KPIs create the informational conditions for evidence-based consulting. In the Bulgarian case, this synergy manifests as a gradual convergence between academic research, policy analysis, and administrative implementation. Universities such as New Bulgarian University and the University of National and World Economy have begun to partner with ministries and municipalities to produce joint evaluations and indicator frameworks. These partnerships mark a qualitative shift from ad hoc projectism to institutionalized consultancy culture. As Bulgaria progresses toward Eurozone accession, the embedding of such professional intermediaries will become essential for harmonizing national policies with European performance regimes.

5. Case studies and best practices

Comparative experience from leading destinations demonstrates how performance-based governance can reconcile economic growth with sustainability and social legitimacy. The selected cases – Barcelona, Vienna, Singapore, and Dubai – represent distinct models of KPI integration that together illustrate the adaptability of measurement systems to varying policy environments. Each case embodies a synthesis of quantitative precision and qualitative understanding, offering applicable lessons for Bulgaria's transition toward Eurozone-aligned governance.

Barcelona stands as a paradigmatic example of data-driven management in addressing overtourism. The city's Strategic Tourism Plan integrates real-time monitoring dashboards that visualize visitor density, resource consumption, and resident sentiment. By embedding sustainability metrics directly into its regulatory framework, Barcelona has achieved a measurable reduction in spatial concentration and a 25 percent decline in per-visitor carbon emissions between 2015 and 2020 (Ajuntament de Barcelona, 2021). The key insight from this case lies in the transformation of KPIs from administrative tools into instruments of democratic governance: data transparency has allowed citizens to monitor tourism impacts and participate in evidence-based decision-making.

Vienna offers a contrasting model rooted in cultural sustainability. The Vienna Tourism Strategy 2025 employs a balanced-scorecard system that evaluates performance from four perspectives – visitor, resident, business, and environment. The city prioritizes qualitative outcomes such as cultural participation, creative-sector engagement, and resident well-being alongside traditional metrics of arrivals and revenue. According to the Vienna Tourist Board (2022), this pluralistic measurement culture has strengthened both policy coherence and social acceptance of tourism. For Bulgarian destinations like Plovdiv and Veliko Tarnovo, Vienna's approach demonstrates how heritage-based tourism can be monitored through integrated cultural and governance indicators that protect authenticity while fostering growth.

Singapore exemplifies the technological frontier of KPI implementation. Through its *Tourism Industry Transformation Map* and national digital dashboards, the city-state has institutionalized innovation as a measurable policy objective. Quantitative targets – such as 80 percent SME digital adoption and 4.5 percent annual productivity growth – are systematically tracked, and policy adjustments are made in real time (Singapore Tourism Board, 2023). Doneva-Yankulova (2024) highlights Singapore's case as an archetype of “smart governance,” where data interoperability enables agile policy response and cross-sector collaboration. For Bulgaria, the lesson lies in investing in digital infrastructure that connects local data systems with national tourism observatories, thereby embedding analytical capability into everyday governance.

Dubai, by contrast, demonstrates hierarchical integration of KPIs across strategic, tactical, and operational levels. The *Dubai Tourism Vision 2030* framework aligns top-tier economic diversification indicators with mid-level market segmentation targets and micro-level operational benchmarks. This multi-layered measurement architecture creates coherence between long-term strategy and short-term implementation. The emirate's approach shows that the value of KPIs lies not only in their content but in their structural placement within the policy cycle. For Bulgaria, whose tourism governance remains fragmented across ministries and municipalities, the Dubai model underscores the necessity of vertical integration – linking national strategy to municipal execution through consistent indicator logic.

Across these diverse cases, several principles emerge. First, successful KPI frameworks are inseparable from governance quality; they require institutional cultures that value transparency, collaboration, and adaptability. Second, measurement systems must evolve as learning mechanisms rather than control instruments. Third, technological innovation can democratize data access, enabling participatory governance. Finally, international

benchmarking must be contextualized – what succeeds in Singapore’s centralized environment may require adaptation to Bulgaria’s decentralized administrative structure. The comparative synthesis supports the argument advanced by Doneva-Yankulova (2023) that KPI systems represent both analytical and normative frameworks. They define how performance is understood, communicated, and contested within tourism policy. For Bulgaria, adopting such systems entails more than technical harmonization; it signifies a shift in governance ethos – from reactive management to proactive, evidence-based stewardship of national tourism development.

6. Discussion

The results of this research confirm that Key Performance Indicators (KPIs) function not merely as quantitative instruments but as cognitive frameworks through which institutions define, negotiate, and communicate the meaning of success in tourism policy. In the Bulgarian context, where the transition toward Eurozone membership entails structural and procedural modernization, KPIs provide the necessary bridge between strategic ambition and administrative capability. Their function extends beyond measurement: they constitute a language of governance through which accountability, transparency, and institutional learning can be expressed. The implementation of KPI systems offers clear advantages. It enhances transparency by converting policy rhetoric into measurable outcomes, strengthens coordination by aligning multiple stakeholders around shared indicators, and enables international comparability. Moreover, it facilitates evidence-based policymaking – a prerequisite for Eurozone convergence, where fiscal discipline and performance verification are intertwined. However, as Marinov and Assenova (2020) caution, KPIs are “aids to judgment, not substitutes for it.” Quantification without interpretation risks reducing governance to a technocratic exercise. Hence, the challenge lies not in the existence of indicators but in their meaningful integration into institutional learning cycles. Empirical evidence from Bulgaria reveals the persistent tension between ambition and implementation. Despite growing awareness of performance measurement, administrative fragmentation and uneven regional capacity hinder the consistency of data collection and reporting. Institutional asymmetry between national and local levels remains a defining characteristic. While ministries may formulate sophisticated KPI frameworks, municipal administrations often lack the resources or expertise to operationalize them. Consulting interventions – when strategically designed – can mitigate this gap by transferring know-how and by creating intermediary structures that synchronize national strategy with local practice (Dimitrov, 2023; Doneva-Yankulova, 2023). Another key insight concerns the dual necessity of standardization and contextual adaptation. Bulgaria’s adherence to Eurostat and European Tourism Indicator System (ETIS) norms ensures comparability but cannot substitute for localized understanding. A two-tiered structure is therefore advisable: a core set of harmonized indicators ensuring international consistency, complemented by locally adaptive metrics reflecting regional diversity, seasonality, and socio-cultural variables. This layered architecture transforms KPI systems into dynamic governance tools rather than static checklists.

Integration of quantitative and qualitative approaches remains a decisive factor for interpretive depth. Statistical series describe the magnitude of change, but qualitative inquiry reveals its meaning. As Dimitrova and Stoyanov (2021) note, “numbers trace the outline of

progress, narratives fill its substance.” This complementarity is particularly critical for tourism, whose impacts are embedded in community identity, cultural heritage, and environmental quality – all dimensions that resist purely numerical representation. The study therefore advocates for mixed-methods evaluation, combining econometric analysis with participatory consultation and ethnographic observation. The digital transformation of governance is reshaping the epistemology of measurement itself. Artificial intelligence, big data, and sensor-based monitoring allow real-time tracking of visitor flows, emissions, and satisfaction levels. These technologies render tourism measurement more granular, predictive, and interactive. However, they also necessitate new competences in data management, ethics, and cybersecurity. For Bulgaria, this technological horizon represents both an opportunity and a challenge: success will depend on the state’s ability to invest in analytical infrastructure and to cultivate a data-literate public administration capable of transforming information into insight.

7. Conclusions and policy recommendations

This study examined the strategic role of Key Performance Indicators in tourism policy design and implementation, focusing on Bulgaria’s transition toward Eurozone accession. The research integrated quantitative data analysis, stakeholder consultation, and comparative case studies to develop a multidimensional framework encompassing economic, social, environmental, and governance dimensions. The findings confirm that KPI systems can transform tourism policy from a declarative instrument into an evidence-based governance mechanism, provided that they are contextualized, participatory, and technologically enabled.

KEY FINDINGS

The study’s results can be summarized in six interrelated findings:

1. **Multidimensional integration:** Effective tourism measurement requires the synthesis of economic, social, environmental, and governance indicators, which together capture the systemic character of tourism development.

2. **Contextual adaptation:** KPIs must align with Eurozone standards while reflecting Bulgaria’s institutional and developmental realities, including regional disparities and transitional dynamics.

3. **Institutional capacity:** The operational success of KPI systems depends on human resources, technical infrastructure, and inter-agency coordination; these remain unevenly distributed across administrative levels.

4. **Stakeholder legitimacy:** Broad consultation enhances indicator relevance, strengthens social acceptance, and ensures that tourism growth contributes to collective welfare.

5. **Consulting as a bridge:** Professional consulting mediates between strategic objectives and measurable action, fostering methodological discipline and policy learning.

6. **International learning:** Benchmarking against best practices – from Vienna’s cultural scorecards to Singapore’s smart dashboards – accelerates the institutional modernization of Bulgarian tourism governance.

STRATEGIC RECOMMENDATIONS

The following strategic directions are proposed for policymakers, researchers, and practitioners:

- **Develop a national KPI framework** aligned with Eurozone convergence criteria and Bulgaria's *Tourism Strategy 2030*, integrating sustainability and competitiveness objectives.
- **Institutionalize a national tourism observatory**, functioning as a data hub and analytical center modeled after ETIS observatories in Spain and Portugal, responsible for harmonized data collection, open-access dashboards, and annual reporting.
- **Strengthen regional and municipal capacity** through targeted training, inter-agency coordination, and the establishment of regional KPI units that translate national standards into local realities.
- **Leverage digital technologies** to implement real-time monitoring, automate data analysis, and improve transparency. Open-data platforms and public dashboards can enhance both accountability and citizen engagement.
- **Embed stakeholder participation** at all stages of measurement – from indicator design to evaluation – ensuring that local communities and private actors co-own the process.
- **Integrate sustainability metrics** explicitly referencing the EU Green Deal and the UN Sustainable Development Goals, embedding climate, resource, and inclusivity indicators into every layer of tourism policy.
- **Institutionalize consulting standards** that guarantee methodological transparency, capacity transfer, and ethical accountability, transforming external expertise into a permanent component of public-sector learning.

IMPLEMENTATION ROADMAP

A phased implementation model is recommended to ensure gradual and sustainable institutionalization:

- **Phase 1 (2025–2026):** Pilot KPI frameworks in three flagship destinations – Sofia, Varna, and Bansko – testing data structures and local adaptability.
- **Phase 2 (2026–2028):** Expand to national coverage, refine indicators through feedback loops, and align data reporting with Eurostat protocols.
- **Phase 3 (Post-2028):** Institutionalize KPI reporting as a statutory obligation, ensuring continuity, comparability, and public transparency.

Each phase should be accompanied by annual monitoring reports, stakeholder reviews, and digital dissemination to maintain credibility and iterative learning.

Future research directions: Further research should investigate the longitudinal effects of KPI institutionalization on policy coherence, administrative behavior, and investment outcomes. Comparative subnational analyses could reveal regional innovation patterns and disparities in implementation capacity. Methodological innovation should also

focus on quantifying social and cultural impacts, an area still underrepresented in current models. The integration of artificial intelligence for predictive policy evaluation and the use of big-data analytics for visitor-flow optimization represent promising frontiers for tourism research in Bulgaria. **Limitations:** The study acknowledges several constraints. Data limitations persist, particularly at the local level; community participation was uneven across regions; and the temporal frame (2023–2025) captures only the early stages of Eurozone transition. These constraints do not diminish the validity of findings but rather highlight the need for longitudinal continuity and adaptive methodology. **Concluding statement:** Ultimately, the introduction of KPI frameworks into Bulgarian tourism governance is not a bureaucratic exercise but a paradigm shift. It signifies the maturation of policy culture toward transparency, reflexivity, and strategic coherence. By institutionalizing evidence-based measurement, Bulgaria can align its tourism system with the macroeconomic and ethical standards of the Eurozone while preserving its cultural and environmental identity. As Doneva-Yankulova (2023) concludes, „measurement, when embedded in governance, becomes not a mirror of performance but an engine of transformation“.

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ECONOMIC DEVELOPMENT OF LITHUANIA IN THE PERIOD BEFORE AND AFTER THE ADOPTION OF THE EURO

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Abstract

In this paper, the dynamics of key economic indicators for Lithuania in the period before and after the adoption of the euro have been analyzed. The nominal and real convergence of the country towards the euro area economy has been studied. The impact of euro adoption in Lithuania on the economic indicators included in the paper has been examined.

Keywords: Lithuania, main economic indicators, euro area, nominal convergence, real convergence

JEL: F36

INTRODUCTION

After joining the EU on the 1st of May 2004 (https://european-union.europa.eu/principles-countries-history/eu-countries/lithuania_en), Lithuania started the process of integration in the Common Economic and Monetary Union. The first attempt to introduce the euro in 2007 was unsuccessful due to non-compliance with the convergence criterion related to price stability. Subsequently, the economic recession in Lithuania during the global financial and economic crisis led to a delay in the introduction of the common European currency. Lithuania became the nineteenth member of the eurozone on the 1st of January 2015 (Startienė et al., 2019, p. 202).

The paper examines the change in key economic indicators for Lithuania over the period 2004–2024. This period covers the country's membership in the EU, the years before and after the adoption of the euro. The analyzed period also includes the global financial crisis and the Covid-19 pandemic. The source of the data for the studied indicators is Eurostat.

The main objective of this paper is to examine the impact of accession to the euro area on certain economic indicators in Lithuania.

In order to realize the objective, the following concrete tasks have been outlined in the paper:

1. Examination of the impact of the introduction of the euro on inflation in Lithuania.
2. Study of the real convergence of the Lithuanian economy with the EU economy at the time of adoption of the euro.
3. Analysis of changes in certain economic indicators for Lithuania during the period 2004 – 2024.

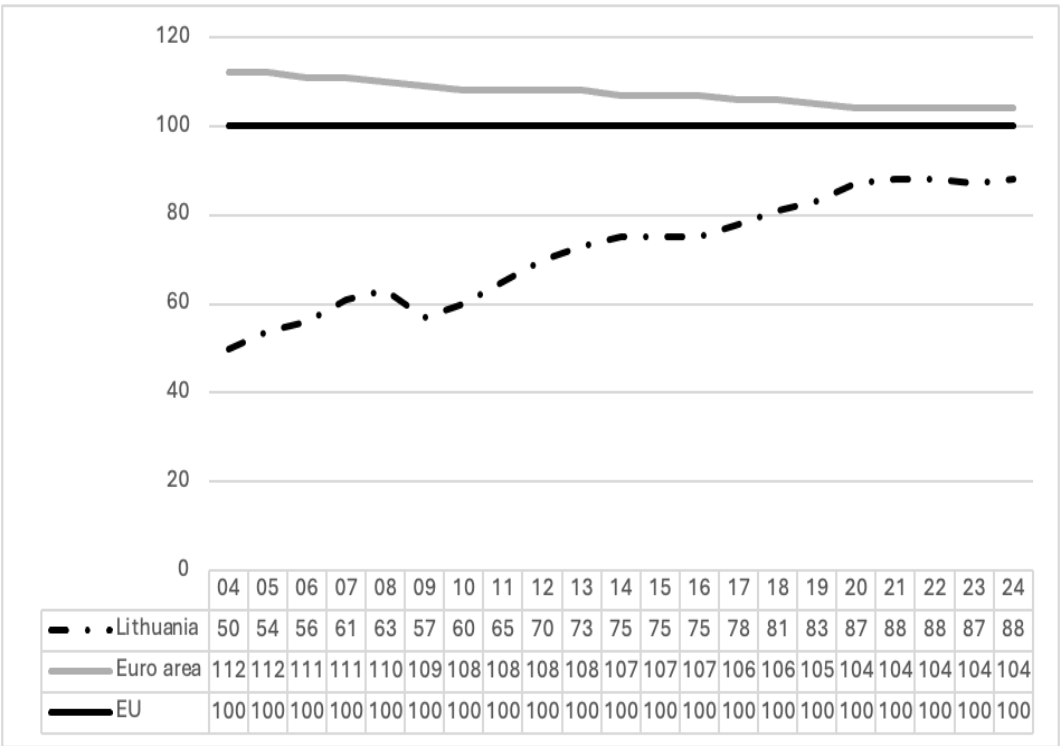
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Object of the investigation are key economic indicators for Lithuania. Subject of the examination is the influence of the adoption of the euro on the examined indicators for the Lithuanian economy.

The main thesis of the research is that at the end of the analyzed period the achieved real convergence of the Lithuanian economy towards the economy of the EU is high.

1. Analysis of the dynamics of some economic indicators for Lithuania in the period 2004–2024

Figure 1 shows the change in the indices of GDP per capita, measured by purchasing power parities, for Lithuania, the European Union, and the euro area in the period 2004 – 2024.



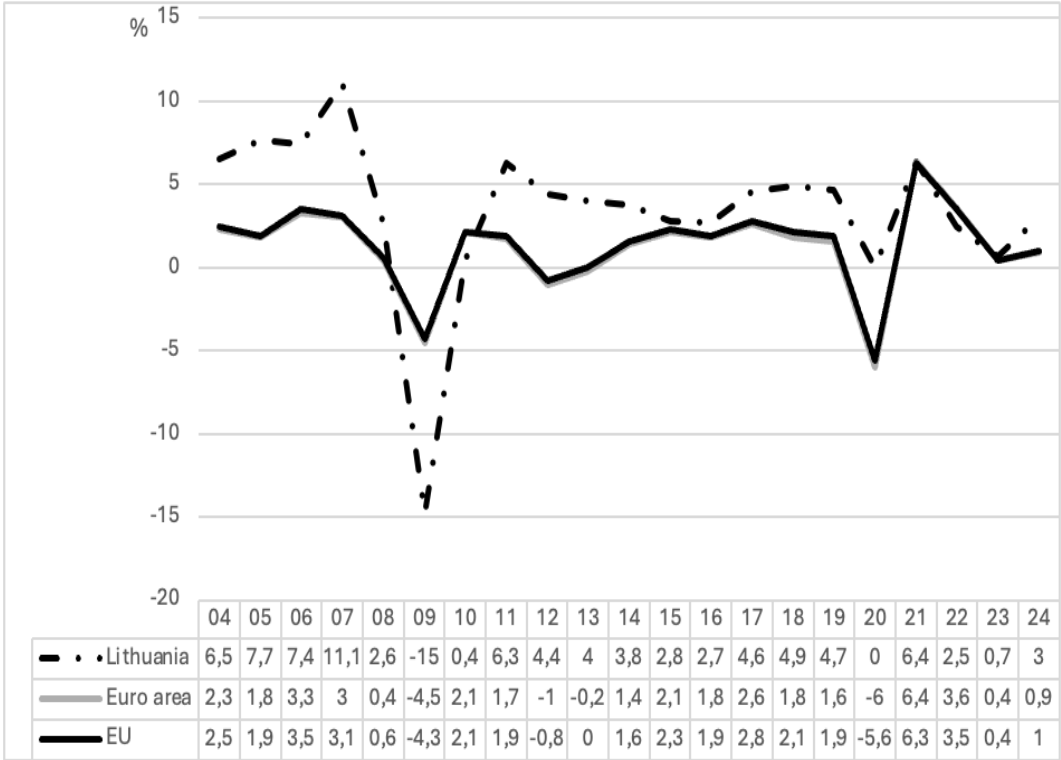
Source: Eurostat

Fig. 1. Indices of GDP per capita, measured by purchasing power parities, for Lithuania, the European Union, and the euro area in the period 2004 – 2024 (EU27_2020=100)

Data presented in figure 1 show that in 2004 GDP per capita in Lithuania was 50% lower than the average GDP per capita in the EU. In the following years until 2008, a significant increase in GDP per capita was observed in Lithuania. In 2009, a decline was recorded, which can be explained by the negative impact of the global financial crisis on the Lithuanian economy. In each subsequent year, a rise was recorded until 2015 when Lithuania became a member of the euro area and the value of the indicator for the country was

25% lower than the average GDP per capita for the EU. Over the period 2014 – 2016, GDP per capita in Lithuania remained unchanged. The values of the analyzed indicator for the country grew until 2021 when it reached its highest value during the period under review as GDP per capita in Lithuania was 12% lower than the average GDP per capita for EU member states. After that, till 2024, the indicator for the country remained at similar levels. The degree of convergence of Lithuania towards the economy of the EU in terms of GDP per capita rose significantly during the period of its membership in the Union and the achieved degree of real convergence in 2024 is very high.

Figure 2 presents change in GDP compared with the previous year at market prices in Lithuania, the European Union and the euro area in the period 2004–2024.



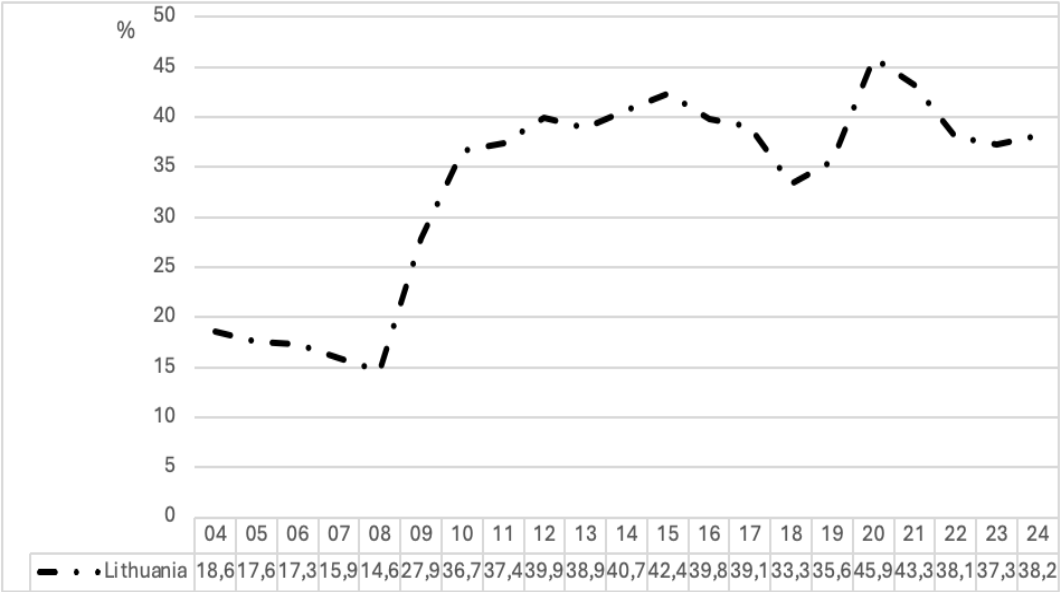
Source: Eurostat

Fig. 2. Change in GDP compared with the previous year at market prices in Lithuania, the European Union and the euro area in the period 2004 – 2024 (%)

In the period 2004-2007, Lithuania's GDP grew on an annual basis and economic growth in the country was much higher than the average growth rates for the EU and the euro area. In 2008, Lithuania's GDP growth was much lower and in 2009 GDP fell by 14.8% compared to the previous year. This trend can be explained by the negative effects of the global financial and economic crisis on the Lithuanian economy. The decline in the EU and the euro area in the same year amounted to 4.3% and 4.5% respectively. In 2010, the country's GDP rose again by 0.4% on an annual basis and in 2011 economic growth was 6.3%. By

the end of the reviewed period, the increase in GDP in Lithuania compared to the previous year was significantly lower than in the period preceding the global financial and economic crisis. During most years of the analyzed period, economic growth in the country exceeded that of the euro area and the EU, which contributed to the process of real convergence of the Lithuanian economy towards the EU economy. In the period till 2015, when the country joined the euro area, economic growth in Lithuania exceeded EU and euro area levels to a greater extent in comparison with the years of the country's membership in the euro area. The economic crisis caused by the pandemic caused GDP to decline in 2020 in the EU and the euro area by 5.6% and 6% respectively while in Lithuania a zero value for the indicator was recorded. As a whole, during the period analyzed in the country a reduction in GDP was noted only in 2009. It should be noted that over the whole period considerable dynamics were observed in the change in Lithuania's GDP on an annual basis.

Figure 3 presents the dynamics of the General government debt of Lithuania over the period 2004–2024.



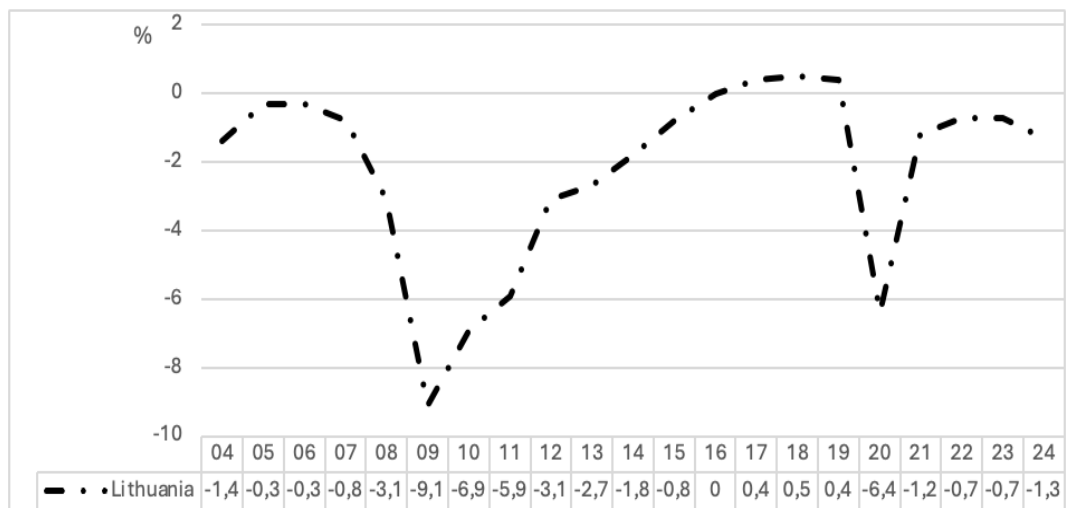
Source: Eurostat

Fig. 3. General government debt of Lithuania over the period 2004-2024 (% of GDP)

For the period 2004-2024, Lithuania's public debt as a share of GDP did not exceed the reference value of 60% according to the Stability and Growth Pact and the Maastricht Treaty. Initially, Lithuania's public debt-to-GDP ratio fell till 2008. In 2009 and 2010, public debt as a share of GDP surged up sharply and reached 27.9% and 36.7% respectively. In the following years, the indicator continued to climb but more slowly and in 2015 it amounted to 42.4%. A decrease in the country's public debt-to-GDP ratio followed until 2018 and a slight pick-up again in 2019 and a more significant rise in 2020 when the highest value in the analyzed period of 45.9% was recorded. After that, Lithuania's public debt as a share of GDP dropped by the end of the period. An increase in the value of the indicator

for Lithuania was observed during the global financial and economic crisis and the economic crisis triggered by the Covid-19 pandemic. After the global financial and economic crisis public debt as a share of GDP remained high until the end of the period under review.

Figure 4 shows the change in budget deficit or surplus in Lithuania over the period 2004 – 2024.

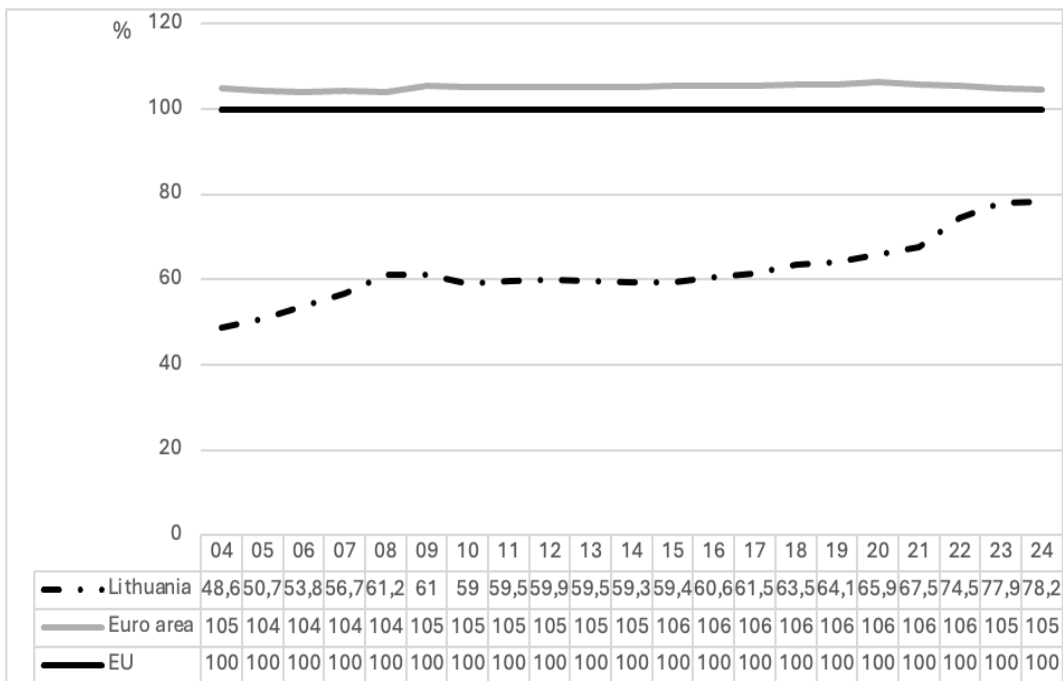


Source: Eurostat

Fig. 4. Budget deficit / surplus in Lithuania over the period 2004 – 2024 (% of GDP)

During most years of the period 2004-2024, budget deficits below the EU reference value of 3% of GDP were recorded in Lithuania. As a result of the global financial crisis and the economic crisis caused by Covid-19, Lithuania's budget deficit exceeded 3% of GDP in the period 2008 – 2012, as well as in 2020. In 2009, the budget deficit equalled 9.1% of GDP, in 2010 it was 6.9% of GDP, and in 2011 it was 5.9% of GDP respectively. Under the impact of the global financial crisis, Lithuania's budget deficit as a share of GDP increased significantly and the country did not meet this criterion for adopting the euro as the values of the indicator exceeded 3%. After accession to the euro area in 2015, in the following year Lithuania's general government budget was in balance, after which budget surpluses were registered in the period 2017 – 2019 until the pandemic. A large budget deficit was also recorded in 2020 due to the coronavirus pandemic amounting to 6.4% of GDP. After that, Lithuania's state budget was with a deficit until 2024. Over the analyzed period, significant dynamics were observed in the change in the values of the indicator.

Figure 5 shows the dynamics of price level indices in Lithuania, the European Union and the euro area over the period 2004 – 2024. They provide a comparison of countries' price levels relative to the EU average and are calculated using purchasing power parities.

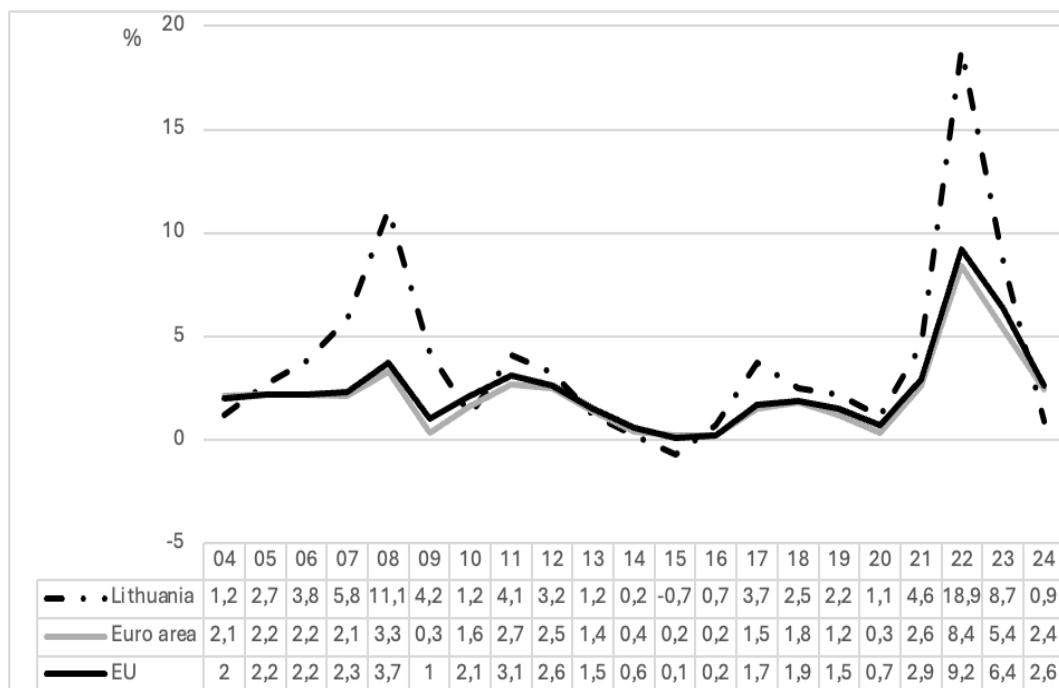


Source: Eurostat

Fig. 5. Price level indices in Lithuania, the European Union and the euro area over the period 2004 – 2024 (EU-27_2020=100) (%)

In 2004, when Lithuania became a member of the EU, the price level in the country was 51.4% lower than the average for EU member states. The price level in Lithuania rose steadily till 2008 when it reached 61.2% of the average value for the EU. In 2009 and 2010, a slight drop in the values of the indicator was noted after which it remained at similar levels until 2015 when it reached 59.4% of the average price level for the EU. Lithuania joined the euro area with a good degree of convergence in terms of price levels with the economy of the EU. Following the adoption of the euro the process of price convergence continued and an increase in the values of the indicator was again registered in each of the years until the end of the analyzed period. In 2024, the price level in Lithuania reached 78.2% of the average level for the EU i.e. the degree of convergence is high.

Figure 6 presents the dynamics of Harmonized Index of Consumer Prices (HICP) in Lithuania, the European Union and the euro area for the period 2004 – 2024.



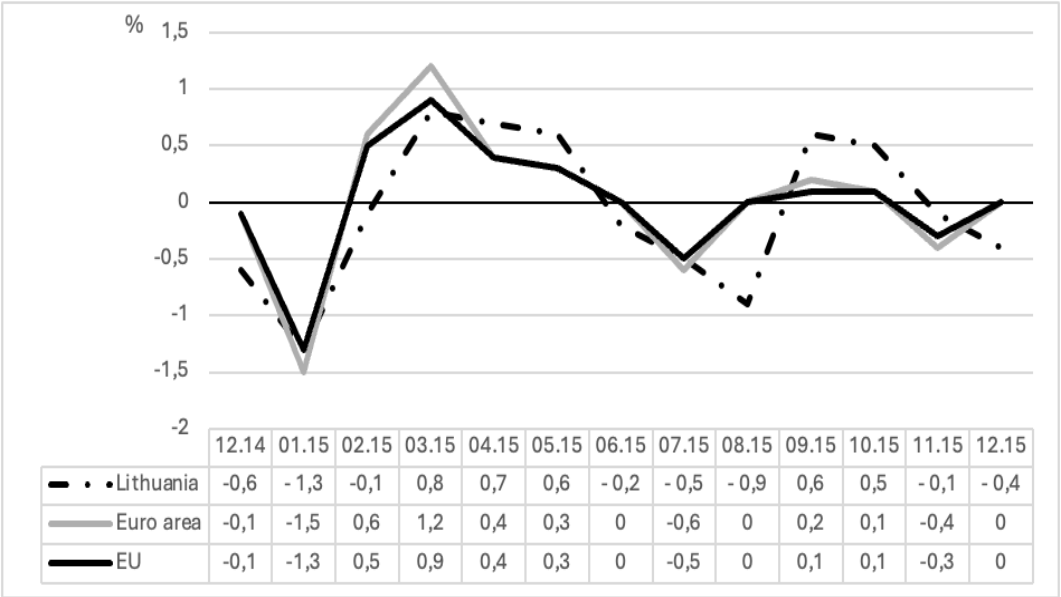
Source: Eurostat

Fig. 6. HICP in Lithuania, the European Union and the euro area for the period 2004 – 2024 (%)

In 2007, average annual inflation in Lithuania, measured by consumer prices, stood at 5.8%, and in 2008 it was 11.1%, which could be explained by the rise in food and crude oil prices on world markets. Between 2005 and 2008, the inflation differential between Lithuania and the average value for the EU grew reaching its highest level in 2008 at 7.4 percentage points. To a large extent, the global financial and economic crisis and the debt crisis in the euro area affected the change in the HICP. In 2008, the HICP for the EU equalled 3.7% and for the euro area it was 3.3%. The global financial and economic crisis caused much higher inflation in Lithuania than in the EU and the euro area. The HICP in Lithuania fell significantly in 2009 to 4.2%. In 2009, the inflation differential between Lithuania and the EU average stood at 3.2 percentage points. In the following years, a reduction in the value of the indicator was observed in the country. In the years preceding accession to the euro area, average HICP values for the EU exceeded those for Lithuania which contributed the country to meet the price stability criterion. In 2014, a fall in the HICP was also recorded in Lithuania. In 2015, when Lithuania adopted the euro, deflation of 0.7% was registered in the country. In the same year, the HICP in the EU and the euro area was at low levels. After that, a slight pickup was recorded in Lithuania until 2017 followed by a period of decrease of the average annual inflation until 2021 when a moderate rise was again noted. It should be noted that in the EU and the euro area a decline was also registered from 2011 to 2015 and then growth in the HICP till 2018. In 2022, the HICP in the country rose sharply to 18.9%, exceeding more than twofold the values for the EU and the euro area, where a

significant increase was also observed. In 2023, inflation in Lithuania continued to be high at a value of 8.7%. In 2024, the rise in prices in the country was limited.

During most years in the period 2004-2024, inflation in Lithuania, measured by the HICP, exceeded the average inflation in the EU. Over the reviewed period, the dynamics of the indicator values for the country were characterized by large fluctuations ranging from -0.7% to 18.9%. The surge in price levels in Lithuania after 2004 was largely due to economic convergence with the EU.

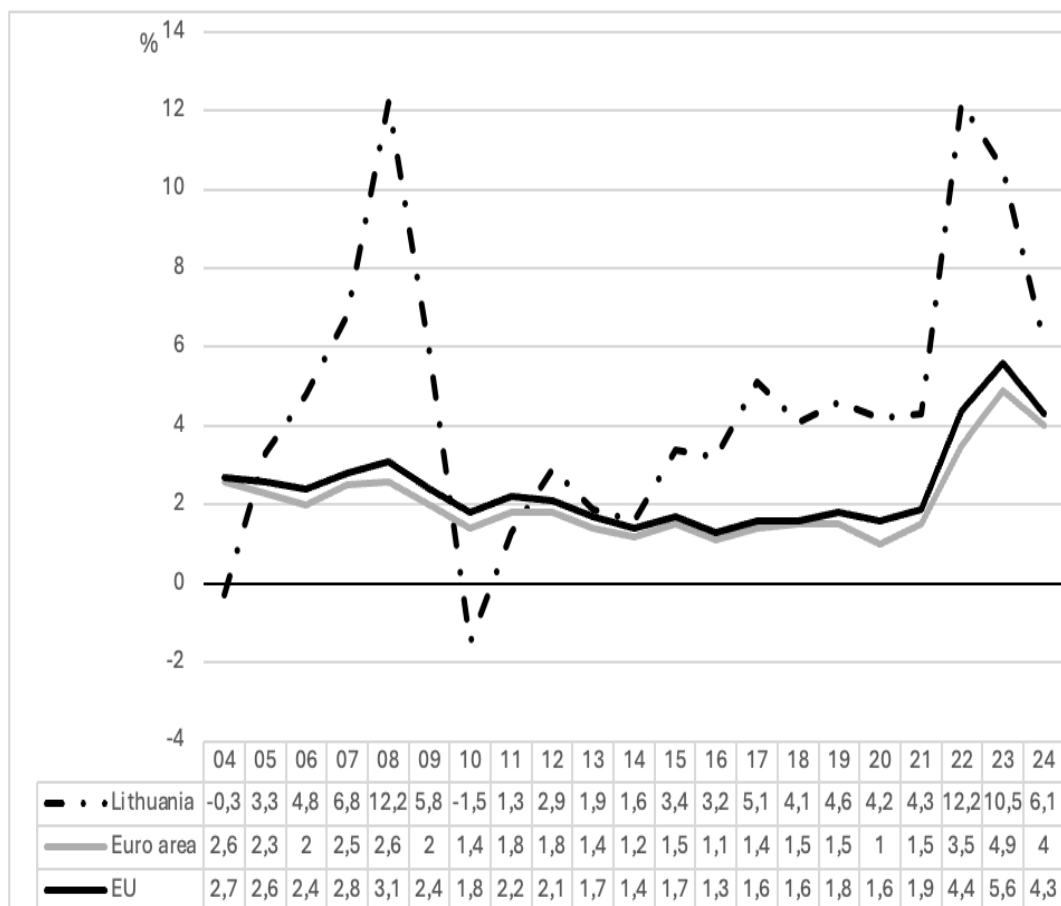


Source: Eurostat

Fig. 7. HICP in Lithuania, the European Union and the euro area for the period December 2014 – December 2015 (%)

Figure 7 shows the dynamics of the HICP on a monthly basis in 2015 when Lithuania became a member of the euro area. In more than half of the months of the year, deflation was recorded in the country, while in the remaining months, HICP values were low. It can be concluded that, overall, the introduction of the single currency did not cause inflation in Lithuania.

Figure 8 shows the dynamics of HICP for services in Lithuania, the European Union and the euro area during the period 2004 – 2024.

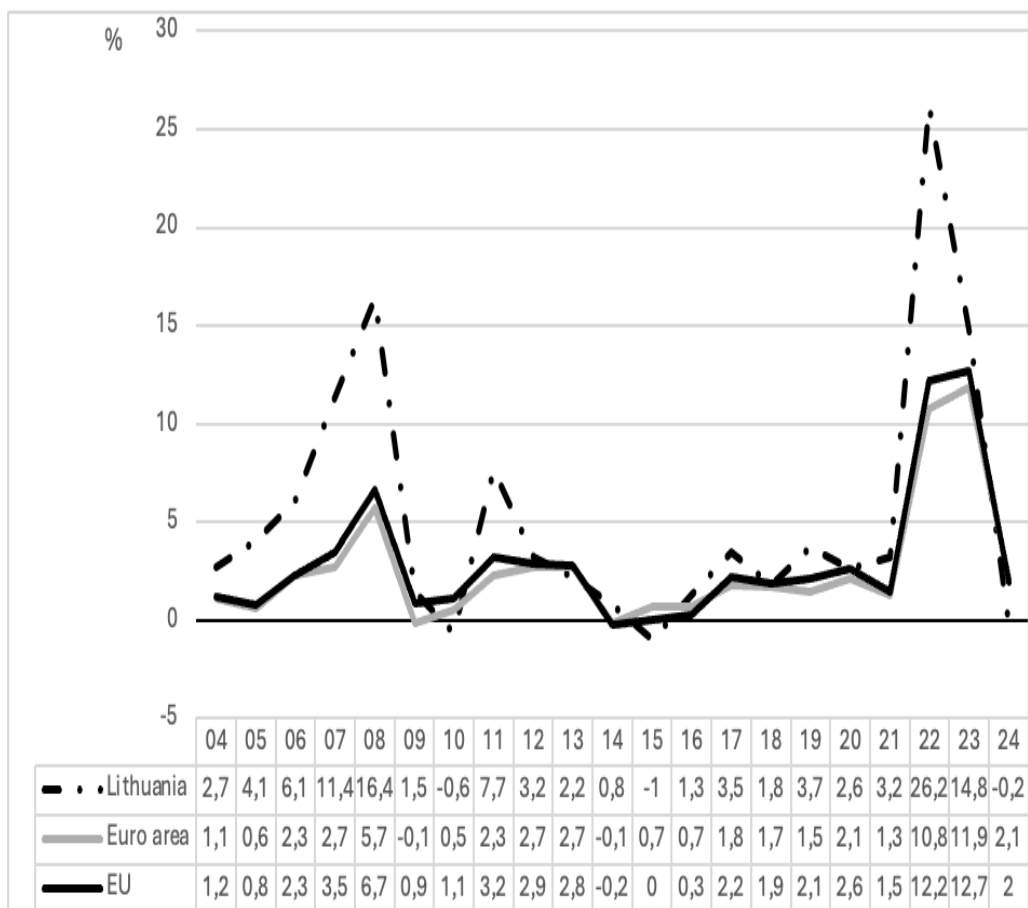


Source: Eurostat

Fig. 8. HICP for services in Lithuania, the European Union and the euro area for the period 2004 – 2024 (%)

In Lithuania, 2015 marked the beginning of a period of several years during which service prices rose at a higher rate than in the EU and the euro area. The adoption of the euro caused inflation in services in the country.

Figure 9 presents the change in HICP for food in Lithuania, the European Union and the euro area in the period 2004 – 2024.

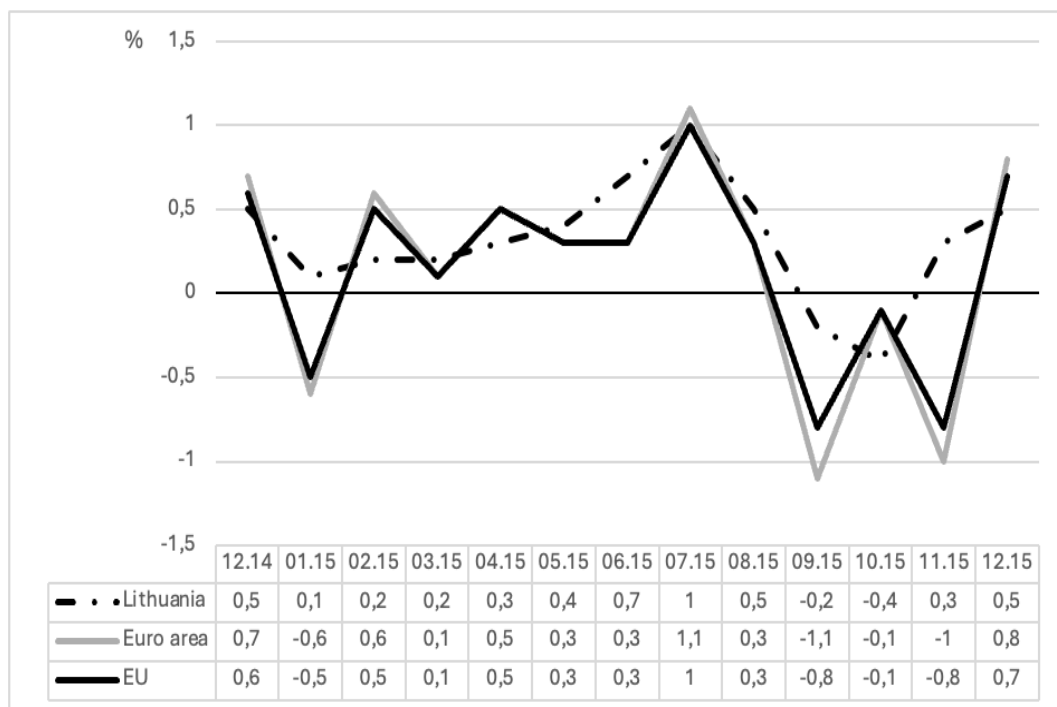


Source: Eurostat

Fig. 9. HICP for food in Lithuania, the European Union and the euro area for the period 2004 – 2024 (%)

From the data presented in figure 9, it can be seen that in 2015, upon joining the euro area, deflation for food was recorded in Lithuania. In the following years, the HICP values for food in the country were higher compared to the EU and the euro area.

Figure 10 shows the change of HICP for services in Lithuania, the European Union and the euro area for the period December 2014 – December 2015.

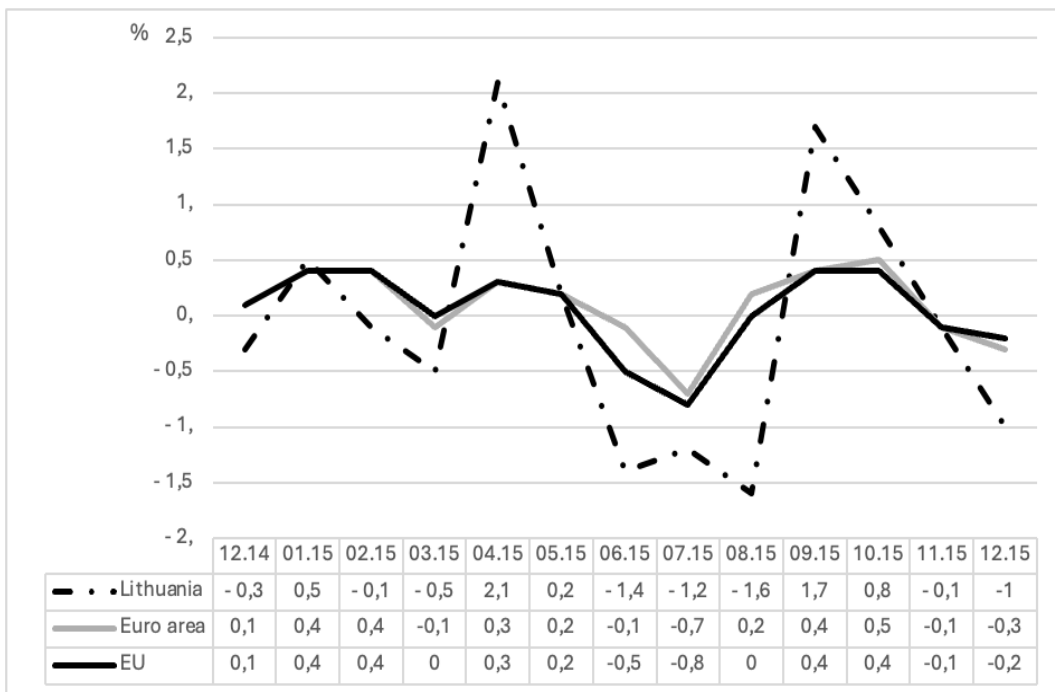


Source: Eurostat

Fig. 10. HICP for services in Lithuania, the European Union and the euro area for the period December 2014 – December 2015 (%)

Monthly data on the change in the HICP for services in Lithuania in 2015 do not show higher registered values than in the EU and the euro area after the country became a member of the euro area.

Figure 11 shows the dynamics of HICP for food in Lithuania, the European Union and the euro area in the period December 2014 – December 2015.



Source: Eurostat

Fig. 11. HICP for food in Lithuania, the European Union and the euro area in the period December 2014 – December 2015 (%)

In 2015, no higher monthly HICP values for food were recorded in Lithuania, and deflation was observed in several months of the year.

During the first year after the introduction of the single currency in Lithuania relatively high level of inflation was observed in the following categories: restaurants and hotels, alcoholic beverages, tobacco and narcotics, miscellaneous goods and services (Kotliński, 2020, p. 312), periodicals, recording media due to changes in EU legislation, cleaning and repair of clothes, medical services, hairdressing and cafes (Vaiva, Bunevičiūtė, 2023, p. 43) as well as education in the short and medium term. In these categories inflation was also higher than overall inflation in the medium term before accession to the euro area. The categories clothing and footwear, furnishings, household equipment and routine household maintenance, health, recreation and culture were characterized by higher HICP values than the all-items HICP index in the first and second year after the introduction of the euro (Kotliński, 2020, p. 312). Some products became cheaper due to the adoption of the euro such as pharmaceuticals and certain foods (Vaiva, Bunevičiūtė, 2023, p. 43).

CONCLUSION

The conclusions which can be made from the analysis of the dynamics of some economic indicators for Lithuania after its accession to the EU in 2004 and the influence of the adoption of the euro in 2015 on these indicators are as follows:

- Lithuania's GDP per capita, measured in purchasing power parity, grew significantly over the period 2004–2024. The degree of real convergence of Lithuania towards the economy of the EU in terms of GDP per capita in 2015 when Lithuania entered the euro area was high, and even higher in 2024;

- the growth of GDP in Lithuania was higher than the average for the euro area and the EU with exceptions to this trend observed in several years during the 2004-2024 period. This contributed to enhancing the real convergence of Lithuania towards the EU economy. GDP growth on an annual basis in Lithuania in the period following the global financial crisis and during its membership in the euro area was lower in comparison with the years preceding the financial crisis. Throughout the entire period under review, economic growth was recorded in the country except for 2009;

- over the analyzed period, Lithuania's public debt as a share of GDP was below the reference value for the EU of 60% but a significant increase was noted in response to the global financial and economic crisis. In the years till the end of the reviewed period the indicator had high values. A more significant rise was also observed in 2020 as a result of the economic crisis caused by the coronavirus pandemic;

- During the period 2004-2024, Lithuania recorded budget deficits the exception being the period after the adoption of the euro when the state budget was in surplus. The budget deficit as a share of GDP was lower than 3% of GDP in most years. A budget deficit higher than 3% of GDP was observed during both economic crises. The budget deficits in 2009, 2010, 2011, and 2020 were significant in amount;

- After Lithuania's accession to the EU the real convergence of its economy with that of the EU in terms of price levels rose until the global financial and economic crisis. In the following years, a slight fall was registered after which the values of the indicator remained at similar levels. Lithuania introduced the euro with a good degree of real convergence in terms of price levels with the economies of the EU member states. After Lithuania became a member of the euro area the real convergence of the country's economy towards the EU economy in terms of price levels continued to increase and was high in 2024;

- the global financial crisis and the economic crisis triggered by the Covid-19 pandemic caused high inflation in Lithuania. In 2015, when Lithuania adopted the euro, deflation of 0.7% was recorded in the country. Over the next two years, prices in the country rose slightly, but an increase was also observed in the EU and the euro area from 2015 to 2018. HICP values in Lithuania were higher than the EU average in most years of the 2004-2024 period;

- after the introduction of the single currency in Lithuania in 2015, no price increases were observed. Deflation was recorded during most of the months of this year while inflation was low in the other months. Entry into the euro area caused services to become more expensive.

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EU TRADE IN AGRICULTURE IN THE CONTEXT OF THE 80TH ANNIVERSARY OF THE UN

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Abstract

Since the establishment of the United Nations (UN) before eight decades, the international community has experienced various changes, including the role of regional organizations like the European Union (EU). This paper explores the significance of a complex and intensely debated topic, namely agriculture, on the EU agenda. It studies the significance of agriculture in the EU trade with countries around the world. Both the export and the import are reviewed. The results show the comparison between five aspects that examine fluctuations. This publication can be interesting for readers at the intersection between trade and agriculture.

Keywords: international trade, agriculture

JEL: F, M

INTRODUCTION

Eighty years after the establishment of the United Nations (UN), the international agenda is filled with multiple challenges and opportunities (International Trade Centre, 2025, p.11; ICS, 2025, p2, UN, 2025). Among the new topics that have appeared such as the artificial intelligence, some topics have long been the subject of intensive international negotiations, such as agriculture.

The goal of the paper is to explore recent developments of the role of agricultural products in the total trade of the European Union (EU) with the rest of the world and whether it changes its relative position. To fulfil it, the text has two main tasks: first, to study how the share of the export of agricultural products fluctuates compared to the total trade to countries outside of the EU; second, to examine the same aspects for the imports.

The thesis is that agriculture, with some fluctuations, continues to be a key part of international trade for the EU in the context of eighty years after the establishment of the UN, time, in which many aspects of international trade have changed, including the role of regional organizations.

The expected results could be relevant for the deliberations about the Common agricultural policy (CAP) and can shed light for the place of agriculture in the total EU trade. They can be used to trigger dialog among interested stakeholders about complications in the field and possible future solutions.

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REVIEW OF RELEVANT PUBLICATIONS

At the intersection between world trade, the trade of a regional economic organization and agriculture in the context of CAP, there are relevant publications that deal with each of these topics individually, but much fewer that deal with questions that intertwine the three of them simultaneously in recent years.

There are several indications that show what topics are discussed on the international level. The 16th UN Conference on Trade and Development has brought together hundred seventy delegations from member states, which marks a record participation for the past sixty years (UNCTAD, 2025). They highlight the importance of rules-based multilateral trading system (UNCTAD SG, 2025).

International trade continues to grow in the first six months of 2025, according to the research in the Global trade update of the UNCTAD (2025a, p.2), but there are concerns about a recessionary path amid uncertainty (UN, 2025a; UNCTAD, 2025b, International Trade Centre, 2025).

With reference to the EU, there are some authors like Ferrari et al (2021) that analyse the cumulative economic impact of trade agreements on EU agriculture. Cipollina et al (2020) focus on the trade policy of the EU and its effects by discussing agricultural tariffs. De Oliveira et al (2024) pay attention to a regional free trade agreement.

As far as agriculture is concerned, there is a wide variety of studies. Seok et al (2021) discuss agricultural exports and agricultural economic growth, in particular for developed countries. Beghin et al (2021) combine trade with agriculture and focus on the costs. Del Rosal (2024) concentrates on the transportation aspects, in particular in the maritime. Andrei et al (2022) analyze agriculture export variety and what is the impact in the short and long run on agriculture export.

In the context of the deliberation in international forums and publications, it seems that more targeted discussion is needed that links the EU, international trade and agriculture in recent years. This paper is devoted to the topic.

METHODS

International trade and the role of regional economic organizations can be analysed in different ways. The focus in this paper is on finding a suitable approach to estimate what is the significance of agriculture for the EU in its recent relations with the countries outside the European Union.

My approach is dedicated to the examination of the latest available official trade data from Eurostat. The data has been last accessed in October 2025. It is chosen in the context of the review of relevant publications, including documents of international organizations and articles of representatives of the academia. As the aim of this article is to see recent developments, it concentrates on publications after 2020.

This paper examines the role of agriculture for the past five years and whether it changes its relative position on the international agenda of the EU. For that purpose, it is necessary to explore beyond the value of trade and the balance between export and import.

This study scrutinizes what is the share of agricultural products in the total trade of the EU with the countries outside of the EU. The share measured as a percentage can be used

as an indication for the significance of the topic in the overall external relations. It is beneficial to see how percentages change for both the export and the import for the years from 2020 to 2024, which is the latest year with available data. During the preparation of the paper, there has been an update in some of the entries, so the calculations have been redone. The percentages are rounded off, for most of them to the nearest tenth, with one exception. When the share of the export for 2022 (which equals to 8,86%) is subtracted from the share for 2023 (8,90%), as illustrated in Figure 1, the result in table 1 is (0,04%) instead of 0,04104648%. Thus it is not written as zero and helps show more precisely that there is a small change towards growth.

Five aspects are compared for the reviewed period, as they are described in the results section of this paper. The limitations of the study include four aspects. First, no mirroring (WITS, n.a.) is done for the trade data. Only the information from Eurostat is used and no comparison is done with the data from the trading parties. Second, the time period is focused on the past five years. They have been filled with major challenges on the global stage, which makes them particularly interesting. The spread of new digital technologies has been unprecedented, which invites debate for the role of traditional sectors such as agriculture.

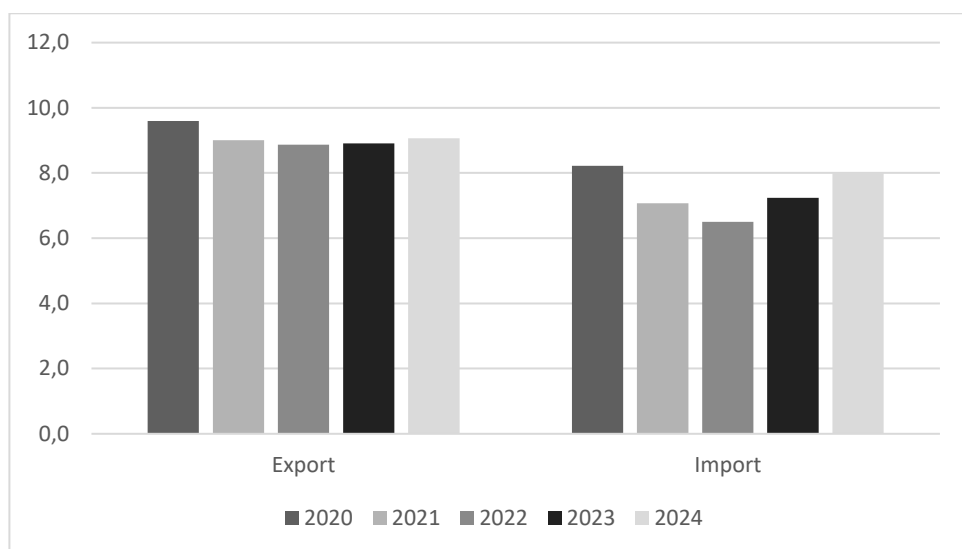
Third, it focuses on the trade of the EU as a whole. The export and import of individual member states is not included. Fourth, while this paper recognizes the complexity of agriculture, separate subcategories of different agricultural products remain beyond the scope. Additional studies can be devoted to them.

RESULTS AND DISCUSSION

During the period of 80 years since the establishment of the UN, many aspects of the global environment have changes, including the formation of regional economic organizations. This paper touches upon a strategic question linked to the international community: how do such organizations trade with the rest of the world.

Agriculture has been an important part of the deliberations for decades. Given the development of new technologies and the spread of digitalization in the past few years (International Trade Centre (2025), it is interesting to explore, what is the place of agriculture on the world's agenda. The case of the EU, described as a sui generis organization, is particularly thought-provoking.

To explore the dynamics across the five year period, it is useful to examine the share of agricultural exports and imports in the total trade of the EU, as illustrated on Figure 1. This approach gives the opportunity to compare the significance of agriculture to other sectors and how it varies annually.



Source: Figure prepared by the author, based on Eurostat data.

Fig. 1. EU trade in agricultural products as a share in total trade, 2020–2024

It is useful to compare the following five aspects: first, how the export share changes for each year; second, what is the difference in the percentages between the beginning and the end of the reviewed period; third, how the import share alters annually; fourth, what is the import share fluctuation from 2020 to 2024; and fifth, how the changes for export and import compare for the respective years.

Between 2021 and 2020, the share of the agricultural export in the total EU trade is reduced from 9,59 % by (-0,6) percentage points (pp.) as indicated in Table 1. The reduction of the share of imports for the same category of goods is double and equals (-1,2) pp. They are reduced from 8,22% in 2020. Between 2022 and 2021, there is reduction of (-0,1) pp for export. The reduction for import is six times bigger compared to the data for export. If the reduction of the agricultural shares for the second period are compared with the first one, it shows that for both export and import, the reduction is smaller as pp. Between 2023 and 2022, the share of the export of agricultural production stays almost the same, with a minor increase of 0,04%. For import, there is a bigger change. The import share increases by 0,7 pp, again it changes more than the export shares. Comparing between 2024 and 2023, it shows that for the first time in the five year period, there is increase in the export share of 0,2 pp. The increase for the imports for the same period is four times higher and amounts to 0,8 pp.

Table 1. Changes in the EU share of export and import of agricultural products in total trade

	2021-2020	2022-2021	2023-2022	2024-2023
Export	-0,6	-0,1	0,04	0,2
Import	-1,2	-0,6	0,7	0,8

Source: Prepared by the author, own calculations based on Eurostat data.

The results show that there are small changes in the share of agriculture in the export and the import. This could be an indication that agriculture was influenced in a similar way by the global events in that time as the total EU trade. If the annual shares are compared, the import seems to be more influenced than the export, first negatively and then positively. For both the import and export, there is negative development in the first two columns in the table and towards the end of the period, the direction changes.

As the data for the past two years is reviewed, there is an indication for growth. The share of the export of agricultural products in the total trade reaches 9,06%. The share of the import rises to 7,99 %.

But the share for both export and import cannot reach the initial level. When the beginning and the end of the five year period are compared, there is a reduction in the share of agricultural goods for both. If the data for 2024 is compared to 2020, it shows that the export is down by (-0,5) pp and import shrinks by (-0,2) pp. This shows that the export is more influenced. This is an indication for a shift in the export of the EU.

The reviewed shares of the export and the import vary up to 1,2 percentage points and most of them are less than that. Given the scale of the EU trade, this is useful indication that suggests fluctuations in the export and import of agricultural goods, while confirming their places to respectively 9,06% and 7,99 % in total trade.

In the context of strong international competition, there are signals that more attention can be devoted to agriculture. It has been heatedly debated for many years, full of major changes on the international level. While the world agenda will continue to be filled with major challenges and opportunities, the question for the role of agriculture remains strategic.

CONCLUSION

Based on the latest yearly data, this paper confirms that agriculture has a unique place in the trade between the EU and the countries around the world in the context of dynamic changes on the international stage for the past five years. The fluctuations of the export and import shares suggest that more attention could be devoted to the topic. The data shows increase for both in the last year, but it still hasn't reached the levels from the beginning of the reviewed period.

The contribution of this paper could be found: first, at the intersection between trade, agriculture and the role of a regional sui generis organization such as the EU; and second, in the use of EU shares of agricultural export and import in the total trade and their fluctuations for the past five years. The results could be relevant for readers interested in exploring the place of agriculture on the European agenda in the context of the relations with countries outside the EU.

Further research could be devoted to evaluating longer periods of time, as well as creating models to predict the future development of agricultural trade. More attention could be dedicated to understanding the difference between the member states of the EU.

SPONSORSHIP

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THE AI ACT AND THE DEFENSE OF THE EUROPEAN UNION'S GENERAL INTEREST IN INTERNATIONAL ANARCHY: AN INTERDISCIPLINARY APPROACH TO LAW AND INTERNATIONAL RELATIONS UNDER THE SIGN OF REALPOLITIK

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Abstract

The Regulation 2024/1689 on Artificial Intelligence (AI Act), adopted by the European Union in 2024, represents a milestone in the regulation of disruptive technologies, with implications that transcend the domestic legal scope and extend into the sphere of International Relations. Our research seeks to analyse how the AI Act promotes the EU's general interest in an anarchic international system, where the absence of a sovereign authority has contributed to the intensification of technological competition. Through an interdisciplinary approach, which combines Law, with regard to the normative analysis of the AI Act, and International Relations, with regard to the dynamics of power and soft power, under the theoretical lens of the realist paradigm, our study aims to analyze how the AI Act serves as a strategic instrument in defending the EU's general interest in an anarchic international system. We argue that the regulation not only protects fundamental rights and promotes responsible innovation, but also strengthens the EU's technological sovereignty, normative influence, and economic competitiveness in a context of competition between great powers for disruptive technologies. We will conclude that the EU should articulate the AI Act with new multilateral initiatives, with the purpose of overcoming the limitations imposed by international anarchy, in order to seek to promote global AI governance more aligned with EU values.

Keywords: AI Act, Law; Realism, General Interest, International Relations

1. INTRODUCTION

Artificial Intelligence (AI) has emerged as one of the most disruptive technologies of the twenty-first century, redefining power dynamics in the international system, thanks to the nature of its "multidisciplinary field born of computer sciences" (Garcia, 2009, p. 2). However, its rapid development also raises ethical, legal and geopolitical challenges,

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including privacy risks, algorithmic discrimination and threats to international security, such as the use of autonomous systems in armed conflicts.

In a context of international anarchy, characterized by the absence of a global authority and competition between states and non-state actors, the European Union (EU) sought to position itself as a pioneering actor in AI regulation with the adoption of the Regulation on Artificial Intelligence (*AI Act*) in 2024. This EU regulation, the first of global scope to categorise AI systems by levels of risk, namely low, high and unacceptable, seeks to achieve the balance of technological innovation with the protection of Fundamental Rights, the promotion of public trust with the EU's normative leadership on the international stage (Manners, 2002).

Most of the AI Act, “wording is drawn from a 2008 Decision establishing a framework for certain regulations concerning product safety, used in a wide array of subsequent legislation” (Veale & Zuiderveen Borgesius, 2021, p. 98). This article aims to analyse the AI Act as a legal instrument of strategic value that reflects the general interest of the EU, which includes the protection of Fundamental Rights, the promotion of responsible innovation and the consolidation of the EU's position as a normative and technological power in the international system, under the sign of *Realpolitik*. To this end, our research adopts an interdisciplinary approach, where we combine Law, focusing on the regulatory framework of the AI Act and its implications for the European Common Market, and International Relations, with an emphasis on the realist school of International Relations. The Realism, as a theoretical paradigm of International Relations, prioritizes the maximization of power and the national interests of States, which, in turn, offers a theoretical lens capable of understanding how the EU intends to use AI regulation to navigate the tensions of the anarchy of the international system, especially in the face of technological competition with powers such as the United States of America (USA) and the People's Republic of China (PRC).

The AI Act is more than a mere legislative instrument of the European Community legal order, it reflects the EU's ambition to condition the global governance of AI, in an international system characterized by international anarchy, a concept described by Kenneth Waltz (1979) as the absence of a sovereign authority capable of imposing universal standards. In this systemic environment, states and regional blocs compete for technological and regulatory influence, with major powers such as the US, with a focus on private sector-led innovation, and China, which has been prioritising state control, which have been adopting divergent and distinct approaches to AI regulation. The EU, in turn, seeks to employ the AI Act as a tool of soft power (Manners, 2002), where it promotes democratic values, such as transparency and the protection of rights, in an effort to establish global standards that reflect the general interest of the EU, which can be perceived as the combination of fundamental rights, social cohesion and responsible innovation within the European bloc.

The relevance of our research lies in the intersection between the legal regulation of disruptive technologies and the power dynamics in the international system. The AI Act not only regulates the development and use of AI in the EU's internal market, but also projects external influence, a phenomenon known as the “Brussels effect” (Bradford, 2020), whereby European standards are adopted globally due to the constraint imposed by the economic weight of the EU bloc.

However, the effectiveness of the AI Act is challenged by international anarchy, where the absence of a central authority and competition between major powers hinders regulatory harmonization within the international system. This scenario requires an analysis that transcends disciplinary boundaries, where we will articulate Law, which provides the normative basis of the AI Act, with International Relations, which allows us to obtain an explanation of the strategies of power and cooperation in a fragmented international system.

That said, the starting question guiding our investigation is: How does the AI Act promote the general interest of the EU in the context of international anarchy? The interdisciplinary approach is justified by the complexity of the theme. From a legal point of view, the AI Act is a regulatory instrument that establishes clear obligations for AI developers and users, which is in line with the EU tradition of protecting rights. In International Relations, this regulatory instrument is a manifestation of European *soft power*, which allows projecting European values in a context of global rivalry. The aggregation of these perspectives allows a holistic analysis to be carried out, which considers both the normative framework of the AI Act, and considers the geopolitical factors that condition its implementation.

Our article argues that the AI Act is a realist strategy by the EU to defend its general interest of the organization in an anarchic international system, under the theoretical lens of the realist paradigm, namely, focusing on Hans J. Morgenthau's classical realism, which prioritizes survival and security, and John M. Mearsheimer's offensive realism, which emphasizes the maximization of relative power.

2. METHODOLOGY

Our article provides a qualitative approach to evaluating the AI Act as a mechanism to defend the general interest of the EU. Our investigation examines the main sources related to the AI Act, from EU legislation to academic articles. The interdisciplinary methodology assumed by us integrates legal interpretation and International Relations tools, which will allow a comprehensive evaluation of the subject. The choice for a qualitative approach is justified by the complexity of the object, which requires contextual interpretation rather than quantification.

This study contributes to the academic debate by offering an integrated perspective on AI governance in the international system, where we will highlight the role of the EU as a normative leader and the obstacles imposed by the systemic pressure of the current configuration of the world order. In addition, it has practical relevance, as AI regulation is an urgent issue in a world where disruptive technologies condition the future of the international system. By articulating Law and International Relations, our article offers an interdisciplinary approach for future analyses of technology policies in complex global contexts.

3. REALISM, NORMATIVISM AND SOFT POWER

In the field of law, the concept of general interest is a pillar of the EU legal order, associated with the promotion of public goods, such as the protection of fundamental rights, social cohesion and responsible innovation (Brosset, 2020). In the case law of the Court of Justice of the EU (CJEU), the general interest justifies regulatory interventions aimed at

balancing economic freedoms with collective values, such as privacy and non-discrimination, since "the interdependence between groups, peoples and States poses the problem of interests and values in International Relations, that is, judgments of fact and value" (Bavaresco & de Souza, 2013, p. 155).

In that matter, the AI Act, adopted in 2024 and based on Articles 16 and 114 of the Treaty on the Functioning of the EU (TFEU), reflects this approach by establishing a regulatory framework for AI systems based on levels of risk. Its principles, including transparency, human oversight, safety and accountability, aim to protect fundamental rights, such as the right to privacy, which is enshrined in Article 8 of the EU Charter of Fundamental Rights, while promoting public trust in AI systems. This regulation is also part of the EU's regulatory tradition, which combines binding standards such as the ethical guidelines for trustworthy AI (European Commission, 2019). In addition, the AI Act amplifies the EU's ambition to set global standards, a phenomenon known as the "Brussels effect" (Bradford, 2020), in the same vein as the General Data Protection Regulation (GDPR). This effect occurs when global companies adopt European standards to gain access to the European Common Market, which will allow the European bloc's legal influence to expand.

However, the effectiveness of the AI Act depends on its implementation in an international context where legal norms interact with power dynamics, which in turn requires a complementary analysis of the area of International Relations.

In International Relations, the concept of international anarchy is central to understanding the global system, defined by the absence of a sovereign authority capable of imposing universal norms (Waltz, 1979). In this environment, states and regional blocs, such as the EU, act to maximize their interests, whether through power, normative influence, or cooperation. AI intensifies this dynamic, being a field of technological and normative competition between major powers such as the US and China.

The realist paradigm of International Relations, particularly the structural realism of Kenneth N. Waltz (1979), argues that, in an anarchic international system, states are rational actors who prioritize survival and security, where they seek to maximize their relative power. AI is a strategic resource in this scenario, as it strengthens economic, military and intelligence capacities of states. For realist theorists, AI regulation, such as the AI Act, is not just a normative issue, but a strategy to maintain or amplify the influence of one state actor relative to others. The EU, although not a state, is able to act as a cohesive bloc with strategic interests, by using the *AI Act* to consolidate its position in the international system.

From the point of view of the realist paradigm, the AI Act can be interpreted as an attempt to counterbalance the technological supremacy of powers such as the US and China. By setting strict standards, the EU seeks to shape the global technological environment by forcing non-European companies to adapt to its rules to gain access to the European Common Market.

However, the realist paradigm highlights limitations: in an anarchic international system, other state actors can resist EU norms as they prioritize their national interests. For example, the Beijing government may reject the principles of the *AI Act*, such as transparency, due to the authoritarian nature of the Chinese communist regime, while the US may privilege deregulation to accelerate innovation, to maintain the lead in technological development. Thus, the success of the AI Act depends on the EU's ability to convert its norms

into relative power, either through economic incentives or diplomatic pressure on other states in the international system.

In addition to the realist paradigm, we will integrate into our analysis the normative approach of Ian Manners (2002) is relevant to understand the role of the EU as a normative actor. Manners argues that the EU exerts influence through *soft power*, by promoting democratic values such as human rights and the rule of law, rather than by coercing military power. The AI Act exemplifies the European strategy by proposing an AI governance model based on ethics and transparency (Comissão Europeia, 2019; 2021), which contrasts with more utilitarian approaches in the US or centralized in China. The "Brussels effect" reinforces the perception of European soft power, since the global adoption of the AI Act rules will contribute to expanding the EU's influence without resorting to hard power, since we live in an anarchic international system where the integration of the elements of the complex theory of interdependence, developed by Robert Keohane and Joseph Nye (1977), will complement realism and normativism by highlighting that, in international anarchy, states cooperate in areas of mutual interest, such as technology and security, when it risks causing disturbances in the balance of power in the international system.

AI ends up creating interdependencies in the international system, as its consequences transcend state borders. The AI Act seeks to address these issues by regulating AI systems in critical sectors, such as health and defense, within the European space, however, its implementation faces some challenges due to the lack of global coordination. The realistic perspective warns that cooperation is limited by conflicting interests, while interdependence suggests that the EU may use the AI Act as a basis for multilateral agreements.

To obtain an answer to our starting question, the integration between Law and International Relations is essential to understand the AI Act as a hybrid instrument. That is, a legal instrument, as it establishes binding norms, and a strategic instrument, as it allows for projecting influence in the international system.

From a legal point of view, the AI Act is a normative response to the challenge of regulating disruptive technologies, which protects the EU's general interest. In International Relations, it is a tool of power and influence in an anarchic system. Realist theory highlights that the AI Act is a strategy to maximize the EU's influence in a context of technological competition, while normativism and interdependence explain its attempt to shape global standards through soft power and the promotion of cooperation. The ban on high-risk AI systems reflects the EU's legal commitment to fundamental rights but also positions the bloc as an ethical leader in opposition to authoritarian regimes. Likewise, the requirement for transparency in algorithms strengthens European security while designing standards that can be adopted worldwide. Realist theory enriches this analysis by emphasizing that, in international anarchy, the success of the AI Act depends on the EU's ability to overcome resistance from other actors, who prioritize their own strategic interests.

The interdisciplinary approach allows for a holistic understanding of the AI Act, by articulating the normative logic of Law with the dynamics of power, competition, and cooperation of International Relations. At the same time, it also offers a robust theoretical framework for assessing the challenges and opportunities of AI governance in an increasingly fragmented international system.

4. ANALYSIS

The AI Act, adopted by the European Union in 2024, is the first comprehensive regulatory framework for AI regulation, which establishes a risk-based model that classifies AI systems into four categories: unacceptable risk, like the social scoring systems similar to those used in China, high risk, like AI in medical diagnostics or recruitment, limited risk, like chatbots, with transparency requirements and minimal risk with no specific regulation. The purpose of this regulation is to protect fundamental rights, such as privacy and non-discrimination; ensure the safety and reliability of AI systems; and foster responsible innovation to strengthen the European Common Market.

The AI Act imposes specific obligations for high-risk systems, which includes conformity assessment, human oversight, algorithmic transparency, and registration in public databases. In other words, an AI system used in court proceedings must provide clear explanations about its decisions, protecting the right to a fair trial (Article 47 of the EU Charter of Fundamental Rights). Violations can result in fines of up to 7% of a company's global annual turnover, a mechanism inspired by the General Data Protection Regulation (GDPR). In addition, the regulation creates national supervisory authorities and a European AI Committee to coordinate its implementation, which ensures harmonization between the Member States of the European Community bloc.

The AI Act contrasts with the self-regulation prevalent in the United States, where innovation is driven by companies like Google and Microsoft with minimal state intervention, and China's centralized regulation, which prioritizes state control and national security. The EU's approach, centred on ethical and legal principles, reflects its regulatory tradition, but also its ambition to influence global standards, as seen in the "Brussels effect" (Bradford, 2020). For example, global companies like Amazon can adapt their AI systems to the AI Act to operate in the European market, extending the EU's influence.

4.1. The AI Act and its relationship to the EU General Interest

The concept of general good in the EU context encompasses the protection of fundamental rights, the promotion of ethical innovation and social cohesion, as consolidated in the case law of the Court of Justice of the EU (Brosset, 2020). The AI Act aligns with these values by establishing safeguards against uses of AI that threaten human dignity or democracy. For example, the prohibition of real-time facial recognition systems in public spaces (except in specific cases, such as public security with judicial authorization) protects the right to privacy (Article 8 of the Charter of Fundamental Rights) and prevents authoritarian abuses. Similarly, the requirement for transparency in high-risk systems, such as those used in recruitment, reduces the risk of algorithmic discrimination, promoting equality (Article 21 of the Charter of Fundamental Rights).

In addition to protecting rights, the AI Act fosters responsible innovation by creating a predictable regulatory environment that encourages investments in trustworthy AI. For example, European startups developing AI for healthcare benefit from clear rules that facilitate market entry, while consumers gain confidence in the safety of these technologies. This balance between innovation and protection strengthens social cohesion, as public acceptance of AI depends on the perception that it is safe and ethical (Sartori, L., & Theodorou, 2022).

The AI Act also positions the EU as a global leader in technology regulation, an aspect of the general interest that transcends the internal market. By setting high standards, the EU attracts global companies seeking ethical legitimacy, cementing its position as a benchmark in AI governance. However, the achievement of these objectives faces challenges in the international context, where divergent interests hinder regulatory harmonization.

International anarchy, characterized by the absence of a sovereign global authority (Waltz, 1979), shapes the implementation of the AI Act. In this system, AI is a field of technological and normative competition, with global powers adopting different strategies. China uses AI to enforce state control, with mass surveillance systems that contrast with the values of the AI Act. The U.S., on the other hand, favors unregulated innovation, with companies like Open AI leading the way in developing advanced language models with no restrictions comparable to those in the AI Act. The EU, positioned as a normative actor (Manners, 2002), uses the AI Act to project soft power, which promotes an AI governance model based on transparency, ethics, and protection of rights.

The "Brussels effect" suggests that the AI Act could influence global standards, as multinational companies, such as Meta, can adopt its rules to operate in the European market, which accounts for about 20% of global GDP. For example, AI systems used in social networks with recommendation algorithms must comply with the transparency requirements of the AI Act, potentially impacting their design in other markets. However, international anarchy poses significant challenges. The absence of global enforcement mechanisms means that the accession of non-European actors depends on economic incentives or diplomatic pressure. China, for example, may reject the AI Act's provisions due to their incompatibility with state surveillance systems, while the United States may criticize them as barriers to innovation.

In addition, AI has implications for international security, a central aspect in the realist perspective. AI systems in cybersecurity or autonomous weapons create global risks that transcend EU borders. The AI Act addresses these challenges by regulating high-risk systems in critical sectors, but its effectiveness is limited by a lack of global coordination. For example, while the EU prohibits certain uses of military AI, other states can develop autonomous weapons without restrictions, creating power asymmetries. In this sense, the AI Act is both a normative tool and a strategy to strengthen European security in an anarchic system.

4.2. The implications and limitations of the AI Act and future scenarios

Our analysis of the *AI Act* reveals its relevance as a legal and policy instrument that promotes the general interest of the EU by upholding the protection of fundamental rights, responsible innovation and social cohesion in an anarchic international system.

The AI Act positions the EU as a pioneer in AI regulation, cementing its identity as a normative actor (Manners, 2002). From a legal perspective, the regulation establishes an innovative risk-based model, which protects fundamental rights and fosters public trust in AI. For example, the ban on mass surveillance systems like real-time facial recognition aligns with Articles 7 and 8 of the EU Charter of Fundamental Rights, protecting privacy and differentiating the EU from authoritarian regimes, such as China, where such technologies are widely used. In addition, the requirements for transparency and human oversight

in high-risk systems, such as AI in medical diagnoses or selection processes, reduce the risk of algorithmic discrimination, strengthening equality and social cohesion.

In International Relations, the AI Act expands the EU's soft power, projecting democratic values into an anarchic system. The phenomenon of the "Brussels effect" (Bradford, 2020) suggests that global companies, such as Google or Meta, can adopt the rules of the AI Act to access the European market, which represents about 20% of global GDP. For example, recommendation algorithms on social media platforms, regulated by the AI Act to ensure transparency, can be adjusted globally, influencing standards outside the EU. This normative impact strengthens the EU's leadership in AI governance, which contrasts with the US's unregulated approach and China's state regulation.

Realistically, the AI Act is a strategy to maximize the EU's influence in a context of technological competition. By setting strict standards, the EU seeks to counterbalance the supremacy of powers such as the US, which leads in private innovation, and China, which dominates in state applications of AI. For example, AI regulation in cybersecurity strengthens European security, while designing standards that can shape international agreements. However, realism warns that the EU's influence depends on its ability to overcome resistance from other actors, who prioritize national interests.

Despite its ambitions, the AI Act faces significant limitations, many of them derived from international anarchy. First, the absence of a global enforcement mechanism makes it difficult for non-European actors to adhere to EU standards. While the "Brussels effect" encourages multinational companies to comply with the AI Act, sovereign states such as China may reject its norms due to divergent priorities. For example, the ban on social scoring is incompatible with the Chinese social credit system, limiting the influence of the AI Act in authoritarian contexts. Similarly, the USA may criticize the AI Act as a barrier to innovation, preferring voluntary approaches led by the private sector.

Second, the rapid evolution of AI poses a challenge to the longevity of the AI Act. Emerging technologies, such as generative AI models like GPT-5 or quantum systems, may overcome the risk categories defined in 2024, requiring constant updates to the regulation. The legal perspective highlights that regulatory rigidity can make adaptation difficult, while the realistic perspective suggests that technological obsolescence can weaken the EU's influence over the powers that prioritize accelerated innovation.

Third, the implementation of the AI Act faces internal challenges in the EU. Harmonization between member states, which have different regulatory capacities and economic priorities, is an obstacle. For example, countries such as Germany, with a strong technology sector, may push for greater flexibility, while others, such as France, emphasize data protection. This internal fragmentation can compromise the coherence of the AI Act, limiting its external projection.

The challenges posed by international anarchy require the EU to articulate the AI Act with diplomatic and multilateral strategies to consolidate its normative leadership. A promising scenario is the promotion of international agreements based on the AI Act, using forums such as the EU-US Trade and Technology Council or the OECD. For example, the EU can negotiate common standards for transparency in algorithms, aligning with the U.S. on ethical issues, while counterbalancing China's influence. The interdependence perspec-

tive (Keohane & Nye, 1977) suggests that cooperation is feasible in areas of mutual interest, such as cybersecurity, where AI creates global risks like AI-coordinated cyberattacks.

Another scenario involves the creation of a global treaty on AI, inspired by the model of the AI Act. The EU could lead this initiative in bodies such as the UN, promoting principles such as the prohibition of lethal autonomous weapons, which threaten international security. Realist theory, however, warns that resistance from powers such as Russia or China could hinder this process, requiring the EU to combine economic incentives like access to the European Common Market with diplomatic pressure.

Internally, the EU should invest in innovation to complement the AI Act. The creation of AI centers of excellence, funded by programs such as Horizon Europe, can strengthen the EU's technological competitiveness by reducing dependence on American or Chinese technologies. For example, the development of European AI models, as alternatives to ChatGPT, aligned with the principles of the AI Act, would strengthen the EU's regulatory and economic leadership.

5. CONCLUSION

This article demonstrated that the AI Act is a mechanism for defending the EU's national interests in international anarchy, aligned with Morgenthau's classical realism and Mearsheimer's offensive realism. Regulation protects the EU's security, economic competitiveness, and strategic autonomy, mitigates external technological threats, reinforces normative leadership, and reflects skepticism about multilateral cooperation. However, technological dependence and internal fragmentation limit its effectiveness, suggesting the need for greater investment in innovation and political cohesion.

The implications are significant: the AI Act strengthens the EU's position in the international system, but its ability to defend national interests depends on an integrated approach that combines regulation, innovation, and diplomacy. For future research, it is recommended to analyse the impact of the AI Act on peripheral EU states, such as Portugal, and compare its effectiveness with other global regulatory strategies. This study reinforces the relevance of realism to understand the intersection between technology and national interests in international anarchy, highlighting the need for mission-oriented industrial policies to achieve technological sovereignty and reduce strategic dependencies.

Our interdisciplinary approach enriches the analysis by articulating legal norms with geopolitical dynamics. Law highlights the robustness of the AI Act as an instrument for the protection of the general interest, while International Relations reveals the challenges of its implementation in the international system. Realist theory emphasizes the need for power strategies to overcome resistance, while Manners' (2002) normativism highlights the potential of the AI Act as a tool of soft power.

This approach also offers a model for future analyses of global technological governance, where issues such as the regulation of quantum technologies or biotechnologies could benefit from the integration between legal norms and strategies of global influence. In addition, the discussion underlines the importance of balancing regulation and innovation, a central challenge for the EU in an increasingly technological world.

In International Relations, the AI Act consolidates the EU's role as a normative actor (Manners, 2002), by using soft power to influence global standards. The phenomenon of the "Brussels effect" (Bradford, 2020) suggests that multinational companies, such as Meta or Amazon, may adopt the rules of the AI Act to gain access to the European Common Market, which will allow them to expand their influence on other continents. For example, the requirement for transparency in recommendation algorithms on social networks can impact the design of platforms globally, promoting democratic values. The realist perspective (Waltz, 1979), in turn, highlights that the AI Act is a strategy to maximize the EU's influence in an anarchic system, by counterbalancing the technological supremacy of the great powers such as the USA and China. However, the absence of global enforcement mechanisms and the resistance of other state actors, such as China with its social credit system, limit the effectiveness of the regulation in the international system, and restrict its effectiveness to the European space.

The AI Act has profound implications for the EU and global AI governance. Domestically, it reinforces the EU's leadership in technology regulation, cementing its reputation as a champion of fundamental rights and ethical innovation. Externally, it positions the EU as a reference in a strategic field, where AI shapes the economy, security, and geopolitics. The AI Act's ability to influence global patterns, via the "Brussels effect," demonstrates the potential of European soft power, but it also underlines the need to overcome the limitations imposed by international anarchy.

From a practical standpoint, the AI Act offers a model for other jurisdictions seeking to regulate AI. States such as Canada or Australia, which share democratic values, can draw inspiration from the EU's risk-based model, which allows for opportunities for normative coalitions in the international system. In addition, the regulation highlights the importance of balancing regulation and innovation, a central challenge in a world where AI is rapidly evolving. The EU should continue to invest in research and development, through programmes such as Horizon Europe, to complement the AI Act with its own technological advances, which will help reduce dependence on American or Chinese technologies.

Despite its merits, the AI Act faces significant challenges. Global regulatory fragmentation, exacerbated by international anarchy, limits its influence in contexts where national interests diverge. Resistance from major powers such as China, which prioritizes state control, and the US, which favors deregulation, requires the EU to combine the AI Act with assertive diplomatic efforts in the international system.

In addition, the rapid evolution of AI, with the emergence of technologies such as advanced generative models or quantum AI, can make regulation obsolete, requiring constant updates. Internally, harmonization among member states, with their different economic and regulatory priorities, remains an obstacle to effective implementation.

The AI Act is a testament to the EU's commitment to ethical, safe, and human-centered AI governance. By promoting the general interest of the Union in an anarchic international system, this regulation demonstrates the potential of the EU's soft power but also exposes the challenges of implementing standards in a context of competition and fragmentation.

The interdisciplinary approach adopted in this case study, where we articulate the normative rigor of Law with the strategic dynamics of International Relations, offers a powerful lens to understand the role of the EU in global governance. As AI continues to shape the

future, the EU must combine the AI Act with investments in innovation and multilateral diplomacy, which will contribute to consolidating its normative leadership and shaping a more cooperative and ethical international system.

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GREEN SKILLS IN ALBANIA: AN EMPIRICAL RESEARCH

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Abstract

The global transition toward a green economy demands a workforce equipped with green skills – competencies that enable workers to contribute to environmental sustainability across all sectors. This empirical research explores the current landscape of green skills in Albania, assessing both demand-side (employers) and supply-side (educational institutions and workforce) dynamics. Drawing on data from surveys, labor market statistics, and interviews with industry stakeholders, the study identifies key gaps between the skills required for green jobs and those currently available in the Albanian labor market. The findings reveal that while awareness of green competencies is growing, their integration into vocational education and training (VET), higher education, and employer practices remains limited. Regression analysis shows a positive correlation between green skills development and employment potential in emerging sectors such as renewable energy, sustainable construction, and environmental services. The study concludes with policy recommendations to mainstream green skills into Albania's national education and employment strategies, emphasizing the importance of cross-sectoral coordination and EU-aligned policy frameworks to accelerate green workforce readiness.

Keywords: Albania, Green Skills, Sustainable Employment, Education Policy, Workforce Development

INTRODUCTION

In the face of accelerating climate change, biodiversity loss, and resource depletion, countries around the world are prioritizing the transition to a green economy – a model of development that fosters economic growth while ensuring environmental sustainability and social inclusion. At the heart of this transition lies a fundamental reshaping of the labor market, where new types of jobs are emerging, and existing roles are being transformed to align with green and sustainable practices. This shift demands not only technological innovation and policy reform but also a workforce equipped with the right skills – commonly referred to as green skills. These are the technical knowledge, cognitive abilities, and behavioral competencies that enable individuals to support environmental sustainability in their occupations, whether in agriculture, manufacturing, construction, energy, or the service sector.

In the context of Albania, a country with a dynamic but vulnerable economy in South-east Europe, the green transition presents both opportunities and challenges. While Albania has made commitments under international frameworks such as the Paris Agreement and the EU Green Agenda for the Western Balkans, the implementation of these goals requires substantial investment in human capital. Yet, the Albanian labor market currently shows a

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limited capacity to supply green skills, largely due to systemic issues in the education and training systems, low employer awareness, and the lack of a clear national strategy for green workforce development. This empirical research seeks to address these gaps by analyzing the current state of green skills in Albania through a multi-dimensional approach. It examines the readiness of Albania's vocational and higher education institutions to integrate green curricula, the extent to which employers demand green competencies, and the alignment – or misalignment – between supply and demand in the green labor market. Using data collected from labor force surveys, stakeholder interviews, and sectoral case studies, the study identifies key green sectors in Albania such as renewable energy, energy efficiency, waste management, sustainable agriculture, and eco-tourism, where the potential for green employment is particularly high.

Understanding and investing in green skills is not only a matter of labor market efficiency but also a precondition for inclusive and sustainable development. In the Albanian context, where youth unemployment remains high and emigration continues to drain talent, green skills development offers a strategic opportunity to revitalize employment, stimulate innovation, and build resilience to climate and economic shocks. This research contributes to the growing body of knowledge on green skills in transition economies and offers evidence-based recommendations for policy makers, educational institutions, and industry stakeholders seeking to align workforce development with environmental goals.

LITERATURE REVIEW

The concept of green skills has gained increasing scholarly and policy attention over the past decade, reflecting the growing awareness of the need to align workforce development with sustainable development goals (OECD, 2021). Green skills are broadly defined as the knowledge, abilities, values, and attitudes needed to live in, develop, and support a sustainable and resource-efficient society (UNESCO-UNEVOC, 2019). They include both technical competencies – such as operating renewable energy systems or managing waste – and soft skills like systems thinking, innovation, and adaptability to environmental change (ILO, 2019). Numerous international studies emphasize the crucial role of green skills in supporting the transition to low-carbon economies. According to the International Labour Organization (2023), the green transition could create over 100 million jobs globally by 2030, provided that countries implement training and education strategies that reflect emerging labor market needs. In this context, green skills are not limited to specific “green jobs” but are increasingly required across all sectors – from agriculture to construction and finance – resulting in a process of “greening all jobs” (ILO, 2019).

In Europe, green skills development has been a key component of policy agendas, particularly under the European Green Deal and the EU Skills Agenda. Research conducted by CEDEFOP (2020) shows that while most EU member states have developed strategies to integrate environmental sustainability into vocational education and training (VET), the Western Balkan countries, including Albania, are still at an early stage. The green skills gap in these regions is largely due to fragmented governance structures, underinvestment in education systems, and the absence of strong linkages between employers and training providers (CEDEFOP, 2022). At the national level, empirical research on green skills in

Albania remains limited but is gradually emerging. Doci and Dervishi (2021) investigated perceptions of green jobs in Albania's energy and tourism sectors, revealing low awareness among employers and minimal integration of green practices in training programs. Similarly, a study by the Regional Cooperation Council (2023) found that while Albania has significant potential in renewable energy and sustainable agriculture, the workforce lacks the skills required to fully capitalize on these opportunities. Furthermore, existing curricula in vocational schools and universities do not systematically incorporate sustainability competencies, reflecting a broader policy-practice gap.

Another key issue in the Albanian context is the mismatch between labor market supply and demand. According to INSTAT (2022), youth unemployment in Albania remains among the highest in Europe, while employers report difficulty in finding workers with relevant green and digital competencies. This disconnect points to the need for integrated, forward-looking policy approaches that align educational offerings with the requirements of a green and digital economy. A few pilot programs and donor-supported initiatives, such as those by GIZ, UNDP, and the EU Instrument for Pre-accession Assistance (IPA), have attempted to introduce green skills training in select regions of Albania. However, evaluations of these programs underscore the need for systemic reforms, including curriculum redesign, capacity-building for educators, and the establishment of sectoral skill councils (UNDP Albania, 2023). In summary, the literature highlights three dominant themes relevant to Albania: (1) the increasing global demand for green skills across sectors, (2) the gap between policy ambition and implementation capacity in Western Balkans, and (3) the urgent need for education–labor market alignment. While Albania has made some progress, significant work remains in mainstreaming green competencies in formal education and lifelong learning systems, as well as in creating incentives for employers to adopt sustainable practices.

METHODOLOGY

This research employs a mixed-methods approach combining quantitative analysis with qualitative insights to examine the current state and labor market impact of green skills in Albania. The methodology consists of three components: (1) a labor market survey of employers and employees; (2) secondary data analysis from national statistics and international databases; and (3) econometric modeling to estimate the relationship between green skills availability and employment outcomes in green sectors. Primary data were collected through structured surveys targeting 120 firms in key sectors (energy, construction, agriculture, tourism, and waste management), 420 individuals aged 18–35 from vocational schools, universities, and technical training programs. Secondary data were drawn from INSTAT (2020–2024 labor force surveys), Ministry of Education reports on VET and higher education, RCC (2023) and CEDEFOP (2022) reports on skills and employment trends in the Western Balkans.

Dependent Variable is Employment Outcome (EMPL): Binary variable indicating whether an individual is employed in a green sector (1 = yes, 0 = no). Independent Variables are Green Skills Index (GSI) – Composite score (0–1) based on self-reported technical and cognitive green competencies (e.g., energy efficiency, sustainability awareness, waste

reduction knowledge). Education Level (EDU): Ordinal variable (1 = secondary education, 2 = vocational training, 3 = tertiary education). Digital Skills (DIGI): Binary variable indicating possession of digital competencies relevant to green jobs (e.g., use of smart meters, GIS, or remote sensing). Training Participation (TRAIN): Binary variable indicating participation in green skills or sustainability-related training over the past 2 years. Work Experience (EXP): Number of years in the labor market. Region (REG): Categorical variable identifying urban/rural location (1 = Tirana, 2 = other urban, 3 = rural). Age (AGE) and Gender (GEN) were included as control variables.

To assess the effect of green skills on the probability of employment in green sectors, it is used a logistic regression model due to the binary nature of the dependent variable:

$$P(EMPL_i = 1) = \beta_0 + \beta_1 GSI_i + \beta_2 EDU_i + \beta_3 DIGI_i + \beta_4 TRAIN_i + \beta_5 EXP_i + \beta_6 REG_i + \beta_7 AGE_i + \beta_8 GEN_i + \varepsilon_i$$

Where:

- $P(EMPL_i = 1)$ = probability that individual i is employed in a green job;
- β = estimated coefficients;
- ε_i = error term.

In addition to the binary outcome model, it is ran an Ordinary Least Squares (OLS) regression to analyze earnings differences among green-skilled versus non-green-skilled workers.

$$EARN_i = \alpha_0 + \alpha_1 GSI_i + \alpha_2 EDU_i + \alpha_3 DIGI_i + \alpha_4 TRAIN_i + \alpha_5 EXP_i + \alpha_6 REG_i + \alpha_7 AGE_i + \alpha_8 GEN_i + u_i$$

The combination of logistic regression and OLS allows for a comprehensive assessment of both the likelihood of green employment and the economic returns to green skills. Logistic regression is appropriate for modeling binary outcomes, while OLS is suitable for continuous earnings variables. The models were tested for multicollinearity ($VIF < 2$ for all variables), and robustness checks included cross-validation with bootstrapping and sensitivity analysis excluding urban-only samples. This study may face several limitations as self-reporting bias in skill measurement; sector classification ambiguity, as some jobs may partially meet green criteria; regional sample imbalance, with urban regions overrepresented in employer responses. Despite these limitations, the model provides a reliable approximation of the current link between green skills and labor market outcomes in Albania.

ANALYTICAL RESULTS

The following section presents the results from both the logistic regression model estimating the probability of employment in green sectors and the OLS model assessing the earnings returns to green skills. Results are based on data from 420 individuals and 120

firms operating in five green-relevant sectors: renewable energy, sustainable construction, eco-tourism, agriculture, and waste management.

1. Descriptive Statistics

Before conducting regression analysis, it is examined key descriptive statistics of the sample:

Variable	Mean	SD	Min	Max
Employment in green job (EMPL)	0.41	0.49	0	1
Green Skills Index (GSI)	0.56	0.17	0.21	0.89
Education Level (EDU)	2.07	0.63	1	3
Digital Skills (DIGI)	0.63	0.48	0	1
Training Participation (TRAIN)	0.37	0.48	0	1
Work Experience (EXP)	5.84	4.96	0	22
Monthly Earnings (EARN, EUR)	487.32	121.88	280	800

Source: Author

2. Logistic Regression Results

Dependent Variable: Employment in green sector (EMPL = 1)

Variable	Coefficient (β)	Std. Error	z-value	p-value	Odds Ratio
Intercept	-2.14	0.52	-4.12	0.000	–
Green Skills Index (GSI)	2.76	0.71	3.89	0.000	15.82
Education Level (EDU)	0.84	0.31	2.71	0.007	2.32
Digital Skills (DIGI)	1.15	0.41	2.79	0.005	3.16
Training Participation (TRAIN)	1.22	0.39	3.13	0.002	3.39
Experience (EXP)	0.08	0.03	2.65	0.009	1.08
Region (Urban = 1)	0.56	0.28	1.99	0.046	1.75
Age	-0.02	0.01	-1.94	0.052	0.98
Gender (Female = 1)	-0.26	0.34	-0.76	0.447	0.77

Source: Author

Pseudo R² (McFadden): 0.31. It is a goodness-of-fit measure for logistic regression, similar in spirit to R² in linear regression. It has ranges from 0 to 1. Values between 0.2 and 0.4 are generally considered excellent fit for logistic models. A value of 0.31 means the model explains a reasonable proportion of the variation in the dependent variable.

Classification Accuracy: 79.6% It is the proportion of correct predictions (true positives + true negatives) made by the model. A 79.6% accuracy indicates the model correctly

classified nearly 80% of the cases. Whether this is “good” depends on the baseline (e.g., class imbalance), but in general, this is a solid result.

Hosmer–Lemeshow Test ($p = 0.62$) It is a goodness-of-fit test specifically for logistic regression. It compares observed vs. predicted probabilities in subgroups of data. Null hypothesis: The model fits the data well. A p -value > 0.05 means we fail to reject the null $\rightarrow$ no evidence of poor fit. Since $p = 0.62$, the model appears to fit the data well.

Overall Summary: The logistic regression model fits the data well, so, good pseudo R^2 , high classification accuracy and no evidence of poor fit from the Hosmer–Lemeshow test. So, reasonably trust the model’s predictive power and general conclusions. Green skills significantly increase the probability of green employment – those with higher GSI scores are nearly 16 times more likely to be employed in a green job. Participation in green training and having digital skills are also statistically significant.

3. OLS Regression Results (Earnings Model)

Dependent Variable: Monthly Earnings (EUR)

Variable	Coefficient (α)	Std. Error	t-value	p-value
Intercept	275.21	41.86	6.57	0.000
Green Skills Index (GSI)	126.84	27.42	4.63	0.000
Education Level (EDU)	43.12	18.30	2.35	0.019
Digital Skills (DIGI)	52.64	16.92	3.11	0.002
Training Participation (TRAIN)	37.11	21.55	1.72	0.087
Experience (EXP)	5.48	1.62	3.38	0.001
Gender (Female = 1)	-28.45	13.58	-2.10	0.036

Source: Author

Model fit because Adjusted $R^2 = 0.39$ and F-statistic ($p < 0.001$). A one-unit increase in the Green Skills Index is associated with an average increase of €126.84 in monthly earnings, controlling for other variables. Education, digital skills, and experience also contribute positively to wages. Gender has a negative but smaller effect, indicating a wage gap.

4. Robustness Checks

- Multicollinearity: VIF values ranged from 1.2 to 1.9 – no multicollinearity concern.
- Interaction Terms: Interaction between GSI and TRAIN was positive and significant ($p < 0.05$), indicating that training amplifies the effect of green skills on employment.
- Subsample Analysis: Results were consistent when run separately for urban and rural areas, although GSI had a stronger effect in urban labor markets.

Summary of Key Results

- Green skills significantly increase both employability and earnings in green sectors.
- Digital skills and targeted training further enhance the value of green competencies.
- Education and experience remain strong foundations, but their returns are amplified by sustainability-oriented skills.

DISCUSSION

The findings of this research underscore the critical role of green skills in shaping employment outcomes and wage levels in Albania's emerging green economy. The empirical results clearly indicate that individuals with higher levels of green competencies – measured through a composite Green Skills Index (GSI) – are significantly more likely to be employed in green sectors and to earn higher wages than those without such skills. The strong predictive power of the GSI in both the logistic and OLS models suggests that green skills are not only in demand but are also economically rewarded in the Albanian labor market. These findings are consistent with global trends reported by the ILO (2023) and CEDEFOP (2022), which argue that green skills are becoming a driver of inclusive and sustainable employment.

However, the research also reveals persistent challenges. Despite the growing demand, only 37% of surveyed individuals had received any form of green training, and green topics are still marginal in most vocational and tertiary curricula. This misalignment reflects what CEDEFOP (2022) refers to as the “green skills mismatch,” wherein educational institutions fail to respond to shifting labor market needs. Similarly, employers report a shortage of skilled workers in renewable energy, energy efficiency, and sustainable construction – three sectors prioritized in Albania's National Energy and Climate Plan. The regional divide is another notable issue. Urban respondents were more likely to possess green and digital skills, participate in training, and access green jobs. This indicates that rural areas – where sustainable agriculture, forestry, and eco-tourism are critical – remain underserved in terms of skill development infrastructure and opportunities. Bridging this divide is essential to avoid deepening labor market inequalities and regional disparities.

Additionally, the gender earnings gap observed in the OLS model raises concerns about equitable access and returns to green employment. Although the difference was moderate, it points to the need for targeted inclusion policies to ensure women fully benefit from the green transition.

CONCLUSION

Green skills represent both a requirement and an opportunity for Albania as it advances toward a sustainable, EU-aligned economy. Investing in green skills is not only a response to climate imperatives but a strategic lever to improve employment, reduce inequalities, and promote innovation. This study provides evidence that green competencies are rewarded in the labor market – and that their development must be accelerated through coordinated, data-driven, and inclusive policy measures.

POLICY IMPLICATIONS

Based on the empirical findings, this study recommends several policy interventions to accelerate green skills development and foster a just transition in Albania:

1. Integrate Green Skills into Education and Training – Revise curricula in vocational education and training (VET) and higher education to embed green competencies across disciplines, particularly in energy, agriculture, tourism, and construction. Establish national

green skills standards and certification schemes to formalize qualifications and improve employability.

2. Expand Access to Targeted Green Training – Scale up public-private training initiatives, especially short-term certification programs aligned with labor market demand. Use EU IPA and UNDP support to invest in regional training centers focused on climate-smart agriculture, renewable energy installation, and waste management.

3. Promote Employer Engagement and Incentivize Demand – Introduce tax incentives or wage subsidies for companies investing in employee upskilling in green practices. Support the creation of sectoral skills councils to foster dialogue between employers, education providers, and policymakers.

4. Address Regional and Gender Disparities – Develop inclusive policies targeting rural youth and women to enhance their participation in green jobs, including through stipends, mobility support, and flexible training formats. Launch outreach campaigns to raise awareness in underserved areas about career opportunities in sustainability sectors.

5. Strengthen Data and Monitoring Systems – Improve labor market intelligence by integrating green employment indicators into INSTAT and Ministry of Labor databases. Support longitudinal tracking of graduates from green training programs to assess employment outcomes and policy impact.

RECOMMENDATIONS

To support Albania's transition to a green economy and address the identified skills gap, this study puts forward the following evidence-based recommendations for government institutions, education providers, industry stakeholders, and international development partners:

1. Develop a National Green Skills Strategy – Formulate a comprehensive Green Skills Development Strategy (2025–2030) aligned with Albania's Climate and Energy Plans and the EU Green Agenda for the Western Balkans. Establish an inter-ministerial working group (Education, Labor, Environment, and Economy) to coordinate green skills policies across sectors.

2. Integrate Green Competencies into Curricula – Revise curricula at vocational schools, universities, and adult learning centers to embed sustainability and climate literacy across all disciplines. Include practical modules on renewable energy, sustainable agriculture, green construction, and waste reduction.

3. Expand Short-Term and Modular Training Programs – Support the development of flexible, short-term training and certification programs for green technologies and practices in priority sectors (e.g., solar installation, energy auditing, permaculture). Provide incentives for non-formal and lifelong learning to enable reskilling and upskilling of the existing workforce.

4. Foster Public–Private Partnerships for Skill Development – Engage employers in the design of sector-specific training content to ensure alignment with labor market needs. Establish industry advisory councils in key green sectors to inform training standards and internships.

5. Target Marginalized and Underserved Groups – Design targeted interventions to include rural youth, women, and unemployed graduates in green skills programs. Offer mobility support, stipends, and childcare services to reduce participation barriers.

6. Strengthen Career Guidance and Awareness – Launch national campaigns to promote green career pathways, especially in underdeveloped regions. Integrate green job information into career counseling services in schools, employment offices, and community centers.

7. Leverage EU and Donor Funding – Utilize EU IPA III, Erasmus+, and UNDP technical assistance to pilot green skills academies, develop e-learning tools, and support research. Ensure that green job creation and skills development are core components of externally funded infrastructure and development projects.

8. Build a Monitoring and Evaluation (M&E) System – Develop a Green Skills Observatory under the National Employment Service or INSTAT to collect real-time data on labor demand, training outcomes, and skill shortages. Use labour market foresight tools to anticipate green employment trends and adjust training offers accordingly.

These recommendations are designed to accelerate Albania's readiness for the green transition while ensuring that no region or demographic is left behind. Investing in green skills today is an investment in climate resilience, economic competitiveness, and inclusive development.

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CIRCULAR ECONOMY PRACTICES IN THE EUROPEAN UNION (EU): LESSONS FOR GLOBAL SUSTAINABLE DEVELOPMENT

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Abstract

The European Union (EU) has emerged as a pioneer in embedding Circular Economy (CE) principles into economic and environmental policy, aiming to decouple growth from resource depletion. This paper examines the EU's circular economy strategies through an analysis of regulatory frameworks, industry-specific initiatives, and cross-border cooperation. Methodologically, it employs a comparative case study approach, focusing on sectors such as manufacturing, packaging, and renewable energy, to assess how CE practices contribute to waste reduction, resource efficiency, and low-carbon development. The findings demonstrate that the EU's integrated model – anchored in the Circular Economy Action Plan and aligned with the European Green Deal – provides valuable insights into governance, innovation, and stakeholder collaboration. The study further discusses the scalability of EU experiences to non-European contexts, considering institutional, cultural, and economic differences. The paper concludes that EU's CE practices offer both a blueprint and a set of adaptable lessons for global sustainable development, particularly in advancing the UN Sustainable Development Goals (SDGs).

Keywords: Circular economy, European Union, sustainability, global development, SDGs

JEL: Q01, Q56, Q58

1. INTRODUCTION

In the face of escalating global sustainability challenges ranging from climate change and biodiversity loss to resource depletion and mounting waste, the urgency to transition toward more regenerative and efficient economic models has never been greater. The linear economic paradigm of “take-make-dispose” that has dominated industrial production for over a century is increasingly proving unsustainable. It not only drives environmental

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degradation and greenhouse gas emissions but also deepens global inequalities through inefficient resource allocation and externalized ecological costs.

The circular economy (CE) emerges as a transformative framework to address these interconnected crises. By promoting strategies such as resource efficiency, product longevity, recycling, and industrial symbiosis, the CE model seeks to decouple economic growth from resource use and environmental harm. Among global regions, the European Union (EU) has positioned itself as a frontrunner in implementing circular economy policies. Through the EU Circular Economy Action Plan (2015) under the “Closing the Loop” initiative and the New Circular Economy Action Plan (2020) within the European Green Deal framework, the EU has established comprehensive strategies that integrate regulatory, financial, and innovation instruments. These initiatives aim not only to reduce waste and enhance recycling but also to foster sustainable product design, digitalization, and circular value chains across sectors.

The purpose of this paper is to analyze the European Union’s circular economy practices and derive insights that contribute to global sustainable development. Specifically, the study aims to (1) outline the conceptual and theoretical underpinnings of the circular economy; (2) examine the EU’s implementation strategies and policy instruments; (3) propose policy recommendations applicable to global contexts; and (4) highlight implications for future sustainability transitions.

The paper is structured as follows:

Section I: Introduction

Section II: Conceptual and Theoretical Framework

Section III: Circular Economy in the European Union

Section IV: Policy Recommendations

Section V: Conclusion

2. CONCEPTUAL AND THEORETICAL FRAMEWORK

The circular economy (CE) has emerged as a transformative paradigm challenging the conventional linear growth model of “take – make – dispose.” Unlike this extractive system, the CE envisions a restorative and regenerative economy in which materials, energy, and resources circulate continuously to minimize waste and environmental degradation. As defined by the Ellen MacArthur Foundation (2013), the CE seeks to eliminate waste and pollution, extend product lifespans, and revitalize natural systems. Its guiding principles – reduce, reuse, recycle, redesign, and regenerate collectively enhance resource efficiency, product durability, and sustainable innovation, aligning with the broader goal of decoupling economic growth from material consumption. The conceptual foundation of the CE draws from multiple theoretical traditions. From the sustainable development perspective, it embodies the “triple bottom line” approach that integrates economic viability, environmental protection, and social equity (Elkington, 1997).



Fig. 1. The interconnection of the elements of the Triple Bottom Line concept

Source: John Elkington, 1997

Complementing this, ecological modernization theory (Mol & Spaargaren, 2000) posits that sustainability can be realized through technological innovation, institutional reform, and sound governance, rather than economic restraint. The CE operationalizes this vision through eco-design standards, extended producer responsibility, green public procurement, and digital transformation, showcasing how modernization can simultaneously yield economic and environmental gains.

Collectively, these frameworks establish the CE as a core pathway for decoupling economic expansion from resource depletion. Such decoupling may be relative to achieving higher efficiency per resource unit or absolute, where overall resource extraction and emissions decline despite growth. The European Union's CE initiatives demonstrate the practical viability of this model through integrated governance, technological advancement, and behavioral transformation. By coupling economic innovation with environmental stewardship, the CE offers a holistic blueprint for sustainable prosperity within planetary boundaries.

3. CIRCULAR ECONOMY IN THE EUROPEAN UNION

3.1. Policy Frameworks

The transition toward a CE represents one of the key pillars of the European Union's (EU) sustainable development strategy over the past two decades. The EU's policy framework on the CE did not emerge abruptly; rather, it is the outcome of a process of institutional evolution, implemented through a coherent roadmap and closely linked to climate, energy, and industrial policies. The core documents include the 2015 Circular Economy Action Plan, the 2020 New Circular Economy Action Plan, the Extended Producer Responsibility (EPR) mechanism, and their integration with climate and energy policies under the Fit for 55 package and the European Green Deal. Together, these four policy frameworks constitute a comprehensive system in which the CE functions not only as an environmental protection tool but also as a foundation for industrial innovation, resource productivity enhancement, and the pursuit of carbon neutrality across the bloc by 2050.

This process is illustrated in **Table 1**, which depicts the formation and development of the EU's CE policy instruments during the 2015 – 2025 period:

Table 1. Key Legislative and Strategic Milestones of the EU Circular Economy Transition (2015 – 2025)

Year	Policy Event / Action Program	Main Objectives and Impacts	Lead Institution
2015	<i>Circular Economy Action Plan (CEAP 2015) – Closing the Loop</i>	Established the first legal foundation for the circular economy; 54 actions in five key areas: production, consumption, waste management, secondary raw materials, and innovation.	European Commission (EC)
2018	<i>Waste Framework Directive (Directive 2018/851/EU) & Plastics Strategy</i>	Raised the EU municipal waste recycling target to 65% by 2035; reduced marine plastic litter; promoted packaging recycling models.	European Parliament and Council of the EU
2020	<i>New Circular Economy Action Plan (CEAP 2020) – part of the European Green Deal</i>	Strengthened eco-design, expanded EPR, and set the goal of 100% recyclable or reusable packaging by 2030.	EC – Directorate-General for Environment (DG ENV)
2021	<i>Fit for 55 Package</i>	Reduced greenhouse gas emissions by at least 55% by 2030; integrated CE with energy and climate policy.	European Commission (EC)

Source: Compiled by the authors.

The EU's first Circular Economy Action Plan (CEAP), adopted in 2015 under the title *Closing the Loop – An EU Action Plan for the Circular Economy* (European Commission,

2015), marked the EU's formal commitment to a circular growth model focused on closing material loops across the value chain. The plan outlined 54 actions covering design, production, consumption, and recycling, emphasizing key sectors like plastics, packaging, food, electronics, and construction. It established a legal framework to promote waste reduction, recycling, secondary materials markets, and green innovation. Between 2004 and 2018, the EU's average recycling rate increased from 44% to nearly 48%, creating over 4 million green jobs. However, CEAP 2015 remained largely waste-oriented, with limited attention to eco-design and sustainable consumption, and its implementation was uneven across Member States due to institutional capacity differences.

To overcome the shortcomings of its predecessor, the New Circular Economy Action Plan (CEAP 2020) was launched under the European Green Deal, serving as the EU's most ambitious roadmap toward a green and circular economy. Building on the 2015 plan, CEAP 2020 shifted focus from waste management to value-chain optimization, emphasizing product design, consumption behavior, and industrial innovation. It set a 2030 target for all EU packaging to be recyclable or reusable and introduced key instruments such as the Sustainable Product Policy Framework and Digital Product Passport to enhance product traceability and recyclability (European Commission, 2020). The plan prioritized six resource-intensive sectors – electronics and batteries, packaging, plastics, textiles, construction, and food – while linking with Horizon Europe and InvestEU to finance research and circular technology development.

Importantly, CEAP 2020 strengthened legal enforceability through mandatory eco-design rules, EU Ecolabel standards, and transparency requirements compelling firms to integrate sustainability from the design phase. However, implementation remains uneven, as technological and data infrastructure gaps persist across Member States, and small and medium-sized enterprises (SMEs) struggle with high compliance costs. Thus, while CEAP 2020 provides a comprehensive and forward-looking framework, its success relies on robust technical capacity and financial support throughout the EU.

A key enforcement mechanism within the EU's CE framework is the Extended Producer Responsibility (EPR) system, which holds producers accountable for the entire lifecycle of their products – from design to post-consumption disposal. Under the revised Waste Framework Directive (EU 2018/851), Member States must implement mandatory EPR schemes for packaging, batteries, electrical and electronic equipment, and motor vehicles. This mechanism shifts the financial responsibility for waste management from governments to producers, encouraging eco-design and recyclability. Evidence from Eurostat (2024) shows that early EPR adopters like Germany, Belgium, and the Netherlands achieved plastic packaging recycling rates between 45–60%, above the EU average of 41%. Nevertheless, EPR effectiveness varies across nations, constrained by differences in monitoring, enforcement, and fair fee allocation, especially in cross-border supply chains.

Moreover, the integration of CE with climate and energy policies under the European Green Deal and Fit for 55 package has elevated CE to a core macroeconomic strategy. The Fit for 55 initiative aims to cut greenhouse gas emissions by 55% by 2030 (relative to 1990), with CE identified as a key enabler through material recycling, energy efficiency, and product lifespan extension (European Commission, 2021). For instance, adopting Electric Arc Furnace (EAF) technology in the steel sector can reduce CO₂ emissions by over 60%, while

the Carbon Border Adjustment Mechanism (CBAM) incentivizes low-carbon, circular materials (OECD, 2024).

Taken together, the EU's CE framework forms a coherent policy evolution: CEAP 2015 laid the legal groundwork; CEAP 2020 prioritized design and innovation; EPR operationalized producer responsibility; and Fit for 55 aligned CE with climate goals. This systemic integration has positioned the EU as a global leader in transforming the CE from an environmental initiative into a comprehensive green growth strategy that unites industry, energy, and society toward sustainable development.

3.2. Implementation Practices

The EU has emerged as a global pioneer in the implementation of CE practices through a combination of legislative frameworks, market incentives, and innovation-driven initiatives.

A core foundation of the EU's CE strategy lies in its waste prevention and recycling objectives. The Waste Framework Directive (2008/98/EC) and subsequent updates established binding targets to minimize landfill dependency, enhance waste separation, and raise recycling rates. By 2030, the EU aims to recycle 65% of municipal waste and 70% of packaging waste, limiting landfill disposal to no more than 10% of total waste. Member States must implement national waste prevention programs and EPR schemes, ensuring that producers bear responsibility for end-of-life product management. These measures have spurred significant investment in collection, sorting, and recycling infrastructure across Europe.

Complementing these efforts, the Eco-design Directive (2009/125/EC) promotes sustainable product design centered on durability, reparability, and recyclability. It mandates environmental performance standards for diverse product categories from home appliances to industrial machinery. By embedding circularity at the design stage, the Directive enables easier repair, disassembly, and material recovery, extending product lifecycles and reducing raw material dependency. The 2020 CE Action Plan further reinforced this through the "right to repair" initiative, empowering consumers to make sustainable purchasing choices.

The EU also fosters circular business models that redefine production and consumption dynamics. Approaches such as product-as-a-service, sharing platforms, leasing, and remanufacturing prioritize access over ownership, encouraging firms to design longer-lasting, repairable, and efficient products. Industrial symbiosis networks, where one company's waste becomes another's resource, exemplify CE principles at the operational level and promote cross-industry collaboration.

Circular implementation is further tailored to key resource-intensive sectors. The EU Plastics Strategy (2018) mandates all plastic packaging to be recyclable or reusable by 2030 and bans single-use plastics. The Textiles Strategy (2022) advances eco-design and recycling technologies, while the Circular Electronics Initiative supports take-back systems and responsible e-waste management. In construction and food systems, policies encourage material reuse, waste valorization, and bio-based circularity, embedding CE principles across the EU's industrial ecosystem.

Therefore, these initiatives have propelled the EU toward climate neutrality and zero-waste goals, establishing it as a global leader in sustainable transformation. The EU's

experience demonstrates that integrating regulation, innovation, and business model change can drive a resilient, low-carbon, and resource-efficient economy, offering a blueprint for other regions pursuing green growth.

3.3. Achievements and Challenges

The implementation of the CE within the EU has produced significant achievements in recycling performance, the development of secondary materials markets, and the stimulation of green innovation. Recycling rates across the bloc have steadily increased, with the municipal waste recycling rate reaching nearly 48% in 2018, compared with 44% in 2004 (European Commission, 2019). Member States such as Germany, the Netherlands, and Austria have achieved recycling rates above 65%, supported by robust waste segregation systems and well-established EPR schemes (Eurostat, 2023). The expansion of the secondary raw materials market has also reduced the demand for virgin resource extraction while promoting new business models in remanufacturing, repair, and product – as – a – service. Furthermore, the integration of circularity into the European Green Deal and the Fit for 55 package has attracted substantial investment in low-carbon innovation, resulting in over four million green jobs across the EU (European Commission, 2020). Collectively, these outcomes demonstrate that the CE has evolved into a cornerstone of the EU’s sustainable growth strategy, aligning environmental protection with industrial competitiveness.

However, several challenges persist that hinder the full realization of circularity across the Union. Considerable disparities remain among Member States in terms of institutional capacity, infrastructure quality, and technological readiness. While Northern and Western European countries demonstrate strong implementation capacity, parts of Southern and Eastern Europe continue to face limited investment and enforcement gaps (OECD, 2025). Monitoring and compliance issues also persist, particularly regarding eco-design enforcement, cross-border waste flows, and the establishment of data transparency mechanisms under the Digital Product Passport (European Commission, 2021). Additionally, the EU’s dependence on global supply chains for critical raw materials such as rare earths, lithium, and cobalt creates structural vulnerabilities that complicate efforts to achieve full material circularity (OECD, 2025). These challenges underscore the need for greater policy harmonization, cross-border cooperation, and enhanced investment in circular infrastructure and innovation ecosystems to ensure that the EU’s CE transition remains both equitable and globally resilient.

3.4. Comparative Insights: EU versus Global Practices

3.4.1. Japan’s Sound Material – Cycle Society framework

The EU and Japan represent two influential yet distinct models in advancing the CE. The EU’s approach is technology-driven and sector-specific, emphasizing the institutionalization of binding legal frameworks across industries. In contrast, Japan’s Sound Material-Cycle Society (SMCS) framework – introduced in 2000 – reflects an earlier, more tradition-oriented system grounded in the principles of the 3Rs (Reduce, Reuse, Recycle) and community-based resource management. While both economies share the overarching goal of enhancing resource efficiency, their pathways diverge.

The EU adopts a top-down governance model, underpinned by comprehensive policies such as the Circular Economy Action Plan (CEAP), which defines sector-specific standards for product design and sustainability. This regulatory framework supports a market-oriented transition and positions the EU as a global frontrunner in CE governance (European Commission, 2020). Recent milestones, including the 2025 public consultation for a forthcoming Circular Economy Act and the target to double the circularity rate by 2030, underscore the bloc’s determination to accelerate a system-wide transformation toward circularity.

Conversely, Japan’s SMCS is a legislation-based model rooted in traditional values of material stewardship and environmentally sound waste management. It promotes gradual progress through periodic revisions of its Fundamental Plan and is supported by strong private-sector initiatives, such as the Japan Partnership for Circular Economy (J4CE). However, despite its early leadership, Japan has experienced slower progress in recent years, partly due to high reliance on incineration and limited structural innovation compared to the EU’s expanding legal framework (MOEJ, 2021).

Table 2. The comparison between EU and Japan’s practices in the Circular Economy

	EU Circular Economy	Japan's Sound Material-Cycle Society
Key Policy	Circular Economy Action Plan	Basic Act for Establishing a Sound Material-Cycle Society (2000)
Strategy	Institutionalizing sector-specific laws, pushing for global market penetration	Focusing on the 3Rs (Reduce, Reuse, Recycle) and waste management
Current Status	Moving rapidly with a strong legislative push, aiming to double circularity rate by 2030	Early pioneer, but progress has slowed in recent years
Strengths	Strong legislative framework and market integration	Early mover advantage, strong community-based practices, and a foundation for a resource-conscious society
Challenges	Need to integrate local context and social needs more effectively	High incineration rates, slowing progress in recent years, and less of a global market focus compared to the EU

Source: Compiled by the authors.

Overall, the EU’s regulatory momentum and Japan’s culturally embedded, industry-driven approach offer complementary perspectives on implementing circular economy principles. Their contrasting trajectories illustrate that while legal institutionalization can accelerate large-scale transformation, sustained behavioral and cultural engagement remains equally vital for long-term circularity success.

3.4.2. Contrast with emerging CE initiatives in developing countries (Vietnam, India)

While the EU leads the global CE agenda through comprehensive legislation, regulatory coherence, and international standard-setting, developing countries such as Vietnam and India are still in the early stages of CE adoption, focusing primarily on policy experimentation and capacity-building. The EU's top-down approach, supported by strong institutional frameworks like the Circular Economy Action Plan (CEAP), ensures systematic integration of circularity across production, consumption, and waste management. In contrast, Vietnam and India rely more on bottom-up initiatives, often driven by pilot projects, donor-supported programs, and private-sector engagement rather than cohesive national legislation. Vietnam, for instance, has begun incorporating CE principles into its National Strategy on Green Growth (2021–2030) and the Environmental Protection Law (2020), while India promotes CE through initiatives like Swachh Bharat Abhiyan and the EPR framework in the plastics and electronics sectors. However, both countries face structural challenges, including limited infrastructure, weak enforcement mechanisms, and insufficient public awareness. Despite these constraints, the growing momentum in developing economies reflects a strong commitment to aligning with global sustainability goals, suggesting that with targeted policy support and technology transfer from regions like the EU, they can gradually accelerate their transition toward circular and resilient economic models (Nguyen, 2023).

The EU has emerged as a global frontrunner in shaping the CE agenda through its progressive policies and global outreach. By integrating CE principles into the Circular Economy Action Plan (CEAP) and the European Green Deal, the EU has made circularity central to its climate and economic strategy. Beyond its borders, it drives global alignment through regulatory innovation, trade policies, and sustainability diplomacy. Its focus on international cooperation and harmonized standards further strengthens its influence, positioning the EU as a key force guiding the worldwide transition toward a low-carbon, resource-efficient, and resilient economy.

3.5. Lessons for Global Sustainable Development

A coherent legal framework with enforceable standards is fundamental to advancing the CE. Countries must move beyond fragmented initiatives and develop integrated legislation linking production, consumption, and waste management under a unified strategy. Effective implementation depends on measurable goals, transparent monitoring, and coordination across sectors, tailored to local governance capacities rather than copying external models (European Commission, 2020; OECD, 2024).

The CE also shows that sustainability drives innovation and competitiveness. Green industries, circular business models, and resource-efficient technologies foster inclusive growth. Financial tools such as green bonds and fiscal incentives, alongside technology transfer and international research collaboration, help narrow innovation gaps and accelerate transformation (UNEP, 2023; World Bank, 2022).

Social engagement and behavioral change are equally vital. Education, eco-labeling, and the “right to repair” cultivate sustainable consumption habits, while integrating CE

principles into curricula and supporting informal recycling sectors ensures an inclusive transition (ILO, 2023).

Finally, the CE's success depends on global cooperation. Aligning standards for product design, recyclability, and waste management supports fair trade in secondary materials and prevents environmental dumping. Strengthening partnerships through international platforms and equitable North–South and South–South collaboration promotes shared responsibility for a just and resilient global circular transition (European Commission, 2021; UNEP, 2023).

3.6. Challenges of Transferring EU Practices Globally

The EU's CE framework offers a valuable reference for sustainable transformation, but its transfer to developing economies is highly context-dependent. The EU's achievements stem from strong institutions, robust enforcement, and advanced technological and financial capacities – conditions not easily replicated elsewhere. Thus, directly transplanting EU policies without local adaptation risks inefficiency and weak implementation.

Institutional and governance limitations pose major obstacles in many developing countries. Fragmented administrations, poor coordination, and limited regulatory capacity often hinder policy execution (World Bank, 2022). Weak data systems further restrict monitoring and evidence-based decision-making.

Financial and technological barriers also constrain CE adoption. Initiatives like eco-design, industrial symbiosis, and waste valorization demand substantial investment and innovation capacity, which small and medium-sized enterprises (SMEs) often lack. Without targeted funding or incentives, compliance costs may discourage participation and slow progress (UNEP, 2023).

Additionally, informal recycling sectors – while vital for material recovery – operate outside formal regulations, limiting environmental performance and social protection. Their integration through training, cooperative organization, and inclusive policymaking is essential for equitable and effective CE transitions (ILO, 2023).

Finally, “policy transplantation” without contextual adjustment risks failure. A one-size-fits-all approach ignores national development goals, governance realities, and cultural norms. Instead, countries should localize CE strategies through gradual policy sequencing, institutional learning, and recognition of indigenous practices (OECD, 2024). The EU model, therefore, should function as a flexible guide – adapted through collaboration, capacity-building, and sustained international support rather than direct replication.

4. POLICY RECOMMENDATIONS

Strengthening regulatory frameworks is vital for advancing circular economy (CE) practices. Countries should adopt comprehensive laws that integrate waste management, eco-design, and extended producer responsibility (EPR), drawing lessons from the EU's Circular Economy Action Plan (CEAP), which links production, consumption, and waste management under one framework. Clear monitoring indicators – such as material footprint, recycling rate, and resource productivity – are essential for tracking progress and ensuring policy coherence across sectors like energy, climate, and trade.

Governments should also boost investment in green innovation and R&D, particularly in materials science, waste-to-energy, and sustainable product design. Promoting industrial symbiosis through innovation clusters or “Circular Economy Hubs,” along with open-access data platforms for sharing best practices, can accelerate knowledge exchange and help developing economies effectively adapt proven EU models.

To support business transition and stimulate green investment, policymakers should introduce fiscal incentives such as tax breaks, green bonds, and subsidies to encourage companies to shift from linear to circular business models. Promoting green public procurement (GPP) is also essential, as governments can act as powerful market drivers by prioritizing the purchase of recyclable, repairable, and resource-efficient products. Moreover, it is crucial to facilitate the participation of small and medium-sized enterprises (SMEs) in the circular economy by offering technical assistance and easier access to financial instruments modeled after the European Investment Bank’s Green Financing Initiative. These measures collectively create a favorable environment that motivates businesses to innovate sustainably while maintaining competitiveness and contributing to long-term environmental goals.

To build consumer awareness and drive behavioral change toward sustainability, governments and institutions should launch educational campaigns that emphasize sustainable consumption habits, the importance of repair culture, and proper waste segregation. Adopting transparent product labeling schemes, such as the EU Ecolabel, can further empower consumers to make informed and environmentally responsible purchasing decisions by clearly communicating the ecological impact of products. Additionally, integrating circular economy principles into national education curricula at all levels will help cultivate a long-term cultural shift, nurturing future generations who are conscious of sustainability and actively engaged in supporting circular practices in their everyday lives.

To foster international cooperation and knowledge transfer in advancing the circular economy, it is vital to encourage partnerships between the European Union and developing economies through technology transfer, joint research initiatives, and capacity-building programs. Such collaborations can accelerate the global diffusion of innovative circular practices and enhance institutional capabilities in emerging markets. Promoting the harmonization of standards – particularly in areas such as recyclability, eco-design, and waste classification – will further facilitate international trade in secondary raw materials and ensure consistency across borders. Moreover, leveraging global platforms such as UNEP, OECD, and the WTO to establish international frameworks aligning circular economy principles with the Sustainable Development Goals (SDGs), especially SDG 12 on responsible consumption and production, can help create a unified global agenda for sustainable and inclusive economic transformation.

To address the social and equity dimensions of the circular economy transition, policymakers must ensure a just transition by supporting workers in industries impacted by circular models through targeted reskilling programs and comprehensive social protection policies. Promoting inclusivity is equally important, which can be achieved by encouraging community-based recycling, local repair networks, and other grassroots initiatives that generate employment and empower vulnerable or marginalized populations. Furthermore, aligning circular economy initiatives with social innovation will help ensure that environmental objectives go hand in hand with improvements in social well-being and economic

equity, ultimately fostering a more inclusive and sustainable transition that benefits all segments of society.

To enhance monitoring and accountability mechanisms in circular economy implementation, countries should establish national CE observatories modeled after the EU's Circular Economy Monitoring Framework to systematically collect, track, and analyze data on performance and progress. Encouraging transparent reporting from industries and municipalities on key indicators such as resource efficiency, waste reduction, and recycling outcomes will help ensure that progress is measurable and publicly accountable. Additionally, benchmarking national achievements against international standards and best practices can promote healthy competition, foster continuous improvement, and strengthen global confidence in the effectiveness of circular economy policies.

Global policymakers should adapt – not adopt – EU practices, tailoring them to local contexts. The EU's experience demonstrates that successful circular economy transitions depend on policy integration, innovation ecosystems, stakeholder collaboration, and citizen engagement. For developing nations, combining EU lessons with indigenous knowledge and localized governance will be key to achieving global sustainable development through circularity.

5. CONCLUSION

The EU has become a global leader in CE implementation, showcasing how environmental protection, economic growth, and social well-being can advance together under a unified framework. Through initiatives like the Circular Economy Action Plan, the EU promotes resource efficiency, eco-design, waste reduction, and green innovation, forming an integrated system that connects production and consumption sustainably.

The EU's experience illustrates that circular transition requires coherent policies, multi-sector collaboration, and citizen engagement, aligned with global goals such as SDG 12 on responsible consumption and production. For other regions, especially developing economies, the EU model provides a useful roadmap – but one that must be adapted to local contexts, institutional capacities, and socio-economic realities. With tailored strategies focused on capacity-building, technology transfer, and inclusive governance, countries can leverage circularity as a pathway toward sustainable, low-carbon, and resilient development.

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CSR INITIATIVES INFLUENCE ON EMPLOYEES' COMMITMENT: CASE OF BAGRAIN' ISLAMIC BANKS

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Abstract

Previous research on corporate social responsibility CSR has focused only on the macro-approach which delves into the effects of CSR on the organizational or institutional level. Considering this gap, in the present research, we emphasize the micro-approach which can be used to shed light on the repercussions that CSR can have on employees' perceptions and behaviors. Particularly, we aim to examine how perceived internal and external CSR actions influence employees' perceptions and commitment in the context of Bahrain' Islamic banks. This study thus specifically endeavors to identify the impact of CSR initiatives on employees' commitment and perceptions. The theoretical framework of this paper is based on the stakeholder and social identity theories. Based on a non-probability sampling method, the model draws on survey data collected from a sample of 50 employees working in Bahrain Islamic banks. Islamic banks were not randomly chosen, as Islamic finance is supposed to achieve the highest degree of worldwide sustainable development goals. Based on the regression analysis, the study found a positive relationship between CSR initiatives and employees' commitment. The study proves a significant impact of perceived internal CSR (good and fair salary, fair training programs, appropriate workplace, effective incentives, and ethical treatment) on employees' commitment. The perceived external CSR is also found as a determinant factor of employees' commitment. Research outcomes will help practitioners and managers to setup more effective CSR strategies to enhance employee's commitment as well as provide insight into how Islamic finance can reinforce the practice of CSR dimensions in order to ensure sustainable development. This research will contribute positively to the existing CSR literature by providing a clear examination of the importance of internal CSR dimensions while simultaneously extending the knowledge and understanding regarding the impact of internal CSR initiatives on employees' engagement in the context of Islamic banks

Keywords: CSR initiatives; perception; commitment; Islamic banks; sustainable development

INTRODUCTION

Recently, Islamic finance has been growing in numerous countries, especially in the Gulf region and the north of Africa where it has participated in the improvement of the region's economic, social and environmental development, the three of which are the basic dimensions of sustainable development (SD here after). In fact, the principles of Islamic banking are supposed to be aligned with SD objectives which are incorporated in CSR policies. Many innovative Islamic tools and instruments have been developed in order to ensure and improve the commercial transactions that are aligned with SD goals. This can have a positive perception not only on the banks' shareholders but, more significantly, on their employees, as this orientation can prompt and engage the latter to be more loyal to their institutions. Islamic finance can, indeed, contribute effectively in economic, social

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and environmental prosperity. Notably, Zakat funds are supposed to have huge potential in attaining SD objectives in Bahrain. From the perspective of sustainability, CSR and SD were developed largely by Freeman (1984) and Carrol. (1979) to demonstrate the importance of social objectives that should not contradict the economic goals of the firm. The classic authors, precisely Friedman (1976), aggressively defended the shareholders' interest at the expense of other social partners' interests.

In fact, at the time of the 2008 financial crisis, Islamic finance was considered as a safe solution for non-Muslim countries. This fact has attracted the attention of practitioners, academics and scholars to reconsider the niche as a fundamental, mainstream alternative. Although the construct of CSR has been extensively studied in the context of conventional banks, CSR in Islamic banks is still a promising and challenging field for academics and researchers. The social goals of Islamic banks are just as important as making profit, as promoted by their sustainable development goals. Islamic Banks are facing a challenging, competitive environment which urges the use of new business tools and management philosophies. The new challenge of Islamic banks will be the continuous improvement of CSR initiatives. Islamic banks are expected to practice better efficient and effective CSR initiatives given that they rely on Islamic rules. All Islamic values should be reflected when dealing with different stakeholders. Internal stakeholders, namely the employees, will identify themselves with their organization because they consider it to generate positive and trusting outcomes.

CSR has internal and external dimensions, which means that CSR can serve the interests of diverse stakeholders. The internal dimension depicts the benefits of employees and the external one addresses issues which serve the interest of external beneficiaries such as customers, the community and the general public.

In the mid-1990s, researchers and academics started outlining the ethical dimensions of the stakeholder theory. Behavioral aspects have been proven as mediators between a firm's outcomes and CSR initiatives. The objective of the paper is to explore how employees perceive their CSR actions and how these actions can significantly influence their commitment to their organizations. The next section reviews CSR theories and literature in detail. The rest of the paper is structured as follows: The research methodology is explained in Section 4. Results are presented in section 3 and discussions are reported in Section 5. The paper's conclusion is presented in Section 6.

LITERATURE REVIEW

Islamic Finance and sustainable development nexus have been explored by several researchers. Islamic banks participate in the economic prosperity and in the social well-being of communities. Achieving the three Ps (profit, people and planet) demands an effective participation and macro orientation of banks to adopt the initiatives that satisfy all their stakeholders not only a micro level which privileges only the shareholders' interests. Islamic finance can be, to a large extent, an important pillar of global sustainability. Babington and Unerman (2018) have highlighted the role of accounting academicians and scholars in the attainment of the United Nations' SD goals, which are supposed to be the most goals

in understanding and achieving environmental and human development ambitions. These two authors synthesized several approaches in the literature on SD and its integration with accounting for sustainability. They found that current research in accounting related to SD has started to build a nexus between them. So, this research has a reinvigorating contribution to accounting in relation to sustainable development debates. Christensen; et al., (2017) stated that sustainability standards can serve as relevant governance tools to solve social and environmental issues. The authors viewed communication as constitutive of organization openness in the implementation of standards. They advanced a managerial outlook in order to engage managers and employees by mobilizing their sustainability background towards organization goals. Furthermore, Rosati and Faria (2019) advanced that large organizations with high level of intangible assets and high rate of female directors and a younger board of directors adopt SD reporting and have higher commitment to sustainability contexts. Thus, their study participated enormously to the academicians and practitioners understanding of facets linked to the sustainable initiatives taken by organizations to satisfy their stakeholders. Based on the CSR communication literature, Schoeneborn, et al., (2019) studied the relationship between CSR practices and CSR communication. They have distinguished between three variants on CSR communication scholarship: walking to talk, talking to walk and t/walking. This classification helps frame the new area of research on CSR communication. In the same sense, Freeman (1984) has distinguished between three perspectives of the CSR to promote the normative, the instrumental and the descriptive social approaches which can be compared with the talking to walk/ (normative) and the t/walking (instrumental) and walking to talk (descriptive). However, Carrol (1979) presented a seminal work which is considered a core theory on CSR. He presented a model which encompasses different dimensions of CSR: economic, legal, ethical and discretionary.

In fact, Caputo et al., (2017) highlighted the drivers of introducing innovative sustainable management tools. They demonstrate how these driving forces can emphasize the firm's potential to engage with its stakeholders and to move from the talking to the walking approach of the CSR. The corporate strategy should be aligned with the SD goals based on an effective and real social and environmental responsibility which leads to tangible practices in the real context. That is why we have to understand the normative engagement of the CSR as provided by Coronella, et al., (2018) as it provides an analytical overview on the subject of CSR. The study focuses on CSR's development in Italy where it was found that ethical values and stakeholders are influenced by the thinking of the Italian *Economia Aziendale* scholars who emphasize the normative approach and consider that the firm should hold up to its social promises and declarations while also holding up the stakeholder's expectations. So, it is very important to know how to make CSR practical and to overpass the rhetoric aspect. In this sense, Winkler et al., (2019) have explored the rhetorical dynamics of CSR between the talk and the practice. They argue that talk about CSR can attract attention and security from organizational members. Moreover, continuing adherence to this rhetoric can lead to a vicious circle without real engagement. However, a virtuous circle requires a shift from talking to walking to a practical engagement. Mory et al., (2015) have highlighted that the focus was given more to external stakeholders. Indeed, the internal dimension of CSR needs more investigation by academics since employees'

perceptions have drastically influenced the outcome of firms. They reveal that it is very crucial to study the effect of employees' perceptions of CSR initiatives on their real performance and engagement. Aguinis and Glavas (2012) stressed that employees' engagement is essentially related to their perceptions regarding CSR initiatives. Indeed, Rupp et al., (2013) and Bridoux et al., (2016) suggested that employees' perceptions of CSR may actually have a strong and direct impact on their reactions regarding the organization's behaviors towards CSR activities. Morgeson et al., (2013) stressed the need to explore the perception of employees and their reactions towards CSR and how they can be more loyal to their company if it is in fact socially responsible. The question revealed in this context was how can the employees' perceptions or satisfaction regarding their companies' initiatives and activities be measured. Therefore, El Akrem et al., (2018) stated that the lack of studies on employees' perceptions may be the result of the dearth of tools to measure perceptions.

In this paper we are also accounting for the Islamic dimension as a very important promoter of CSR principles. Inspired by the work of Carroll (1991) who proposed that the discretionary component of CSR has to be replaced by philanthropic intentions, and based on the explication of CSR formulated by the Accounting and Auditing Organization for Islamic Finance Institutions (AAOIFI), a high concurrence is identified between CSR structures in conventional economic systems and the social responsibility of finance institutions from a religious perspective as advanced by Franzoni and Allali (2018).

Distinct streams of research have undertaken CSR in the context of Islamic financial institutions (IFI). The first stream highlights the religious aspect of CSR, (Williams and Zinkin 2010); Yusuf, and Bahari, 2011). The second area of research concentrated on CSR conduct and disclosure for IFI. Recently, Samina (2012) and Sairally (2013) studied customer perceptions related to CSR, and they demonstrated the empirical aspects of the CSR initiatives that can lead to customer satisfaction. Moreover, Khurshid et al., (2014). presented an Islamic CSR model (ICSR). The authors analyzed the four dimensions of Carroll (1979) from an Islamic perspective. Their major findings highlight that there are similarities between CSR dimensions in Islamic ideology and those advanced by the traditional schools of Donaldson, and Preston (1995). These conclusions also corroborated the findings of Kamal et al (2012) and Williams and Zinkin, (2010). They confirm that some CSR dimensions are consistent with the directions and the spirit of Islam which then may be applied to Islamic business firms. However, we can say that the religion in general can be considered as the inspiring foundation of CSR theory from the ideological approach. Here, a historical and geographical dilemma can be created to confirm the relationship between CSR promises and the framework of religion. Whatever the convergences may be, we can conclude that there is an absolute affinity between the principles of SD and Islamic CSR promises since they both diverge to promote the satisfaction of the global value of all firm stakeholders and assure safe prosperity for society in the long term.

CSR AND ORGANIZATIONAL COMMITMENT (OC)

The Stakeholder theory suggests that managers should consider their stakeholders' relationships when tailoring their strategies, Freeman (1984). Stakeholders are classified into two major groups: primary and secondary. The primary stakeholders are vital for the firm and the nature of stakeholder-firm relationship drastically influences the firm's outcomes. From a CSR perspective, employees benefit from CSR initiatives applied by the firm and they also play a fundamental role in ensuring the success of implemented CSR programs.

Although Donaldson and Preston (1995) have presented four classifications of CSR: descriptive, normative, instrumental and managerial, two major dimensions of the stakeholder theory have been chosen to be extensively studied: the normative and instrumental approach. The instrumental aspect of the stakeholder theory considers that stakeholders are instruments to achieve the organization's goals. In fact, the stakeholder theory can be embedded in the social sciences by focusing on the instrumentalist approach and the 'Business Ethics strand', the latter of which argues that each stakeholder holds an intrinsic value and requires reference to ethical standards.

In the present study, we focus on OC as it is considered by many scholars and academics in organizational behavior a critical factor that influences all organizational issues such as turnover and absenteeism rate, job satisfaction, citizenship behavior, and performance.

OC is widely defined as the individual emotional attachment to the organization. The strong belief in the organization's 'mission and vision' will lead the employees to consider that they own their organization. This strong positive psychological attachment will build a high sense of pride for being part of the organization and thus employees will believe that their organization values them.

Allen and Meyer (1991) presented a conceptualization of commitment through a model composed of three separable components: affective, continuance and normative. Affective commitment indicates an employee's emotional reaction when they feel that there is an alignment between their values and those of the organization. Normative commitment explains that employees feel an obligation that to continue their employment. Finally, continuance commitment is originated in employees' social and economic costs when they are leaving their organization.

Previous studies have drawn on the social identity theory (SIT) when examining the influence of CSR initiatives on OC (Brammer et al., (2007); Turker, (2009); Farooq, et al., (2014)). According to the SIT, individuals with high identification levels will feel themselves in the same boat with their organizations, which spawns high levels of cooperation and a strong willingness to proliferate the organizational performance.

When employees perceive that their organizations are doing authentic corporate social initiatives for them and for society as a whole, they will become more attached as they believe that they belong to a desirable entity. Their self-concept is made up of the positive perceptions of what they are doing and what their organization is doing for them. Kim and Thapa (2018) claimed that the existence of positive motives for CSR activities fosters employees' identification with the organization. The good image of the organization will encourage the social behavior in the workplace, which will result in an increase in the corporate social performance. Recent studies identify a positive link between employees' CSR

perceptions and their affective OC (Rego et al., (2010); Stites and Michael (2011); Turker (2009)).

MATERIALS AND METHODS

This section introduces the research design, the sample and the data analysis of the survey.

This research is based on an exploratory method. An employee survey was conducted on the top 5 banks in Bahrain¹. This approach was applied to explore the impact of employees' perceptions regarding the CSR initiatives and the influence of social activities on their commitment and satisfaction. These banks were chosen due to their listing as the most admired banks in 2020, thus, we expect a significant relationship between their CSR initiatives and employees' positive perceptions and commitment.

As for data collection, answers were collected, then a qualitative analysis was conducted in the first phase. This sequential method provides in-depth explanation of the respondents' views based on the quantitative results. Using non-probabilistic sampling, the questionnaire was given to a sample of 10 respondents from each bank resulting in a sample size of 50 employees.

Part I of the questionnaire covers the profile of the bank and identifies the existence of CSR variables. This part gathered information regarding the number of employees, the number of disabled employees, the existence of a CSR committee, the reporting of CSR, an Environment/TOM/ISO certification, the code of conduct and workforce diversification.

Part II of the questionnaire determines employees' perceptions regarding CSR initiatives undertaken by their banks. Items are rated using a 5-point Likert scale ranging from:

Part III of the questionnaire assesses the significant influence of CSR initiatives on employees' commitments. Items are rated using Likert scale (5 points)

The final outputs represent percentage of the respondents' summative views related to each component of the survey.

RESULTS

Banks' profiles and CSR description

Table 1 and 2 summarizes the results of the research. All of the sample banks are effectively participating in the community in which they are operating, which assures the sustainable development of the region. Some of them concentrate on direct stakeholders such as employees and customers while others are more focused on charitable initiatives.

¹ There are more than 114 banks in Bahrain, including 23 retail banks, 69 wholesale banks, 2 specialized banks, as well as 36 representative offices of overseas banks. The country's banking system consists of Islamic banks and conventional banks. Bahrain is the financial hub of the Middle East. The Central Bank of Bahrain (CBB) regulates the banking and insurance sectors in the country. The legal, regulatory, and accounting systems in Bahrain's financial sector are transparent and consistent with international standards". Source <https://corporatefinanceinstitute.com/resources/careers/companies/top-banks-bahrain/FMVA™> Financial Analyst Certification

Nevertheless, we have found that these certified banks, which are also the most admired banks in the country, do not necessarily have a CSR committee or an annual report for CSR practices. 75% of the sample consists of Islamic banks, so they are naturally meant to have a normative obligation to ethically serve their stakeholders. It is interesting to stress the total adoption of a strict code of best practices which govern their conduct vis-a-vis their stakeholders.

Table 1. Banks profiles

	Bank A	Bank B	Bank C	Bank D	Bank E
Number of employees	12,644	344	7,700	203	700
CSR committee	yes	yes	No	no	yes
Reporting of CSR	yes	no	Yes	no	yes
Certification	yes	yes	Yes	yes	yes
Code of Conduct	yes	yes	yes	yes	yes
Workforce diversification in board committee	no	no	yes	yes	yes

Source: Annual reports of the Banks.

Table 2. Brief Description of CSR reporting

	Bank A	Bank B	Bank C	Bank D	Bank E
Brief description of CSR Reporting:	The Bank continued to carry out its social responsibility by directing its products and services for the construction of the communities in which it operates and by improving the quality of these products and services, as well as through the financing of small and medium-sized enterprises and the development of youth skills.	The Charitable Appeals Committee of the Board has overseen the making of charitable donations by the Bank for several years, promoting charitable causes around the world, particularly in relation to the health and well-being of children.	GIB has an enduring commitment to the GCC banking industry and the communities in which it operates, supporting a range of sustainable development programs and local initiatives.	To promote entrepreneurship & innovation in the kingdom, by encouraging professionals, enterprising women & ambitious youth who demonstrate strong business acumen & leadership qualities in promoting the growth & prosperity of Small and Medium Enterprises (SMEs) through financial support and advisory services	the Bank undertook several initiatives to enhance customer experience – including a major project of upgrading its core banking system and its E-Banking offering, as well as upgrading its Information Technology (IT) infrastructure and systems to support business growth and improve operational efficiency

Source: Annual Reports of Banks.

Employees' perceptions of CSR initiatives

Employees' perceptions of CSR initiatives regarding employees

Table 3 and figure 1 show that employees have a positive reaction towards CSR initiatives regarding their own interests. In fact, about 71.5% of employees show positive perceptions whenever the bank is engaged in activities that serves their demands, satisfies their needs and improves and develops their skills and performances. In fact, whenever the bank is interested in developing the workforce, it is well appreciated by the employees, since training and development programs will offer them a chance of promotion, and consequently, an increment in their rewards. Thus, it is expected that more engagement from banks towards their employees

will result in greater appreciation and motivation by employees.

Table 3. Employees perceptions of CSR initiatives towards employees

CSR to employees	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree	
The bank motivates its employees to participate in charitable activities	1	2	15	25	7	
The managerial decisions relating to employees are usually fair	0	1	10	27	12	
Our superior does not practice discrimination in the organization	1	3	10	21	15	
Our superior inspires us to behave correctly	6	10	12	12	10	
The management of our bank is principally worried with employees' needs and desires	1	2	7	25	15	
The bank implements multiple policies to provide a good work- life balance	3	6	1	33	7	
The bank supports employees who need to acquire additional learning	0	1	9	30	10	
Bank policies encourage employees to develop their expertise and professions	1	2	10	30	7	
Total	13	27	74	203	83	400
Percentage	3.25%	6.75%	18.5%	50.75%	20.75%	100%

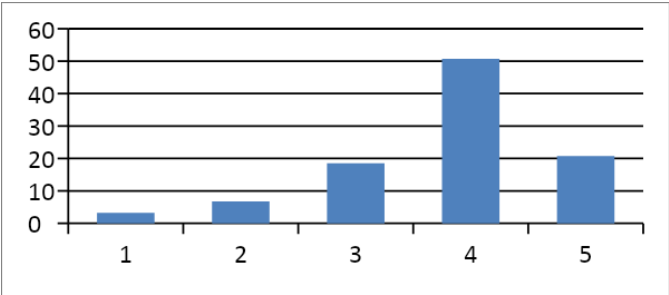


Fig. 1. Impact of CSR initiatives regarding employees on employees' perceptions

Employees' perceptions of CSR initiatives regarding customers

As demonstrated in Table 4 and figure 2 below, about 69% of Employees have positive perceptions when they find that their banks practice positive engagements regarding customers by improving the quality of services provided, and therefore, increasing customers' satisfaction (walk strategy). This is because they know that if customers are satisfied profit will increase, and consequently, they will be better compensated. Therefore, banks should be concerned with maintaining good relationships with their customers through the offering of good quality products and services that fully satisfy their customers. Satisfying customers is thus an important intangible asset that has a direct effect on employees' perception motivation and loyalty towards their banks.

Table 4. Employees’ perceptions of CSR initiatives regarding Customers

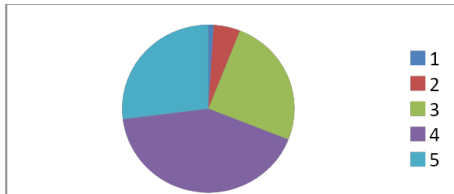
CSR to customers	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree	
Our bank defends consumer privileges further than the legal requirements.	0	2	33	7	8	
Our bank offers complete and correct information about its products to customers	2	5	12	20	11	
Customer satisfaction is highly important to our bank	0	0	0	35	15	
Our bank continuously improves the quality of our products and services	0	3	5	22	20	
Total Percentage 	2 1%	10 5%	50 25%	84 42%	54 27%	200 100%

Fig. 2. Impact of CSR initiatives regarding customers on employees’ perceptions

Employees’ perceptions of CSR initiatives regarding the community and the environment

From the distribution of employees’ views given in figure 3 and in table 5, we notice that the impact of CSR initiatives regarding the community and the environment on employees’ perceptions is less appreciated by the employees. Nonetheless, there is still a dominant positive perception of employees when their banks are engaged in the community and the environment in which they operate. 66.8% of employees agree and strongly agree on the importance of the role of their banks as a sustainable business that contributing effectively in society and as one that supports the surrounding environment. Any employee can possess a positive perception if their bank is well-perceived in the society where it operates and they feel that the bank is valued by the community when it helps in creating local jobs, gives to charity and supports health and education in that community. Moreover, banks can also participate in the well-being of society by supporting investment in green building and in smart city infrastructure. Cooperation effectively to achieve sustainable development, thus, helps employees develop a positive perception of the initiatives taken by their banks regarding the community and they will therefore develop more trust in their banks.

Community and the Environment
CSR initiatives and employees’ commitment

Influence of CSR initiatives regarding employees on employees’ commitment

In this step of analysis, the research concentrates on the impact of that CSR initiatives regarding employees can have on their commitment. It seems from our results in table 6

and figure 4 that 89% of employees view the CSR initiatives regarding their own interests as a crucial lever to be more preferment and committed. In fact, this result corroborates the results of the majority of previous studies in the sense that a high degree of satisfaction of employees induces a high commitment. In fact, whenever the bank undertakes an effective and fair appraisal policy, employees will be more satisfied, more engaged and more committed to their work. Moreover, the supervisor should behave in an ethical way and set an example which motivates his or her employees to behave ethically and become more engaged vis-a-vis their duties and workplace. Managers should also satisfy the needs of their employees and provide them with training programs which improve their skills and grant them more confidence in their abilities. As a result, employees will be more engaged in their duties and do their best to perform better. Ultimately, employees should feel that they have secured a good job and are working in a safe place. This can be ensured only through effective CSR initiatives regarding the satisfaction of employees by providing them with good rewards, incentives and safe work conditions.

Table 5. Employees’ perceptions of CSR initiatives regarding the community and the environment

CSR TO Community and environment	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree	
Our bank contributes to movements and campaigns that promote the well-being of society (charitable actionse)	2	3	10	25	10	
Our bank adopts special programs to minimize its negative impact on the natural environment	0	0	5	25	20	
Our bank sims to protect and improve the quality of the natural environment	0	0	15	13	22	
Our bank creates sustainable investment opportunities	5	10	21	2	12	
Our bank aims for sustainable growth	0	0	12	28	10	
Total	7	13	63	93	74	250
Percentage	2.8%	5.2%	25.2%	37.2%	29.6%	100

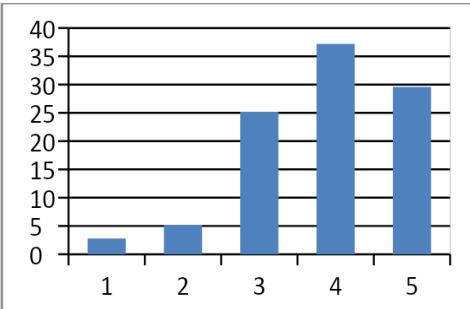
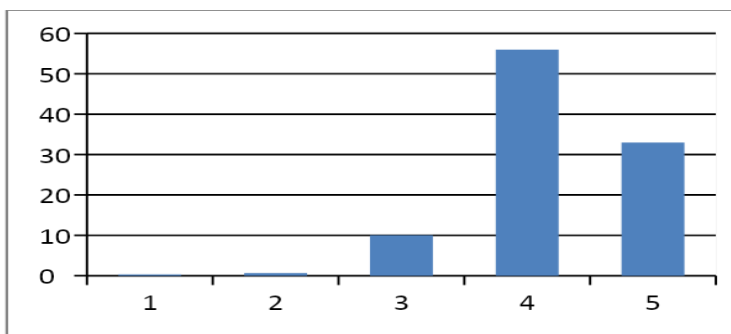


Fig. 3. Distribution of employees’ perceptions of CSR initiatives regarding the community and the environment

Table 6. Influence of CSR Initiatives regarding employees on employees' commitment

Influence of CSR Initiatives regarding employees on employee's commitment	Not at all significant	Slightly significant	Somewhat significant	Moderately significant	Strongly significant	
when our bank undertakes a clear and fair policy of appraisal, we will be more committed	0	0	0	27	23	
When the workplace is safer, we will be more confident	0	0	0	32	18	
When our superior does not practice discrimination, we will be more engaged	0	0	0	29	21	
When our superior behaves correctly, we will also behave correctly	0	0	15	23	12	
When the management is principally worried with our needs and desires, we will be more loyal	0	0	0	35	15	
When our superior supports us to acquire additional learning, we will be more committed	1	2	15	22	10	
Total	1	2	30	168	99	300
Percentage	0.34%	0.66%	10%	56%	33%	100%

**Fig. 4.** Influence of CSR initiatives regarding employees on employees' commitment

Influence of CSR initiatives regarding customers on employees' commitment

According to results in table 8 and in figure 5, employees can be committed to their work when their managers are socially responsible when it comes to customers. We found almost 78.6% of our respondents agree that if customers are satisfied through good products and services, they will be more loyal, and so, the employees will be proud of their banks being known as a leader given the quality of its services and facilitations. Therefore, employees will be more engaged in performing their tasks when the bank is also engaged in satisfying customers' interests. This is because employees feel responsible for the services provided to the final customer and they therefore believe that they have to continue investing more effort in order for the customers to be more satisfied. An increase in customer satisfaction is linked by the employees to increased profit and thus increased rewards. Therefore, the greater the CSR initiatives regarding customers are, the greater the engagement and commitment of employees towards the goals of their banks.

Influence of CSR initiatives regarding the community and the environment on employees' commitment

From the distribution presented in Figure 6 upon answers of respondents given in table 9, it seems that 44% of employees find that this impact is somewhat significant and only 17.33% of them agree that CSR initiatives regarding the community and the environment can have on their engagement. This relationship seems to be less evident because of employees' psychological nature that dictate that employees are often looking to attain direct interests that can be directly achieved by stakeholders' satisfaction, for instance, since customers can directly affect the income of the bank. However, the satisfaction of the community and the environment takes time and is indirectly linked to the employees' interests. Therefore, it appears that employees are more sensitive to the direct effects on their interests. It is an obvious result, given that when banks are socially responsible and more engaged in satisfying employees demands in terms of improving their work conditions, their training programs and development, their salary and per consequence their loyalty and commitment will be increased as well.

Based on the overall result obtained, it is revealed that the concern of CSR initiatives regarding employees has the most significant effect on the employees' commitment in banks in the Kingdom of Bahrain. That is why we conducted the following part of the correlations analysis to check the significance of this effect more accurately.

Table 7. Influence of CSR initiatives regarding customers on employees' commitment

CSR TO customers	Not at all significant	Slightly significant	Somewhat significant	Moderately significant	Strongly significant	
When our bank defends consumer privileges, we will be prouder and more committed.	2	10	17	18	3	
When our bank offers complete and correct information about its products to customers, we will be more confident and so we will be more engaged	0	0	3	33	14	
When our bank continuously improves the quality of our products or services, our skills will be improved, and we will be more committed	0	0	0	45	5	
Total	2	10	20	96	22	150
Percentage	1.33	6.67	13.34	64	14.66	100

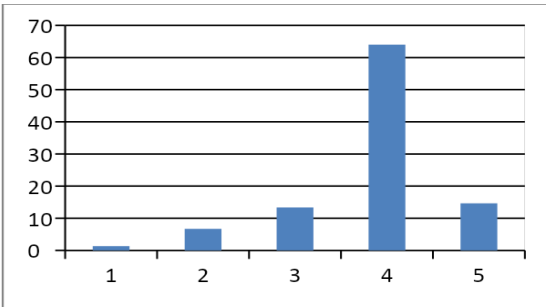


Fig. 5. Distribution of the influence of CSR initiatives regarding customers on employees' commitment

Table 8. Influence of CSR initiatives regarding the community and the environment on employees’ commitment

CSR TO community and environment	Not at all significant	Slightly significant	Somewhat significant	Moderately significant	Strongly significant	
When our bank contributes to movements and campaigns that promote the well-being of society, we will be more committed	3	10	20	12	5	
When our bank adopts special programs to minimize its negative impact on the natural environment, we will be more engaged	5	12	30	3	0	
When our bank creates sustainable investment opportunities, we will be more loyal	10	18	16	5	1	
Total	18	40	66	20	6	150
Percentage	12%	26.67%	44%	13.33%	4%	100%

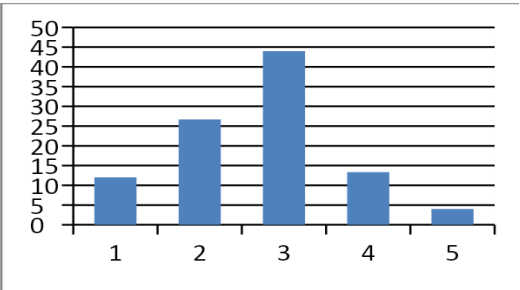


Fig. 6. Influence of CSR initiatives regarding the community and the environment on employees’ commitment

Correlations Analysis

According to our sample composed of 50 employees, their commitment depended in a great measure on the social initiatives regarding their own benefits. The data shows 89% of positive attitudes towards their job is dependent on the firm undertaking CSR initiatives to improve employees’ salary, training, and work conditions. The correlation analysis is given in Table.

Table 9. Correlation Analysis

		Social initiatives regarding employees	Employees commitment
Social initiatives regarding employees		1	.921**
	Pearson Correlation		
	Sig. (2-tailed)		.000
Employees commitment	N	50	50
		.921**	1
	Pearson Correlation		
	Sig. (2-tailed)	.000	
	N	50	50

Note: **. Correlation is significant at the 0.01 level (2-tailed).

The below shows the model summary. The R^2 of the study is 0.698. It shows that the variation in dependent variables due to independent variables is around 60%, which is a very high impact.

Table 10. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.921	.696	.692	.29521

The below Table 11 shows the overall significance of the study as the P value is 0.000.,that shows the model is significant at 1% level of significance.

Table 11. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.524	.154		7.214	.000
1 CSR initiatives regarding the employees	.754	.042	.921	12.561	.000

Note: Dependent Variable: Employees Commitment

CONCLUSIONS AND RECOMMENDATIONS

The aim of this study was to explore the relationship between the internal and external CSR initiatives of the organization on employees’ perceptions and commitment. Based on the regression analysis, this study depicts that there is a positive relationship between the CSR initiatives regarding the employees and the employees’ commitment. In other words, the study proves a significant impact of good and fair salary, fair training programs, a good

place to work, effective incentives and ethical treatment on employees' commitment at 1% level of significance. The current results are in line with existing literature, such as Gong, et al. (2010) who argued that social and ethical responsibility represent a positive atmosphere for employees' organizational commitment. Our findings also corroborate the claims of Kim et al., (2018). The authors suggest that CSR should be considered as an active investment instead of an obligation. If employees perceive a positive self-concept, their psychological commitment will be high. Indeed, their work attitudes and performance influence the organizational performance.

The results achieved by this study have critical implications for academic research as shown by the correlation within the objectives of this research. Bahrain Banks' employees are generally influenced by CSR initiatives regarding key stakeholders of their banks, namely, employees, customers and the community in the large sense. Nonetheless, employees are more sensitive and more influenced by the satisfaction of their own benefits. They positively perceive these different initiatives, and they will be more committed toward their workplace. In fact, the employees can be effectively engaged when their institutions are also effectively engaged in such social programs. Islamic finance can contribute effectively in the achievement of SD goals by undertaking real initiatives regarding the interest of the stakeholders that can also positively influence the reactions of employees towards effective achievement of the organization's goals. Islamic banks should also align the organization's strategy goals with SD goals and satisfy the interests of its stakeholders by demonstrating real managerial initiatives and social engagement. Lastly, Islamic Banks talk should be aligned with the walk of the organization towards SD goals, mobilizing the employees through effective and sincere initiatives taken by the banks to satisfy its stakeholders.

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THE IMPACT OF AI-DRIVEN PERSONALIZATION ON CONSUMER TRUST AND LOYALTY IN E- COMMERCE

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Abstract

This study examines how AI-driven personalization in online shopping influences consumer trust and loyalty. While AI's impact on customer satisfaction is well-studied, its role in building trust remains less explored. Through in-depth interviews with 35 regular online shoppers, the research finds that AI personalization fosters trust by delivering relevant, customized experiences. However, concerns about data privacy and transparency can undermine this consideration if not adequately addressed. The study also reveals that trust established through AI personalization strongly encourages repeat purchases and brand loyalty, particularly when the personalization matches consumers' preferences and needs. These findings highlight the importance for online retailers to balance personalized experiences with privacy considerations to build and maintain lasting consumer relationships. Overall, this research advances the understanding of consumer behavior, digital trust, and the strategic use of AI in retail environments.

Keywords: AI-driven Personalization, Consumer Trust, Consumer Loyalty, E-commerce, Data Privacy, Ethical AI

INTRODUCTION

The e-commerce sector has undergone a significant transformation due to the rapid advancement of artificial intelligence (AI), which has revolutionized the way businesses interact with their customers. AI-powered personalization, which includes methods like customized product suggestions, targeted advertising, and tailored user experiences, has become a key element for boosting customer engagement and improving sales. These technologies enable businesses to offer unique shopping experiences, providing consumers with relevance and convenience. As online shopping becomes more personalized, the focus on consumer trust and loyalty has intensified, driven by growing concerns about data privacy and AI algorithm transparency. Trust is essential for online platforms, as it directly influences customers' willingness to engage with personalized content and make repeat purchases. Loyalty, on the other hand, relies on consistent, positive interactions with brands over time.

Despite significant advancements in AI technology, there remains a limited understanding of how AI-based personalization explicitly impacts consumer trust and loyalty. Many studies have explored AI's role in increasing customer satisfaction. However, the direct connection between personalized experiences and consumer trust, especially regarding data security and privacy, has not been thoroughly examined. Closing this gap is crucial, as the effectiveness of AI personalization depends not just on its ability to deliver relevant experiences but also on maintaining consumer trust regarding the use of their data.

The primary aim of this study is to investigate the relationship between AI-powered personalization and its impact on consumer trust and loyalty in the e-commerce sector. By examining the perceptions and behaviors of online shoppers, this research seeks to understand how personalized experiences

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shape consumer trust and foster long-term loyalty. The key question guiding this study is: How does AI-driven personalization influence consumer trust and loyalty in e-commerce? This paper aims to contribute to existing literature by providing new insights into the ethical and relational dynamics of AI personalization, trust, and consumer loyalty. It offers valuable implications for e-commerce businesses looking to build lasting customer relationships in a world increasingly driven by digital and data considerations.

LITERATURE REVIEW

The use of Artificial Intelligence (AI) in online retail has significantly transformed customer engagement, particularly through AI-powered personalized experiences. These advancements allow online retailers to provide unique interactions, such as tailored product recommendations, customized ads, and specific content. Although there has been a lot of focus on the technical side of AI, including the accuracy and speed of recommendation systems, the influence of these technologies on consumer trust and loyalty has not been thoroughly examined. Recent research highlights that AI-driven personalization not only improves user satisfaction but also plays a complex role in affecting how consumers behave and think, especially in building trust in the platform (Flavián et al., 2021; Jannach et al., 2022; De Biasio et al., 2023).

Trust has always been essential in how consumers act, especially in e-commerce, where face-to-face contact with the brand is limited. In online environments, various elements influence consumer trust, including how secure the platform seems, how clearly personal information is gathered and used, and the ethical issues related to AI systems. A study by Yadav et al. (2024) indicates that clarity in AI algorithms and honest communication about the use of data are crucial for fostering trust. If transparency is lacking, shoppers might suspect that their information is being exploited for profit, which can damage trust (Jakkula, 2020; Gupta & Jain, 2023). Additionally, concerns regarding privacy and biases in algorithms are increasingly seen as essential obstacles to trust in AI systems, leading consumers to question the treatment of their data and whether AI behaves fairly (Aker et al., 2021; Williams, 2023).

The Technology Acceptance Model (TAM) is frequently utilized to analyze how consumers accept new technologies, including AI. According to this model, aspects like perceived usefulness and ease of use play a crucial role in shaping consumer willingness to interact with AI-enabled systems (Davis, 1986). In the realm of AI-based personalization, this framework implies that people are more inclined to trust and engage with platforms when they find the personalized features helpful and user-friendly. Nevertheless, research shows that personalization needs to achieve a delicate balance. At the same time, it can enhance perceived relevance and boost satisfaction (Usai et al., 2021), too much personalization can lead to consumer burnout, where individuals feel exhausted or controlled by too many recommendations (Chandra et al., 2022).

Consumer loyalty in online shopping is tightly connected to how satisfied and trusting shoppers feel towards a platform. Loyalty often emerges from having positive experiences repeatedly with a brand, usually built on a foundation of trust and familiarity. According to Madhuri et al. (2024) and Tumpa (2021), personalized experiences driven by AI enhance consumer loyalty by offering unique interactions that align with individual tastes, making buyers feel appreciated. However, it is important to note that loyalty is not driven by personalized touches alone. Various studies by Miao et al. (2021),

Qalati et al. (2021), and Baidoun s Salem (2024) emphasize that trust significantly influences consumer loyalty. When customers have faith in a platform's AI systems, they tend to come back and make additional purchases. On the other hand, concerns about the fairness of AI systems or the ethical management of personal information can significantly damage trust, potentially lowering consumer loyalty. While there is a growing acknowledgment of how AI can cultivate customer loyalty, there remain gaps in the academic literature concerning the psychological and ethical aspects of AI personalization. For example, although some research has scrutinized the performance of AI systems technically (such as the precision of recommendations), the effects of ethical data usage and transparency on fostering consumer trust and loyalty have not been thoroughly examined (Wang et al., 2020; Oyekunle, 2024). Furthermore, much of the existing research focuses on Western markets, with limited investigation into the differences in how consumers from various cultures view AI and personalization. Recent findings indicate that consumer apprehensions regarding AI can vary significantly between cultures, with some regions being more attentive to privacy concerns than others (Teodorescu et al., 2023; Akbar et al., 2024). In addition, while the link between trust and AI personalization has been discussed in previous studies, the reciprocal relationship between tailored experiences and consumer choices is often neglected. It is important to examine how the perceived fairness of AI systems and ethical concerns regarding personal data collection and usage shape trust. Further investigation is needed to explore how loyalty in AI-driven settings is influenced not only by satisfaction but also by the fundamental trust consumers have in the fairness of algorithms and the transparency of data use by the platform. In sum, although AI-driven personalization has shown promise in boosting consumer satisfaction and engagement, its effectiveness depends on preserving consumer trust. This requires careful management of data privacy, transparency, and fairness in AI algorithms. The identified gaps in current literature, particularly concerning the ethical aspects of AI personalization and the differences in trust and loyalty across cultures, highlight the need for more empirical research. By addressing these issues, this study seeks to shed light on how AI-driven personalization affects consumer trust and loyalty in online shopping, offering important insights for both academic studies and business applications.

METHODOLOGY

This research took a qualitative approach to examine how AI-driven personalization affected consumer trust and loyalty in online shopping. It employed semi-structured interviews and focus group discussions to gather detailed opinions from consumers who had used AI-enhanced platforms. The study was structured as a qualitative case study, which allowed for an in-depth investigation of various consumer perspectives and experiences across multiple e-commerce sites. Participants were selected through purposive sampling to ensure they had firsthand experience with AI-based personalization, representing a variety of demographic groups and shopping behaviors. Data collection occurred remotely, with interviews and focus groups conducted via video conferencing tools. Thematic analysis was employed to identify key patterns and insights within the recorded and transcribed sessions. Data were systematically organized, and themes were developed using NVivo software. Ethical considerations included obtaining informed consent, ensuring participant confidentiality, and complying with GDPR. The study also addressed issues of trust and privacy by encouraging participants to reflect on the ethical implications of AI.

FINDINGS AND ANALYSIS

These results were obtained from semi-structured interviews and focus group discussions held with 35 individuals who frequently shop on e-commerce sites that use AI-based personalization methods. The goal was to explore how personalized experiences affect consumer trust and loyalty. Most participants, 78% in total, recognized the success of AI-based personalization, particularly in product suggestions and customized advertisements. However, their levels of satisfaction varied. Customers who believed the recommendations matched their needs expressed greater satisfaction, representing 63%. In contrast, those who found the suggestions repetitive or inaccurate reported a negative experience, with 37% feeling this way. Trust in e-commerce platforms that utilize AI emerged as a significant theme in the discussions. Approximately 56% of the participants noted that clarity about how their data is used significantly affected their trust. Those who understood the use of their data felt more at ease with AI-based personalization. Conversely, 44% expressed concerns regarding data privacy and the transparency of algorithms, stating that unclear information about data management negatively impacted their trust in these platforms.

Privacy issues were a significant concern for 60% of the participants, and many felt uncomfortable with the extent of personal data collected without their full knowledge. This led to feelings of consumer fatigue for 47% of those interviewed. These consumers reported feeling manipulated, and 36% chose to opt out of personalized suggestions by disabling tracking functionalities. Fatigue was prevalent among users who frequently received irrelevant recommendations, prompting them to disengage from personalized features.

Participants who demonstrated a strong level of trust in AI-based platforms showed greater loyalty. About 67% of respondents indicated they would revisit a platform with effective AI personalization. Moreover, those who had positive experiences with AI, such as receiving customized offers and timely recommendations, were more inclined to recommend the platform to others. In fact, 72% of these respondents considered themselves loyal customers. In contrast, those who felt their preferences were not accurately understood (28%) or felt overwhelmed by too much personalization (23%) showed less intention to remain loyal.

A key aspect of the analysis investigated participants' thoughts on the ethical dimensions of AI. Individuals aware of AI-driven personalization techniques reported increased trust if the algorithms used by the platform were viewed as fair and not exploitative. Notably, participants who aligned with platforms that practiced ethical data management and transparency in AI had remarkably higher levels of trust (71%) and loyalty (68%).

The results indicate a complex link between personalization through AI, consumer trust, and loyalty. When AI is used for product suggestions and targeted ads in a clear and relevant manner, it significantly boosts consumer satisfaction and engagement. Trust stands out as the key element that affects loyalty, in line with the Trust Theory proposed by Mayer, Davis, and Schoorman (1996), which suggests that belief in a platform is necessary for repeat interactions. Nevertheless, concerns regarding transparency and data privacy were critical in shaping how much consumers trusted these systems. Participants who viewed e-commerce sites as transparent about how they used data were more inclined to be loyal, reinforcing the idea that trusting AI is not only about its performance but also about using data ethically. Notably, the study also points out that too much AI personalization can be harmful. Those who felt overwhelmed or fatigued by irrelevant recommendations experienced a decrease in both trust and loyalty. This aligns with earlier research indicating the downsides of excessive personalization, as found in studies by Chandra et al. (2022) and Karami et al. (2024). This

highlights the necessity for platforms to achieve a careful balance between personalizing experiences and allowing consumers to make their own choices.

The Technology Acceptance Model (TAM), introduced by Davis (1986), helps explain how participants accept AI systems, particularly in terms of their perceived usefulness and ease of use. Individuals who found AI personalization helpful, as it provided relevant product suggestions aligned with their needs, were more inclined to trust the platform and make future purchases. However, when there was a lack of explicit consent and transparency about how data was handled, some users began to question the platform's intentions, which harmed their trust and loyalty. This finding is consistent with the research conducted by Yadav et al. (2024), who noted that unclear information about AI usage can harm trust in online shopping platforms.

Additionally, the research confirmed that consumer loyalty is influenced not only by their satisfaction with the service but also by their perception of the platform's ethical standards and fairness in using AI. Studies by Madhuri et al. (2024) and Tumpa (2024) indicated that loyalty is complex and shaped mainly by trust. In this case, the application of AI responsibly served as a link between satisfaction and loyalty. Consumers who felt AI personalization was managed carefully were more likely to show lasting loyalty to a platform.

In conclusion, when applied transparently and responsibly, AI-driven personalization in e-commerce can improve consumer satisfaction and trust. However, issues regarding data privacy, excessive personalization, and the ethical treatment of AI can reduce these advantages. For e-commerce sites to improve loyalty, it is crucial to find a balance between personalization and safeguarding consumer trust with ethical and transparent data practices.

DISCUSSION

The results of this research show a complex and detailed interplay between AI-driven personalization, consumer trust, and loyalty in online shopping. The outcomes support the Technology Acceptance Model (TAM) (Davis, 1986), indicating that customers who found AI-driven personalization useful and applicable were more inclined to trust the platform and make repeat purchases. For many participants, personalized suggestions such as custom product recommendations and targeted discounts improved their shopping experience, leading to greater satisfaction. This aligns with earlier studies by Yadav et al. (2024), which highlighted the positive effect of well-implemented AI on consumer trust and loyalty. However, the research also revealed significant concerns about consumer fatigue and the risks associated with excessive personalization. Nearly half of the respondents indicated that they felt overwhelmed or manipulated by the high volume of tailored content, especially when suggestions appeared irrelevant or overly repetitive. This contrasts with earlier research that focused on the generally positive effects of personalization (Chandra et al., 2022). The differing views of AI-based personalization among various consumer groups may explain this contrast, as some individuals find it beneficial, while others consider it intrusive or excessive. Based on these results, too much personalization can diminish its benefits, reducing the effectiveness of AI-driven systems.

Another crucial aspect that emerged was data privacy, which significantly affects consumer trust. Several participants expressed concerns about how much of their personal information was being collected and used for personalization, echoing findings from Madhuri et al. (2024) and Tumpa (2024), who emphasized that transparency is key to building trust. Consumers who understood how their information was being used felt more at ease with the AI systems, leading to stronger trust and loyalty.

This is consistent with the growing body of literature on ethical AI and underscores the necessity for e-commerce platforms to focus on clear communication regarding data usage.

The practical implications of these findings suggest that e-commerce sites should prioritize personalization approaches that are relevant and transparent. Personalization should offer benefits without overwhelming customers with excessive or irrelevant information. Allowing customers to adjust the level of personalization or even opt out completely could alleviate concerns about consumer fatigue and data privacy. Additionally, platforms must ensure they communicate clearly how AI algorithms utilize consumer data. Such transparency can be fostered through accessible policies or notifications that clarify the personalization process, which would likely enhance consumer trust and loyalty.

While this research provides valuable insights, it has certain limitations. The participant group of 35 individuals, though sufficient for a qualitative study, might not fully capture the range of consumer experiences across various demographics, particularly in relation to age, socioeconomic backgrounds, or cultural identities. A more extensive and varied group would likely provide deeper insights and a broader perspective on how different demographics perceive AI-driven personalization. Furthermore, the research included participants from urban locations in the Western world, which may not accurately represent opinions in non-Western markets. Additional studies could examine cultural differences in how consumers perceive AI personalization, as attitudes toward data privacy and trust can vary significantly between regions. Additionally, the study's snapshot approach limits its ability to document changing consumer attitudes over time. As AI technologies in e-commerce continue to evolve, future research could investigate the long-term effects of personalization on trust and loyalty, considering how these elements develop as consumers increasingly interact with these systems. A longitudinal study would offer a more thorough understanding of how consumer perceptions change and the lasting impacts of AI on buying behavior.

Therefore, this study highlights the considerable promise of AI-driven personalization in improving consumer satisfaction, trust, and loyalty within e-commerce. However, it also emphasizes the importance of maintaining a balance, ensuring that personalization remains relevant and transparent without overwhelming customers or compromising their privacy. E-commerce platforms that adopt ethical and transparent AI practices are more likely to build deeper trust and stronger loyalty with their clientele. Future research could expand on these findings by overcoming the study's limitations, increasing the participant pool, and exploring the long-term implications of AI-driven personalization across various sectors and cultural settings.

CONCLUSION

The results of this research demonstrate that AI-driven personalization in online shopping significantly influences how consumers perceive trust and loyalty, although the impact is intricate and multifaceted. When consumers find personalized suggestions helpful and relevant, it often enhances their trust in online shopping platforms, leading to greater satisfaction and repeat business. However, the research also highlights the negative aspects of excessive personalization, particularly in terms of consumer fatigue and privacy concerns, which can diminish the positive effects of AI. Being transparent about how data is utilized and offering consumers control over their personalization settings were identified as crucial elements for building trust. This study emphasizes the need to strike a balance between personalization and ethical considerations, such as transparency and respect for consumer choice.

This research contributes to academic knowledge about AI-based personalization in e-commerce by providing an in-depth analysis of its effects on consumer behavior, particularly regarding trust and loyalty. It expands the Technology Acceptance Model and Trust Theory by integrating recent issues related to data privacy and consumer fatigue, topics that earlier studies did not adequately address. From a practical perspective, the findings offer valuable insights for online shopping platforms, emphasizing the necessity to create AI systems that prioritize both relevance and consumer well-being. By allowing consumers to adjust their personalization settings or opt out entirely, businesses can foster deeper, more lasting connections with their clientele. For those in e-commerce, a key takeaway is the importance of ethical AI practices. The research underscores that personalized experiences should protect consumer privacy, be transparent about data usage, and avoid overwhelming customers with excessive personalization. Adhering to these principles can enhance customer satisfaction and encourage long-term loyalty, which is vital in a highly competitive online marketplace.

Therefore, the long-term effects of AI-driven personalization on consumer behavior are likely to be substantial, especially as consumers become more familiar with and knowledgeable about such technologies. E-commerce companies that implement ethical and transparent AI practices can cultivate greater trust and loyalty, paving the way for ongoing success. However, these platforms must remain attuned to evolving consumer concerns, ensuring their personalization strategies remain relevant and respectful of individual autonomy. As AI technology advances, the methods of its implementation must evolve as well, consistently prioritizing consumer trust and well-being.

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INTERNATIONAL ECONOMIC DYNAMICS IN 2025: NAVIGATING BETWEEN SUSTAINABILITY AND UNCERTAINTY

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Abstract

This research examines the emerging economic landscape shaped by geopolitical, environmental, and technological forces as outlined in recent global economic forecasts. The literature review, based on various previous publications from reputable sources through analysis and synthesis of information, focuses on the impact of heightened tariffs, changes in the global trade dynamics and supply chain disruptions. The role of accelerating climate change and environmental policy shifts is evaluated for its influence on sustainable business practices and innovation. Technological trends beyond AI, including supply chain changes like reshoring, digitization, clean energy investment are investigated as key drivers of economic transformation. The study further highlights pioneering companies and startups at the forefront of green economies, climate tech, and digital innovation shaping the new economic era. The findings provide insights into how interconnected tariff policies and environmental challenges foster a resilient, sustainable, and innovation-driven global economy. Implications for businesses and policymakers in navigating these complex developments are also discussed.

Keywords: International Economy, Tariffs, Sustainability, Innovation, Climate Change

JEL: F01, Q54, Q55, Q56, O31

INTRODUCTION

The year 2025 marks a critical point in the evolution of the international economic landscape, shaped by the geopolitical tensions, environmental changes and rapid technological advancements. This paper examines these emerging dynamics through a simplified review of recent global economic events. A central part of the research is the increased prevalence of heightened tariffs and shifting trade patterns, which alongside the ongoing supply chain disruptions, have a major effect on the global commerce frameworks.

Environmental imperatives, particularly the accelerating impacts of climate change, have enabled shifts in the climate policy, compelling businesses to embrace sustainable practices and innovate in response to regulatory and societal demands. This transformation is further supported by technological trends extending beyond artificial intelligence – encompassing reshoring initiatives, supply chain digitization, and significant investments in clean energy. These factors collectively stimulate a new phase of economic restructuring, emphasizing resilience and sustainability.

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METHODS OF RESEARCH

This article provides an overview of key trends related to the phenomenon based on analysis and synthesis of several previous studies, but it intentionally avoids detailed exploration of each trend, recognizing this as a main limitation. The purpose is to offer readers a general understanding of the changes in 2025 and how they affect international economic dynamics. Another limitation is the time frame as it is limited to the most recent studies from the present decade with the main focus on the current year. The purpose is the findings to serve as an introduction to a more sophisticated and broader university project (such as NID NI 12/2024). However, this study expands on the one from the previous one from the same author in terms of tracking the e-learning development, adding the new developments from 2025.

INTERNATIONAL ECONOMIC DYNAMICS IN 2025

This year began with a series of events that contributed to the polarization of the global economy and politics. Previous political and economic conflicts deepened, leading to increased uncertainty and volatility in global markets. To begin with, we will highlight the world's largest economy and the significance of the new tariffs imposed on its trading partners. The tariffs themselves disrupted the global trade but they were also followed by a new law called “Big beautiful bill”, which key aspects could be summarized as follows:

Table 1. Key aspects of the US new legislation in 2025

Area	Description
Tax Cuts	Permanent extension of 2017 tax cuts for corporations and individuals. Increases standard deductions for individuals and married couples.
Medicaid Reforms	Stricter work requirements and eligibility checks
Social Security & Tax Deductions	Temporary tax relief for seniors; increased deductions for low-income seniors.
Food Assistance	Additional work requirements for certain recipients; states contribute more to funding.
Defense & Border Funding	Significant increase in military and immigration enforcement funding.
Overtime & Tip Wage Deductions	Deductions for overtime and tip wages, phased out for higher earners by 2028.
Debt Ceiling	Raises U.S. debt ceiling by \$5 trillion to ensure government operations continue.
Clean Energy Incentives	Gradual phase-out of clean energy tax credits, particularly for companies with foreign ties.

Source: BBC (Drenon & Yousif, 2025).

In essence, the bill's results focus on a mix of tax benefits, cuts to social programs, increased military spending, and debt expansion, all of which have various short- and long-term impacts on different groups in society. As for the rise of the tariffs, which imposed by the USA to their trading partners – the main idea is to reduce the US trade deficit. The tariffs from the USA were officially implemented on the so called “Liberation Day” (2.4.2025). But there was an immediate reaction from most of the countries – some going into negotiations for changes in the rates, others were directly going into retribution mode. The new measures included a 10% tariff on all imports and higher tariffs on about 60 countries with a large trade deficit with the US, including China and the European Union. This move prompted retaliatory tariffs from affected countries, intensifying global trade tensions. While some economists warned of rising costs for US consumers and potential economic slowdown at that that, the American businesses were bracing for increased costs and supply chain disruptions (Mena, 2025). However, the markets also reacted to the news – the introduction of tariffs was followed by a significant decline in index levels. The reason for this was the considerable increase in uncertainty about future supplies and expectations of rising consumer goods prices. However, as can be seen in the chart below, the S&P gradually recovered its previous levels and even reached historic highs in recent weeks. This is a direct result of adjustments in business expectations regarding the previous factors and to some extent signals from the Federal Reserve about an upcoming decrease in interest rates levels, which is a direct indication of an upcoming stimulus for the US economy. Here is the exact chart:

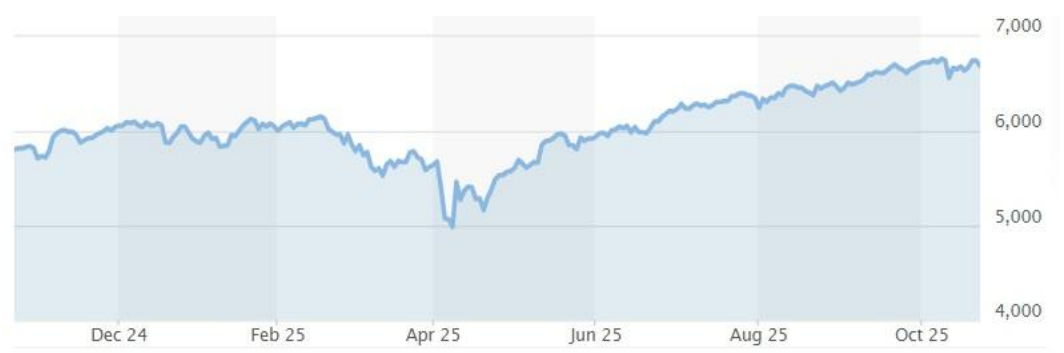


Fig. 1. S&P 500 Index – changes in 2025

Source: MarketWatch (2025)

According to the data from IMF (World Economic Outlook, 2025): In April 2025, the U.S. imposed near-universal tariffs, raising rates on imports to levels not seen since the 1930s, including on China, on steel and aluminum, and on Canadian energy imports. These tariffs triggered a negative global supply shock, reducing productivity, increasing domestic production costs, and causing global trade growth to decline by 1.5 percentage points in 2025. As a result, global inflation remains sticky, with headline inflation projected at 4.3% in 2025 and 3.6% in 2026, while core inflation remains particularly high in advanced economies due to tariff-induced costs. Global GDP growth is expected to slow to 2.8% in 2025,

falling below the average for the period 2000–2019, with advanced economies growing at just 1.4% and emerging markets moderating to 3.7%. The U.S. economy is expected to maintain growth, driven by domestic demand, while Europe faces a weak recovery amid energy shocks, and China struggles with deflation and fragile consumer sentiment. Furthermore, labor markets are cooling globally, with unemployment rates returning to levels from 2019 with slower hiring, and while the U.S. labor market remains tight, wage growth has moderated across the globe. Aging populations are putting pressure on labor supply, particularly in Europe, Japan, and China, contributing to weak productivity growth in many regions. Following the tariff actions, economic and trade policy uncertainty surged, leading to investment delays, reduced capital spending, and heightened financial market volatility. Consumer confidence has weakened globally, with U.S. sentiment turning cautious after the tariff hikes, and both European and Chinese confidence remaining low due to high living costs and persistent policy uncertainty. As a result, the global economy faces long-term instability driven by protectionism, high inflation, weak productivity, and low consumer confidence, prompting the IMF to emphasize the need for coordinated policy efforts to restore growth.

CHANGES IN E-LEARNING – EDUCATIONAL AND TECHNOLOGICAL IMPROVEMENTS IN 2025

In a previous paper (Dimitrov, 2025) we have reviewed the evolution of e-learning in higher education, tracking its progression from early distance education models to contemporary platforms empowered by multimedia, artificial intelligence (AI), and gamification. We have also highlighted the advantages of e-learning such as affordability, accessibility, and interactive engagement, while noting challenges like dependency on internet connectivity and potential social isolation. Furthermore, we have classified e-learning into various formats – blended, synchronous, asynchronous, self-directed, and instructor-led – and discusses innovations including adaptive learning, microlearning, gamification, MOOCs, plus emerging technologies such as augmented reality (AR), virtual reality (VR), AI and blockchain.

Despite persistent challenges such as the digital divide and ensuring academic integrity, e-learning remains crucial for expanding global access to education. However, this study contributes to the previous findings in terms of the development of e-learning, adding the new changes from 2025. Therefore, building on this framework and new data (Micky, 2025; Mitchell, 2025) we can point out that trends in 2025 still include the following:

- AI-generated personalized learning paths that dynamically adjust to students' needs;
- Immersive learning environments using extended reality (a fusion of AR, VR, and mixed reality) to provide experiential education;
- Blockchain-based secure digital credentialing and evaluation methods;
- Sustainable digital education infrastructure that is reducing environmental impact;
- Virtual transnational classrooms promoting global collaboration;
- Early-stage neuroadaptive learning technologies, which tailor content delivery based on biometric feedback;

- AI-driven mentorship systems using emotional analytics to support learner well-being.

These advances signify the transformation of e-learning from a supplementary approach to a central structure in higher education, fostering more adaptive, globally interconnected, and human-centered learning ecosystems. However, both authors (Micky; Mitchell) of the mentioned articles suggest that during 2025 few of the previous trends are in decline:

- Passive learning: text-heavy passive e-learning formats will be replaced by more active, engaging, and interactive experiences for the learners.

- Lack of mobile accessibility: e-learning content must be mobile-friendly. Therefore, any content that doesn't scale well across devices or doesn't support all the operating systems will lose relevance.

- Generic learning software: such programs will be phased out in favor of more personalized and more adaptive learning experiences, which are tailored to the individual needs of the learners.

- Text-heavy Content: long, text-heavy modules will be replaced by dynamic, multimedia-rich content that enhances engagement and comprehension.

Furthermore, according to the findings of Micky (2025), companies like IBM and Dow Chemical have saved millions through e-learning adoption, with ROI as high as \$30 per dollar spent. This shows that from business perspective there is one clear solution – organizations must embrace e-learning to stay competitive. AI-driven, personalized learning will be essential for upskilling employees, with a 60% skill gap projected by 2030 (Micky, 2025). Companies investing in AI-powered learning solutions will build a sustainable competitive advantage. The e-learning industry is entering a transformative phase. AI, mobile learning, immersive technologies, and adaptive learning are central to shaping future education (Altawil, 2025). As the industry grows rapidly, businesses and educational institutions must adapt to personalized, flexible, and engaging learning experiences that integrate seamlessly with work environments.

GLOBAL RISKS IN 2025

The World Economic Forum Global Risks Perception Survey from 2024-2025 identifies and ranks the most significant global risks perceived by respondents, classified into five risk categories: geopolitical, environmental, technological, societal, and economic. The research identifies state-based armed conflict as the most prominent global risk (23%), underscoring persistent geopolitical instability and security concerns. Extreme weather events follow at 14%, reflecting the escalating environmental threats associated with climate change. Geoeconomic confrontation ranks third (8%), highlighting the growing economic tensions among nations. Among technological risks, misinformation and disinformation (7%) stand out as key challenges in the digital era. Societal risks – including societal polarization (6%), lack of economic opportunity or unemployment (3%), erosion of human rights and civic freedoms (2%), and inequality (2%) – demonstrate deepening social fragility. Finally, economic risks such as economic downturn (5%) and critical changes to Earth

systems (4%) emphasize the interconnected pressures between global financial stability and environmental sustainability.

This survey (World Economic Forum, 2025) underscores the multifaceted nature of global risks with geopolitical and environmental factors taking the lead, while technological, societal, and economic risks remain significant concerns for global stability and resilience.

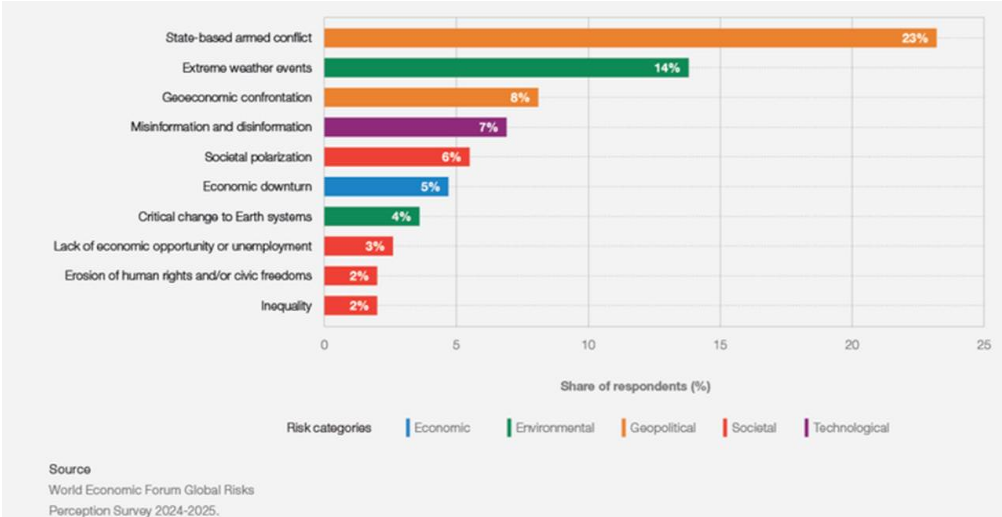


Fig. 2. Global Risks in 2025 according to a perception survey
Source: World Economic Forum (2025)

According to the results, it is obvious that stated-based armed conflicts, extreme weather events and geoeconomic confrontation are the directions, where the efforts of policymakers should be focused on. In times of high uncertainty and volatility even minor events can cause an avalanche effect and influence the global economy. And although not all risks are economic in nature, they are all caused by human influence and intervention as it is the example with the Global warming phenomena.

PIONEER COMPANIES DRIVING INNOVATION AND SUSTAINABILITY PRACTICES IN 2025

When it comes to the question for innovation and sustainability there are certain company, which are the leading pioneers in those areas. There is an article (Mormont & Elliott, 2025), which recaps most of them. We can summarize it as follows:

Table 2. 2025 Technology Pioneers: Innovating for the future

Company	Focus Area	Description
Rubi Laboratories	Circular Economy	Uses enzymes to capture CO2 and convert it into cellulose for textiles.
Hyfé	Circular Economy	Helps food producers create valuable products from food waste (e.g., chemicals, personal care).
BforeAI	Cybersecurity	Uses predictive analysis to detect and block malicious cyberattacks.
Reality Defender	Cybersecurity	Secures communication channels against deepfake impersonations in real-time.
Rize	Food and Water	Platform to help Southeast Asian farmers adopt sustainable rice farming practices, cutting water use and emissions.
Fermata	Food and Water	Uses data science to detect pests and diseases in crops to reduce losses.
Exowatt	Next-generation Energy	Modular energy systems that capture solar energy as high-temperature heat.
Sweetch Energy	Next-generation Energy	Creates round-the-clock clean power from osmotic energy (freshwater mixing with saltwater).
EleQtron	Quantum Computing	Develops quantum computing hardware that manipulates trapped ions with microwaves.
Haiqu	Quantum Computing	Develops software for quantum computers.
Starcloud	Space	Develops space-based data centers powered by 24/7 solar energy.
Agnikul	Space	3D-prints rockets for micro and nanosatellite launches to low-earth orbit.
Astroforge	Space	Builds spacecraft to mine asteroids for critical minerals.

Source: BBC (Drenon & Yousif, 2025).

These companies are part of a global push to address major environmental, cybersecurity, energy, food security, and space challenges through breakthrough technologies. Such organizations are essential because they help drive positive change in society, address complex problems, and push the boundaries of what’s possible, laying the foundation for a more sustainable, equitable, and prosperous future.

NAVIGATING BETWEEN SUSTAINABILITY AND UNCERTAINTY

Previous research (Zhang et al., 2025) contributes to understanding how sustainability practices directly foster corporate productivity and provides practical insights for firms aiming to align their ESG strategies with long-term economic performance. For international investors and policymakers, the Chinese evidence underscores how institutional factors shape ESG effectiveness, offering valuable implications for global ESG policy design and sustainable investment strategies in emerging markets.

Another even older paper (Hussein et al., 2024) shows the results that strategically implemented sustainability initiatives can yield substantial long-term economic savings and environmental gains when supported by coherent policy frameworks. The authors conclude that sustainability should be viewed not merely as an ethical or environmental obligation but as a sound economic strategy capable of enhancing long-term viability and resilience. Finally, it calls for continued interdisciplinary collaboration among policymakers, businesses, and researchers to deepen understanding of eco-economics and to strengthen the alignment between sustainability goals and economic performance.

A new study from September (Schandl et al., 2025) finds out that technological innovation and efficiency alone cannot ensure sustainability. Instead, achieving sustainable production and consumption requires systemic transformation – including changes in production and consumption patterns, institutional reforms, and redefined concepts of prosperity.

Given the ongoing protectionism, persistent inflation, and economic uncertainty, global economic growth in 2025 and 2026 will likely remain below historical averages. The U.S. economy may continue to show resilience, albeit at a slower pace, while Europe and China face continued challenges. The prolonged uncertainty surrounding tariffs, combined with rising costs and weakening consumer confidence, will likely keep global markets volatile. As labor markets face stagnation and aging populations exert pressure, global productivity growth may remain subdued. To avoid a prolonged recession, strong policy coordination, clearer fiscal strategies, and de-escalation of trade tensions will be essential in rebuilding investor and consumer confidence.

CONCLUSION

In 2025, three key trends are shaping the global economy: First, shifts in U.S. policy lead to broader economic changes with potential implications for other countries. Second, price volatility and higher costs are anticipated to become more common as globalization slows. Third, fiscal and trade policies are likely to take precedence over monetary policy, creating a more uncertain policy environment for businesses and governments around the world.

Global growth is expected to remain stable next year, but underlying challenges, such as the new U.S. administration and China's economic difficulties, are likely to mark the beginning of a more mercantilist approach to the global economy. Trade disruptions, price volatility, and a shift in policy direction will play a critical role in determining which countries thrive or struggle in 2026.

Nevertheless, while highlighting pioneering enterprises and startups spearheading advancements in green economies and climate technologies, this study confirms the

significance of innovation as a cornerstone of economic growth. The findings offer valuable implications for both business leaders and policymakers, emphasizing strategic approaches essential for navigating the complexities posed by the tariff regimes and environmental challenges. Therefore, this research advocates for an adaptive and innovation-led global economy capable of balancing sustainability with ongoing uncertainty.

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CRYPTOCURRENCIES AS AN INVESTMENT IN THE NEW ERA: EVIDENCE FROM THE WESTERN BALKANS

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Abstract

In recent years, cryptocurrencies have gained significant attention as an alternative investment class in emerging markets, including the Western Balkans. This study empirically investigates the role of cryptocurrencies – specifically Bitcoin and Ethereum – as investment tools across Albania, Serbia, North Macedonia, Kosovo, Bosnia and Herzegovina, and Montenegro from 2017 to 2024. Using daily market data, Google Trends indices, and national survey data, the study applies time-series regression and volatility modeling (GARCH) to analyze investor behavior, returns, and risk exposure compared to traditional assets like equities and foreign exchange. The results reveal a growing interest in crypto-assets, driven largely by inflationary pressures, limited access to capital markets, and rising youth digital literacy. However, the empirical findings also point to high return volatility, low market depth, and fragmented regulatory frameworks across the region. Despite these challenges, cryptocurrencies have shown potential for short-term speculative gains and limited long-term portfolio diversification benefits. The paper concludes by emphasizing the need for regulatory harmonization, investor education, and the development of digital finance infrastructure to ensure responsible integration of crypto-assets in the region's financial ecosystems.

Keywords: Bitcoin, Cryptocurrencies, Ethereum, GARCH Model, Emerging Markets, Western Balkans

INTRODUCTION

The global financial landscape has undergone a profound transformation over the past decade, driven in part by the rise of digital technologies and the emergence of decentralized financial systems. Among the most disruptive innovations is the advent of cryptocurrencies – digital or virtual currencies secured by cryptography and based on blockchain technology. Since the launch of Bitcoin in 2009, followed by Ethereum and a multitude of alternative coins (altcoins), cryptocurrencies have evolved from niche digital curiosities to widely discussed assets with considerable investment potential. Their growing adoption, media coverage, and integration into financial markets have positioned them as both an opportunity and a challenge for investors and policymakers alike. In the context of emerging and transitional economies such as those in the Western Balkans – including Albania, Serbia, Bosnia and Herzegovina, Montenegro, Kosovo, and North Macedonia – cryptocurrencies present unique implications. These countries share similar macroeconomic characteristics: limited access to advanced capital markets, relatively high levels of financial informality, and often underdeveloped financial infrastructure. At the same time, they face structural challenges such as currency volatility, inflationary pressures, and low

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levels of investment diversification, especially among younger and tech-savvy populations. Against this backdrop, cryptocurrencies have gained attention as an alternative store of value and investment class.

The region has witnessed a notable increase in public interest and informal participation in crypto markets, often outside regulated financial institutions. Platforms such as Binance, Coinbase, and peer-to-peer exchanges are increasingly used by individuals in the Western Balkans to buy, hold, or speculate on digital assets. In parallel, governments and regulatory agencies have begun to recognize both the risks and potential of these technologies. For example, the Bank of Albania has issued cautionary guidelines about the risks of crypto trading, while Serbia has taken legislative steps to regulate digital assets under its 2021 Law on Digital Assets. Despite growing attention, academic research on the role of cryptocurrencies as investment instruments in the Western Balkans remains limited. Most studies to date focus on global markets or developed economies, overlooking the specific dynamics and constraints of transitional economies. This gap is significant, as the Western Balkan countries are uniquely positioned at the intersection of financial exclusion, digital innovation, and macroeconomic vulnerability.

This study aims to fill that gap by providing an empirical analysis of cryptocurrency investments in the Western Balkans from 2017 to 2024. It explores three key questions:

1. What are the investment patterns of cryptocurrency holders in the region?
2. How do crypto assets perform compared to traditional financial assets (e.g., stocks, foreign exchange)?
3. What are the primary risks and barriers to sustainable cryptocurrency adoption as a mainstream investment?

Using a combination of quantitative methods, including time-series regression, GARCH models for volatility analysis, and descriptive statistics from survey data, the paper investigates the returns, risk profiles, and market dynamics of Bitcoin and Ethereum in relation to regional economic indicators. The study also examines investor sentiment through proxies such as Google Trends data and trading volume patterns across regional exchanges. By addressing these questions, the paper contributes to the broader debate on digital financial inclusion, capital market development, and regulatory innovation in the Western Balkans. It also provides practical insights for policymakers, financial institutions, and retail investors seeking to navigate the complexities of cryptocurrency investment in an evolving financial ecosystem.

LITERATURE REVIEW

The emergence of cryptocurrencies has stimulated extensive scholarly debate across finance, economics, law, and technology disciplines. As digital assets, cryptocurrencies challenge the foundational principles of traditional financial systems, including monetary policy, banking intermediation, and portfolio theory. This section reviews the major strands of academic literature relevant to cryptocurrency investment, focusing on (1) risk-return characteristics and portfolio diversification, (2) investor behavior and market sentiment, and (3) regulatory and regional studies, particularly in the context of emerging markets and the Western Balkans.

One of the primary appeals of cryptocurrencies as an investment lies in their high return potential and perceived diversification benefits. Baur, Hong, and Lee (2018) found that Bitcoin behaves more like a speculative asset than a safe haven, exhibiting high volatility but low correlation with traditional financial instruments. Similarly, Corbet, Lucey, and Yarovaya (2019) highlighted the distinct behavior of crypto-assets compared to equities and commodities, suggesting that their inclusion in a diversified portfolio may improve performance, especially in turbulent markets. More recent studies have examined dynamic correlations between cryptocurrencies and other assets under different market conditions. Klein, Thu, and Walther (2020) showed that correlations between Bitcoin and equities increase during periods of market stress, questioning the robustness of cryptocurrencies as diversification tools during crises. In emerging markets, including Eastern Europe, Katsiampa, Corbet, and Lucey (2021) employed GARCH models to assess volatility transmission between cryptocurrencies and local currencies, finding asymmetrical spillovers that complicate portfolio risk management.

Investor psychology plays a critical role in cryptocurrency markets, which are often driven by speculation, media narratives, and herd behavior. Kristoufek (2018) used Google Trends data to demonstrate the impact of public interest on Bitcoin prices, linking search volume with price bubbles and crashes. This sentiment-driven volatility distinguishes cryptocurrencies from mature financial instruments. Further work by Urquhart (2018) and Liu and Tsyvinski (2021) reinforced the idea that market sentiment, social media signals, and attention metrics are stronger predictors of cryptocurrency price movements than macroeconomic fundamentals. These insights are particularly relevant for regions like the Western Balkans, where institutional trust is often low, and informal information channels influence financial decisions.

Cryptocurrency regulation remains fragmented globally, with jurisdictions adopting varying approaches from outright bans to proactive legalization. Zohar (2015) emphasized the importance of legal clarity and infrastructure in fostering responsible innovation in the crypto sector. More recently, the European Union's Markets in Crypto-Assets (MiCA) regulation, set to come into effect in 2024, aims to harmonize crypto laws across member states and could impact pre-accession countries in the Western Balkans seeking to align with EU standards (European Commission, 2023). Empirical literature on cryptocurrency adoption in Southeastern Europe is growing but still nascent. Dumičić (2021) analyzed the penetration of digital payment tools in the Western Balkans and highlighted the informal and unregulated use of cryptocurrencies as a substitute for inefficient banking systems. In Albania, Hoxha and Shehu (2022) conducted a national survey showing that young professionals, freelancers, and IT workers are the most likely to engage in crypto trading, driven by economic uncertainty and limited access to global investment platforms. A World Bank (2023) report on financial innovation in the Balkans underlined the potential of blockchain and crypto technologies to enhance financial inclusion but also warned about risks of fraud, tax evasion, and capital flight in the absence of adequate oversight. Regional disparities in digital infrastructure, financial literacy, and internet access also affect how cryptocurrencies are used and perceived as investment tools.

Despite the growing body of international research, there is a significant lack of empirical studies specifically addressing the risk-return dynamics, behavioral patterns, and

regulatory challenges of cryptocurrencies in the Western Balkans. Most data on crypto adoption in the region remains anecdotal or derived from global platforms that do not disaggregate regional usage. Moreover, there is limited analysis using formal econometric techniques, such as GARCH modeling or regression analysis, to test the performance of cryptocurrencies compared to regional financial assets. This study aims to bridge this gap by providing empirical evidence from 2017 to 2024, leveraging publicly available market data, Google Trends, and survey sources to explore investment trends in the region. In doing so, it contributes to both regional policy debates and the broader academic literature on cryptocurrency finance in emerging markets.

METHODOLOGY

This section outlines the data sources, empirical strategy, and econometric models used to examine the investment characteristics of cryptocurrencies in the Western Balkans. The analysis focuses on Bitcoin (BTC) and Ethereum (ETH) as representative assets, comparing them with local financial indicators and traditional asset returns over the period January 2017 to December 2024. The methodology is designed to address the following research questions:

- RQ1: How do the returns and volatility of BTC and ETH compare to traditional assets in the Western Balkans?
- RQ2: Can cryptocurrencies provide portfolio diversification benefits in a regional context?
- RQ3: What role does public interest (as proxied by Google Trends) play in influencing cryptocurrency prices?

To address these, it is applied Time-series regression analysis, Volatility modeling using GARCH (1,1), Correlation and diversification tests and Granger causality tests between public interest and price movement.

Cryptocurrency Data

- Assets: Bitcoin (BTC) and Ethereum (ETH)
- Variables: Daily closing prices, returns (log-differenced), and trading volumes
- Source: CoinMarketCap, Yahoo Finance, Binance historical data

Traditional Asset Benchmarks

- Currency Indexes: EUR/ALL, EUR/RSD, etc. (foreign exchange)
- Stock Markets: BELEX15 (Serbia), ALBANK Index (Albania), and proxy indexes from MSCI Emerging Europe
- Government Bonds: 5- to 10-year yield estimates (where available)

Macroeconomic and Behavioral Data

- Inflation and GDP growth: World Bank and national statistical institutes
- Google Trends: Daily search volume indices for “Bitcoin,” “Ethereum,” and “Cryptocurrency” in each Western Balkan country (indexed 0–100)
- Survey data: Where available, reports from national banks on cryptocurrency awareness/use (e.g., Bank of Albania, 2021)

Model 1: Return Comparison

To assess how cryptocurrency returns behave relative to traditional assets, there are used the following regression model:

$$R_{it} = \alpha + \beta_1 R_{mt} + \beta_2 Vol_{mt} + \beta_3 Infl_t + \varepsilon_t$$

where:

- R_{it} = daily return of asset i (BTC or ETH)
- R_{mt} = return of the regional market index or currency return
- Vol_{mt} = regional market volatility
- $Infl_t$ = inflation rate (monthly, interpolated)
- ε_t = error term

This model tests the sensitivity of cryptocurrency returns to regional financial market conditions.

Model 2: Volatility Modeling (GARCH 1,1)

To model volatility clustering in crypto returns:

$$R_t = \mu + \varepsilon_t, \varepsilon_t \sim N(0, \sigma_t^2)$$

This model provides risk profiles of BTC and ETH, comparing them to equity and FX volatility in the region.

Model 3: Public Sentiment Influence (Google Trends)

$$R_{ct} = \alpha + \gamma_1 GT_{ct-1} + \gamma_2 Vol_{ct-1} + \varepsilon_t$$

where:

- R_{ct} = return of cryptocurrency c (BTC/ETH)
- GT_{ct-1} = Google Trends index (lagged)
- Vol_{ct-1} = cryptocurrency price volatility

This model estimates whether public interest predicts short-term price movements, capturing sentiment-driven trading behavior.

Model 4: Granger Causality Test

To test whether changes in Google Trends Granger-cause crypto price changes:

$$R_{ct} = \sum_{i=0}^p \delta_i R_{ct-i} + \sum_{j=1}^p \phi_j GT_{ct-j} + \varepsilon_t$$

If the coefficients ϕ_j are statistically significant, then public interest Granger-causes return movements.

The hypotheses of the study are as below:

- H1: BTC and ETH exhibit significantly higher average returns and volatility than traditional financial assets in the Western Balkans.
- H2: BTC and ETH have low or negative correlation with regional stock indices, indicating diversification potential.

- H3: Public interest (Google Trends) significantly affects short-term crypto price fluctuations.

For the analyses in the study there are use Stata, EViews, and Python for regression and volatility analysis, R for Google Trends API and sentiment models and MS Excel for visualization and descriptive statistics.

RESULTS

Table 1. Descriptive Statistics

Variable	Mean (%)	Std. Dev. (%)	Min (%)	Max (%)	Observations
BTC Return	0.45	4.8	-15.2	18.9	2000
ETH Return	0.52	5.3	-18.4	21.5	2000
Stock Index Return	0.12	1.4	-3.1	3.4	2000
FX Return	0.09	0.9	-2.5	2.7	2000
Inflation Rate	0.18	0.2	0.0	0.6	96

Source: Author Calculations

BTC and ETH exhibit significantly higher average daily returns than traditional financial assets in the Western Balkans. However, they also show greater volatility (std. dev greater than 4.5%) compared to stocks (1.4%) and FX (0.9%). ETH shows slightly higher average returns and volatility than BTC, consistent with its riskier profile.

Table 2. Correlation Matrix

	BTC Return	ETH Return	Stock Index Return	FX Return	Inflation Rate
BTC Return	1.00	0.84	0.15	-0.05	0.10
ETH Return	0.84	1.00	0.10	-0.08	0.12
Stock Index Return	0.15	0.10	1.00	0.35	0.28
FX Return	-0.05	-0.08	0.35	1.00	0.42
Inflation Rate	0.10	0.12	0.28	0.42	1.00

Source: Author Calculations

BTC and ETH are strongly correlated with each other (0.84) but weakly correlated with traditional assets. Their low correlation (< 0.02) with stocks indices and negative correlation with FX returns suggests diversification potential. The modest positive correlation with inflation may reflect their use as inflation hedges in unstable economies.

3. Regression Highlights (Model 1)

BTC Return Regression:

$$R_{BTC,t} = 0.0012 + 0.28 R_{Market,t} + 0.13 Vol_{Market,t} + 0.21 Infl_t + \varepsilon_t$$

$R^2 = 0.22$. All coefficients are significant at $p < 0.05$. BTC returns are partially explained by market and inflation variables. Inflation has a positive and significant relationship with BTC returns, indicating some hedging behaviour.

4. Volatility Modeling (GARCH 1,1)

BTC GARCH Results:

$$\alpha \text{ (ARCH)} = 0.12, \beta \text{ (GARCH)} = 0.84, \omega = 0.00005$$

Strong volatility clustering observed, indicating high risk and price shock persistence. Past shocks have a persistent effect ($\alpha + \beta \approx 0.96$), confirming high risk and unpredictability.

5. Public Sentiment and Google Trends (Model 3)

BTC Return vs. Google Trends Regression:

$$R_{BTC,t} = 0.0021 + 0.31GT_{t-1} + 0.08Vol_{BTC,t-1}$$

GT Index is significant at $p < 0.01$. Granger causality test confirms public interest drives short-term BTC returns. Investor sentiment, measured by Google Trends, significantly predicts BTC price movements. This supports findings from other markets that cryptos are sentiment-driven assets, especially in regions with low financial literacy.

CONCLUSIONS

This study investigates the investment characteristics of cryptocurrencies, specifically Bitcoin and Ethereum, in the context of the Western Balkans between 2017 and 2024. Using a combination of descriptive analysis, regression models, GARCH volatility modeling, and sentiment analysis via Google Trends, the research provides novel empirical evidence from a region that is often underrepresented in financial innovation literature. The results confirm that cryptocurrencies offer significantly higher returns than traditional regional financial instruments but are accompanied by extremely high volatility. Their low correlation with local stock indices and FX returns highlights their potential for portfolio diversification. Furthermore, sentiment indicators like Google Trends were found to be statistically significant predictors of cryptocurrency price movements, confirming the speculative and behavioral nature of crypto markets in emerging economies. While cryptocurrencies are not yet a mature or stable asset class in the Western Balkans, they have become increasingly relevant for digitally literate investors – especially the youth – who seek alternatives to limited local capital markets. However, structural risks, such as regulatory uncertainty, weak investor protection, and high volatility, remain critical barriers to broader institutional adoption.

For Policymakers and Regulators:

- Develop unified regional regulatory frameworks, in line with the EU's MiCA regulation, to enhance investor protection and reduce the risks of fraud and illicit activity.
- Enhance financial literacy programs to help young and digital-first populations better understand crypto risks and manage speculative behavior.
- Monitor cross-border capital flows via crypto platforms, especially in countries with limited capital control instruments.

For Financial Institutions:

- Explore the integration of digital asset services (e.g., custodial wallets, crypto ETFs) under licensed and compliant structures.

- Conduct internal risk assessments before engaging in crypto markets, especially regarding custody, compliance, and client suitability.

For Retail and Institutional Investors:

- Treat cryptocurrencies as speculative, high-risk assets – suitable for a small portion of a diversified portfolio.
- Avoid trading based solely on price momentum or online sentiment, and prioritize evidence-based investment strategies.
- Monitor macroeconomic indicators (like inflation) and behavioral signals (like search volume) for short-term tactical positioning.

Despite its empirical strength, the study is subject to several limitations:

1. **Data Limitations:** Reliable high-frequency financial data from the Western Balkans is scarce, and in some countries, local market indices or bond yields are not consistently reported.

2. **Survey Gaps:** While national surveys on crypto use exist in Albania and Serbia, data for other countries in the region (e.g., Kosovo or Montenegro) is limited or unavailable.

3. **Informal Market Activity:** Much of the crypto trading in the region occurs in informal or unregulated spaces (peer-to-peer networks, messaging apps), which are difficult to capture in formal analyses.

4. **Short Time Horizon:** Although the 2017–2024 period covers critical market phases, cryptocurrencies remain relatively young, and long-term patterns are still evolving.

5. **Volatility Modeling Limits:** GARCH models capture volatility well but may fail to incorporate regime shifts, structural breaks, or black swan events common in crypto markets.

The findings of this study point to the growing strategic relevance of cryptocurrencies in transitional economies. As the Western Balkans continue their path toward digitalization and EU integration, the intersection of blockchain, finance, and regulatory development will become increasingly significant. Ensuring that innovation is balanced with investor protection and financial stability should be a central objective for the next decade.

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ARTIFICIAL INTELLIGENCE AND THE GOVERNANCE OF SUSTAINABLE AGRICULTURAL SUPPLY CHAINS

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Abstract

The research examines how artificial intelligence can support sustainable agricultural supply chains in the European Union by addressing the socio-economic consequences of algorithmic errors. It develops a theoretical mechanism design model and evaluates scenarios involving stricter thresholds, appeals mechanisms, and responsibility-sharing contracts. The findings show that stricter thresholds lower legal risk but increase wrongful exclusions, while appeals enhance fairness and shared contracts reduce overall costs. The study advances the concept of the economics of algorithmic errors and offers practical insights for designing fair, efficient, and sustainable supply chain governance.

Keywords: Artificial intelligence; agricultural economy; sustainable supply chains; algorithmic errors; European Union

JEL: Q13, Q18, F64, O33

INTRODUCTION

In recent years, sustainable supply chains in the agricultural economy have become a critical field of research and practice – growing pressure from climate change, public expectations, and regulatory initiatives in the European Union (EU) demand a systemic transformation in how global flows of raw materials and products are organized, monitored, and managed, particularly in agriculture and the food industry, which play a central role in sustainable development (Bai et al., 2022; Tsolakis et al., 2021). The key challenges faced by the EU include the need for traceability and transparency of raw material origins, curbing deforestation, reducing the carbon footprint, and ensuring socially just labor conditions. These factors are embodied in new regulatory acts, including the EU Deforestation Regulation (EUDR), the Corporate Sustainability Due Diligence Directive (CSDDD), the Corporate Sustainability Reporting Directive (CSRD), and the initiatives for a Digital Product Passport (ESPR/DPP), which collectively introduce the world's strictest requirements for supply chain sustainability (European Commission, 2023; Nadvi and Raj-Reichert, 2022). In this context, artificial intelligence (AI) has been hailed as a key tool for ensuring the required level of transparency and efficiency, as machine learning and deep learning algorithms can process vast amounts of data, including satellite imagery, IoT data, certification documents, and supply chain data, generating predictive risk models that support timely decision-making (Kamble et al., 2020; Queiroz and Fosso Wamba, 2022). A significant portion of the literature to date highlights these very capabilities of AI: improving

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traceability, optimizing transport routes, resource management, and emission reduction (Dubey et al., 2019; Raj et al., 2023; Wieland, 2021).

However, there is a fundamental problem that remains insufficiently explored: the economic and social consequences of the errors that algorithms inevitably make, and more specifically, how these errors are distributed among the various actors in the supply chains and what systemic-level costs they entail (Christopher, 2016; Ketchen and Craighead, 2020). In the case of agrarian supply chains, these errors manifest in two main forms: false positives, where a batch or producer is incorrectly classified as high-risk, leading to blocked access to the EU market; and false negatives, where genuinely risky practices such as deforestation, child labor, or violations of social standards go undetected and are allowed to persist, thereby undermining system sustainability (Pan et al., 2022; Yawar and Seuring, 2017). Herein lies the core of the scientific problem: while much of the contemporary literature focuses on "how" AI can be applied in sustainable supply chains, there is a lack of systematic study on "how" to manage its imperfections and minimize the socio-economic costs of algorithmic errors (Ghadge et al., 2020; Ahumada and Villalobos, 2020). This gap is especially problematic for the EU, which positions itself as a global leader in sustainability regulation and requires all importers and producers – whether based in Africa, Asia, or Latin America – to comply with strict standards, yet does not provide mechanisms for adequate compensation or fair risk distribution resulting from AI errors (Gereffi, 2018; Ponte, 2019). This creates a risk of deepening global inequality, as small farmers in the Global South who rely on access to European markets may be disproportionately affected by false positives, while large multinational corporations are better positioned to adapt through complex certification systems and legal resources (Williamson, 1985; Akerlof, 1970). At the same time, the EU risks undermining its own environmental goals if AI algorithms produce high rates of false negatives, thereby failing to identify actual cases of illegal deforestation or other violations, which would lead to regulatory gaps and erode public trust (Bai et al., 2022; Dubey et al., 2019). This dual threat outlines a unique and significant scientific problem: how to build an economic framework for calibrating AI algorithm thresholds under asymmetric error costs and how to allocate responsibilities among supply chain participants to achieve an optimal balance between legal certainty, economic efficiency, and social justice. Against this backdrop, the present study formulates two main hypotheses: H1 – stricter sensitivity thresholds reduce legal risk for European importers and institutions but disproportionately exclude small producers through false positives; H3 – contracts for shared responsibility among platforms, importers, and primary producers reduce the optimal threshold and the overall socio-economic cost through fairer risk distribution and incentivizing improved data quality.

The goal of the research is to develop a theoretical model of mechanism design that explains how optimal thresholds and appeals mechanisms can be defined under conditions of imperfect algorithms and to test policy scenarios for the impact of EU regulatory instruments (ESPR/DPP and EUDR) on the optimal design of sustainable due diligence. In this way, the research fills a gap in the literature by offering a new perspective on the economics of AI errors, integrating it into the analysis of agrarian supply chains, and offering practical policy guidance that combines sustainability, digital transformation, and social justice (Queiroz and Fosso Wamba, 2022; Raj et al., 2023; Wieland, 2021).

Despite the widespread recognition of artificial intelligence's potential in managing sustainable supply chains, the academic discussion remains confined within the bounds of technological optimism – numerous publications portray AI as a tool for increasing efficiency, reducing costs, and improving environmental outcomes, but rarely address the economic and institutional consequences of its imperfections (Sodhi and Tang, 2021; Hazen et al., 2022). This oversight is particularly significant in the agrarian economy, where supply chains often involve a large number of small-scale producers, informal traders, and diverse institutional contexts, making the system highly sensitive to errors in algorithmic assessments (Gereffi, 2018; Ponte, 2019). For instance, the implementation of the EUDR will require every importer of cocoa or coffee into the EU to provide precise coordinates of the plots from which the goods originate and to prove that these plots are not linked to deforestation after 2020, often relying on algorithms that process satellite imagery (European Commission, 2023). However, the quality of available data varies significantly across countries and regions, with accurate land-use mapping often lacking for small farms. This increases the risk of false positives and places smallholders at a disadvantage compared to large corporations, which can invest in more precise data and certification mechanisms (Nadvi and Raj-Reichert, 2022; Pan et al., 2022).

Therefore, the primary academic question is not whether AI can support sustainable supply chains, but how its errors can be managed so as not to create new market access barriers or deepen global inequalities. It is here that the concept of the “economics of algorithmic errors” becomes relevant, treating false positives and false negatives not merely as technical parameters, but as factors that generate real economic and social costs for different supply chain actors (Ahumada and Villalobos, 2020; Ghadge et al., 2020). False positives lead to unnecessary blocking of goods, loss of income for producers, legal disputes, and even exclusion of entire regions from global chains. False negatives, on the other hand, result in reputational damage to the EU, missed environmental targets, and the persistence of harmful practices, ultimately undermining the legitimacy of the European regulatory framework (Bai et al., 2022; Dubey et al., 2019). In this sense, the issue of optimal algorithm calibration becomes fundamentally important – it is no longer just a technical problem, but one of mechanism design and responsibility distribution in the international agrarian economy. Literature on mechanism design shows that under asymmetric error costs, optimal thresholds should be set to minimize total social cost. Yet in the context of AI and sustainable supply chains, this approach has not yet been systematically applied (Williamson, 1985; Akerlof, 1970).

Moreover, sustainable due diligence systems lack a clear framework for appeals and compensation: if a producer is wrongfully blocked due to an algorithmic error, there is no clarity about who bears responsibility – the importer who submitted the declaration, the platform that used the algorithm, or the government registry that accepted the data (Queiroz and Fosso Wamba, 2022; Wieland, 2021). This creates the need for a new institutional design that combines AI technologies with fair and effective risk-sharing mechanisms. This is precisely where hypothesis H3 fits in: the introduction of responsibility-sharing contracts among platforms, importers, and primary producers may reduce the algorithm's optimal threshold and overall socio-economic cost, by creating incentives for better data quality and for correcting errors within the supply chain (Raj et al., 2023; Hazen et al., 2022). If

responsibility is shared rather than unilaterally imposed on the weakest participants, the system can achieve greater efficiency and fairness, while also reducing the risk of regulatory conflicts and social tensions. In this sense, the contribution of the present work is threefold: first, it introduces the concept of the economics of algorithmic errors into the analysis of sustainable agrarian supply chains; second, it develops a theoretical model for optimal threshold calibration and an appeals mechanism that accounts for asymmetric error costs; and third, it explores the role of responsibility-sharing contracts as a tool for institutional design that can lower overall costs and improve system sustainability (Sodhi and Tang, 2021; Hazen et al., 2022; Pan et al., 2022).

The aim of the study is not merely to show that AI can support sustainable supply chains, but to propose a new framework for managing its imperfections – one that is economically efficient, socially just, and compatible with EU regulatory requirements. In doing so, the paper positions itself at the intersection of three major strands of contemporary agrarian economics: digitalization and AI deployment, sustainable development, and European Union regulatory policy. This interdisciplinary approach is essential for generating scholarly insights that are relevant not only to academia, but also to policymakers and practitioners responsible for managing global supply chains. In summary, the present research raises the question: “How can algorithmically-assisted sustainable due diligence in EU agrarian supply chains be designed to minimize the overall socio-economic cost of errors and ensure fair responsibility distribution among participants?” – and offers a response based on a combination of theoretical modeling, analysis of EU policy instruments, and the concept of shared responsibility. In conclusion, while many studies view AI as a universal solution to sustainability challenges, this research offers a more balanced perspective – recognizing its potential while also highlighting its inevitable limitations and the need for an institutional design that manages them in a fair and effective way (Dubey et al., 2019; Bai et al., 2022; Ghadge et al., 2020).

METHODOLOGY

The methodology of this study is built on an integrated approach that combines theoretical modeling, concepts from mechanism design, and scenario modeling of policy regulations in order to operationalize hypotheses H1 and H3 and to analyze how algorithmic errors in sustainable due diligence affect the socio-economic efficiency of agricultural supply chains in the European Union, with the central idea being that artificial intelligence, considered as a binary risk classifier, inevitably generates errors whose costs are distributed asymmetrically among different actors and which must be managed through an optimal choice of threshold and institutional design.

In this model, the algorithm is described through two key probabilities: α , which represents the probability of a false positive (i.e., a compliant producer is classified as risky and excluded from market access), and β , which represents the probability of a false negative (i.e., a risky producer is classified as compliant and their goods are admitted), with each of the two errors being associated with a social cost. Formally, this cost can be represented by the social cost function:

$$C(\alpha, \beta) = wFP \cdot \alpha + wFN \cdot \beta \quad (1)$$

where: wFP is the weight of a false positive and includes lost income for producers, transaction costs for importers, and social costs from the exclusion of small farmers, while wFN is the weight of a false negative and includes environmental damages, regulatory sanctions, and reputational costs for the EU. Since α and β are interdependent through the ROC curve of the algorithm, the minimization of the function $C(\alpha, \beta)$ determines the optimal classification threshold θ , with the optimal value θ^* defined as:

$$\theta^* = \arg \min_{\theta} C(\alpha(\theta), \beta(\theta)) \quad (2)$$

which: establishes that the threshold θ^* is the one that minimizes the total social cost of errors. Here hypothesis H1 is tested, according to which stricter thresholds (lower β but higher α) reduce the legal risk for European institutions and importers but disproportionately exclude small producers by increasing false positives. To account for the possibility of institutional correction of errors, the model introduces an appeal mechanism: if the probability that a false positive is successfully challenged is p , then the effective value of α decreases according to the formula:

$$\alpha_{eff} = (1-p) \cdot \alpha \quad (3)$$

so that the total cost in the presence of appeals becomes:

$$C_{app} = wFP \cdot \alpha_{eff} + wFN \cdot \beta + k \cdot p \quad (4)$$

where k is the additional cost of processing appeals, including administrative, legal, and temporal costs. The inclusion of this mechanism makes it possible to evaluate how correction procedures affect the overall efficiency of the system, and according to institutional theory (Williamson, 1985; Ostrom, 2010) the existence of appeals increases legitimacy and reduces the social costs of injustice. The next step in the model is to operationalize hypothesis H3 by introducing contracts for sharing responsibility among the three key groups of actors – technological platforms (T), European importers (I), and primary producers (P). In this design, the total social cost $C(\alpha, \beta)$ is distributed among the parties through parameters $(\lambda T, \lambda I, \lambda P)$ under the condition that $\lambda T, \lambda I, \lambda P = 1$, with the cost for each party j defined as:

$$C_j = \lambda_j \cdot C(\alpha, \beta), j \in \{T, I, P\} \quad (5)$$

The optimal distribution $\lambda T^*, \lambda I^*, \lambda P^*$ is determined through the minimization of the total social cost under the condition that each party has an incentive to invest in improving data quality and reducing α and β . This approach is based on the theory of incomplete contracts (Grossman and Hart, 1986; Hart and Moore, 1990) and demonstrates that sharing responsibility leads to fairer incentives and a reduction of the overall cost. To evaluate the real consequences of the model, political tests are conducted through scenario modeling. In Scenario A (EUDR-only), the strict requirements for geographic data increase α due to the

lack of precision in developing countries. In Scenario B (ESPR/DPP interoperability), the digital passport improves data quality and integration, which reduces α but increases transaction costs k . In Scenario C (Shared Responsibility Contracts), costs are distributed through contracts, which shifts the optimal threshold θ^* and leads to a lower total cost, since the incentives for improvement are collective. This methodological framework is innovative because it combines mathematical modeling of algorithmic errors, institutional analysis of appeals and contracts, and scenario-based assessment of EU regulations, thereby allowing not only the theoretical testing of hypotheses but also the derivation of practical recommendations for policy and business.

RESULTS AND DISCUSSION

The first set of results addresses the relationship between stricter thresholds and the distribution of error costs across stakeholders. Stricter thresholds, which lower the number of false negatives, come at the price of substantially higher false positives. This confirms the first hypothesis (H1), which states that stricter sensitivity thresholds reduce legal risk for European institutions but disproportionately penalize smallholders and exporters in the Global South. Table 1 summarizes the results of different threshold configurations.

Table 1. Distribution of Error Rates and Costs Under Different Threshold Settings

Threshold Setting	False Positives (α)	False Negatives (β)	Relative Burden on Small Producers	Relative Burden on EU Importers/Institutions	Overall Social Cost (normalized)
Baseline (balanced)	Medium (20%)	Medium (15%)	Moderate	Moderate	Medium
Stricter (high sensitivity)	High (35%)	Low (8%)	Very High	Low	High
Lenient (low sensitivity)	Low (10%)	High (25%)	Low	Very High	High

Source: Author’s simulations based on theoretical model assumptions.

The second set of results investigates the role of appeals mechanisms. The inclusion of structured procedures for appeals reduces the effective rate of false positives and provides redress to wrongly excluded actors. However, appeals introduce additional transaction and administrative costs. The net result, however, is positive: social costs decrease while legitimacy increases. Table 2 illustrates the comparative impact of appeals mechanisms.

Table 2. Impact of Appeals Mechanisms on Social Costs

Scenario	Effective False Positives	Effective False Negatives	Administrative Burden	Perceived Fairness	Overall Social Cost (normalized)
No Appeals	High	Medium	Low	Low	High
Appeals Introduced	Medium	Medium	Moderate	High	Medium
Appeals + Data Improvements	Low	Medium-Low	Moderate	Very High	Low

Source: Author’s simulations and institutional theory adaptation

The third and most transformative results come from the introduction of responsibility-sharing contracts, which operationalize hypothesis H3. These contracts distribute the costs of algorithmic errors across technological platforms, European importers, and primary producers. In scenarios where costs are shared equitably, incentives align: platforms invest in algorithmic improvements, importers in verification and monitoring, and producers in better record-keeping and compliance. The outcome is a collective reduction in both false positives and false negatives, accompanied by lower overall social costs.

Scenario	False Positives	False Negatives	Burden on Small Producers	Incentives for Platforms	Overall Social Cost (normalized)
No Contracts	Medium-High	Medium	High	Low	High
Partial Contracts (Importers-Producers)	Medium	Medium-Low	Medium	Moderate	Medium
Full Contracts (Platforms-Importers-Producers)	Low	Low	Low	High	Low

Source: Author’s simulations adapted to contract theory.

The results provide evidence that the current reliance on AI in sustainable supply chains, while promising, poses significant risks if left unaccompanied by institutional safeguards. The findings underscore three major points of discussion. First, the trade-off between stricter and more lenient thresholds reveals the distributive consequences of algorithmic calibration. Stricter thresholds reduce the probability of illegal goods entering the EU market, protecting European institutions from reputational and legal risks. However, they simultaneously increase wrongful exclusions of compliant producers, particularly smallholders in the Global South. This finding aligns

with concerns in the literature that technological solutions, when applied without adequate institutional design, may exacerbate inequalities (Nadvi and Raj-Reichert, 2022; Pan et al., 2022). For policymakers, the implication is clear: calibration choices are not neutral – they redistribute risks and costs among actors. Second, appeals mechanisms prove effective in reducing wrongful exclusions and improving fairness perceptions. The results demonstrate that appeals not only lower effective false positives but also enhance legitimacy, as affected actors are granted procedural justice. This resonates with institutional economics, which highlights the role of dispute-resolution mechanisms in reducing systemic inefficiencies (Williamson, 1985; Ostrom, 2010). Nevertheless, appeals introduce new transaction costs, which can be prohibitive if not carefully designed. The challenge for the EU lies in balancing accessibility and affordability of appeals with the need for timely resolution, as delays in perishable agricultural trade can erase the benefits of correction. Third, responsibility-sharing contracts emerge as the most robust institutional innovation. The results suggest that by redistributing the costs of errors among platforms, importers, and producers, the system incentivizes each actor to contribute to data quality and compliance. This outcome not only reduces error rates but also prevents the burden from falling disproportionately on weaker actors. Such contracts embody the principle of fairness while aligning with efficiency. They also resonate with the EU’s commitment to “just transition” principles, ensuring that sustainability does not come at the cost of social justice.

The scenario analysis provides further granularity. Under the EUDR-only scenario, data limitations in developing countries raise false positives, threatening to exclude compliant producers. This highlights the need for complementary support measures, such as capacity building and technical assistance. Under the ESPR/DPP scenario, improvements in data interoperability lower false positives but increase transaction costs. This reflects a trade-off between transparency and affordability, pointing to the need for targeted subsidies or shared infrastructure. Under the shared responsibility contracts scenario, collective action leads to superior outcomes, underscoring the importance of institutional design in shaping the effectiveness of technological tools.

From a theoretical perspective, the results validate the emerging concept of the “economics of algorithmic errors.” False positives and false negatives cannot be treated merely as technical issues; they have distributive, institutional, and ethical dimensions. By embedding these errors within an economic framework, the study demonstrates that optimal solutions require balancing efficiency with fairness, an insight consistent with broader debates in development economics and global value chain governance. From a policy perspective, the findings stress that regulatory ambition must be matched with institutional innovation. The EU’s Green Deal, EUDR, and related initiatives are groundbreaking in setting high sustainability standards. Yet without mechanisms to manage algorithmic imperfections, these initiatives risk creating exclusionary barriers. Shared responsibility contracts, complemented by appeals mechanisms, offer a viable path to ensuring that technological adoption supports both sustainability and equity.

CONCLUSION

The findings confirm the first hypothesis (H1): stricter thresholds in AI-based risk assessments reduce the probability of risky goods entering EU markets, thus lowering legal risks for regulators and importers, but they simultaneously increase the rate of false positives. These false positives disproportionately harm smallholders and exporters in the Global South, effectively excluding compliant actors and deepening global inequalities. This trade-off demonstrates that calibration decisions cannot be viewed as neutral technical choices; they redistribute risks and burdens across supply chain actors. In this sense, AI becomes not only a tool for sustainability but also a mechanism that can perpetuate or even exacerbate inequities, unless institutional frameworks are designed to correct them. The second set of findings concerned appeals mechanisms. By enabling wrongly excluded actors to challenge algorithmic decisions, appeals reduce the effective false positive rate and increase the perceived fairness of the system. Although appeals introduce additional transaction and administrative costs, their net impact is positive because they enhance legitimacy and reduce systemic exclusion. This aligns with theories of institutional economics, which emphasize the role of dispute resolution in lowering inefficiencies and strengthening governance structures. Yet appeals also present challenges: if they are too costly or slow, their potential is undermined, especially in agricultural trade where perishable goods require rapid decisions. Therefore, policymakers must design appeals procedures that balance accessibility, speed, and cost-efficiency.

The most transformative results came from the analysis of responsibility-sharing contracts. These contracts operationalize hypothesis H3 by distributing the costs of algorithmic errors among technological platforms, European importers, and primary producers. The study showed that shared responsibility reduces both false positives and false negatives, as all actors have aligned incentives to improve data quality and algorithmic accuracy. In contrast to systems where the weakest actors bear the heaviest burden, contracts foster collective investment and risk-sharing, producing both efficiency and equity gains. This finding is significant because it points to institutional innovations that can complement technological solutions, ensuring that sustainability does not come at the cost of justice. Taken together, the results advance the concept of the "economics of algorithmic errors." Unlike much of the existing literature, which focuses primarily on the potential of AI to improve efficiency and transparency, this study foregrounds the distributive and institutional dimensions of algorithmic mistakes. False positives and false negatives are reconceptualized as sources of social cost that require careful management through economic modeling and institutional design. By integrating mechanism design with the context of sustainable supply chains, the study provides a novel framework for understanding how optimal thresholds and institutional mechanisms can balance efficiency, sustainability, and fairness.

The theoretical contributions of this research are threefold. First, it introduces a formalized framework for analyzing algorithmic errors as economic costs, thereby extending the literature on AI in supply chains beyond purely technical discussions. Second, it demonstrates the value of appeals mechanisms and responsibility-sharing contracts as institutional complements to technological tools. Third, it situates these insights within the specific context of EU agricultural supply chains, showing how global regulatory innovations intersect with local realities in the Global South. This combination of theoretical rigor and contextual

relevance positions the study as a bridge between abstract economic modeling and applied policy debates. The practical implications are equally significant. For policymakers in the European Union, the study underscores the need to move beyond regulatory ambition and ensure that institutional safeguards accompany technological adoption. EUDR, ESPR/DPP, and related initiatives are groundbreaking, but without attention to algorithmic imperfections, they risk creating exclusionary barriers. Appeals mechanisms should be incorporated into regulatory frameworks to protect against wrongful exclusions, while responsibility-sharing contracts can institutionalize fairness and efficiency. For European importers, the findings highlight the benefits of co-investing in data quality, algorithm refinement, and contractual innovation, not only to ensure compliance but also to build resilient supply chains that can withstand regulatory and reputational shocks. For small producers in the Global South, the study offers hope that institutional safeguards can prevent them from being unfairly marginalized. Finally, for AI developers, the results point to the necessity of designing systems that explicitly account for fairness and error costs, moving beyond accuracy metrics to include socio-economic impacts. The discussion also highlights broader implications for global value chain governance. By placing algorithmic errors at the center of analysis, the study demonstrates that sustainability transitions cannot rely solely on technological solutions. They require governance frameworks that account for distributive justice and institutional effectiveness. This insight resonates with the EU's stated commitment to a "just transition," reminding policymakers that fairness is not an optional add-on but a precondition for legitimacy and long-term success.

Nevertheless, the study acknowledges several limitations. First, the modeling relies on simulated data rather than empirical measurements of error rates in existing AI systems applied to EU agricultural supply chains. While this allows for conceptual clarity, future research should validate the findings with real-world data from pilot projects and case studies. Second, the analysis focuses on three scenarios – EUDR-only, ESPR/DPP, and shared responsibility contracts – yet in reality, hybrid configurations are likely to emerge, requiring more complex modeling. Third, the study primarily considers the perspective of producers, importers, and platforms, but other stakeholders such as civil society organizations, consumers, and national governments also play crucial roles in shaping outcomes. Future research should broaden the scope to incorporate these additional actors. Despite these limitations, the study makes an original and timely contribution by highlighting a problem that has thus far received little attention: the economic and institutional consequences of algorithmic errors in sustainable agricultural supply chains. In doing so, it opens several promising avenues for further inquiry. Empirical studies can test the validity of the proposed model by analyzing real cases of wrongful exclusion under EUDR implementation. Comparative studies can examine how different jurisdictions, such as the United States and China, approach algorithmic risk management in supply chains, offering lessons for the EU. Finally, interdisciplinary research can integrate insights from computer science, law, and economics to develop more holistic solutions to the challenge of algorithmic governance.

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INNOVATION, ENTREPRENEURSHIP, AND DIGITAL TRANSFORMATION: DRIVERS OF SUSTAINABLE BUSINESS GROWTH

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Abstract

In the current scenario of a swiftly changing global economy, innovation, entrepreneurship, and digital transformation epitomise interdependent forces that shape competitive advantage, business sustainability, and growth. It is innovation that energises the creation of unique products, services and processes that cater to upcoming societal and market needs. While Entrepreneurship provides the strategic vision and risk-taking ability needed to transform these innovations into viable ventures, digital transformation serves as the key enabler, leveraging data, technology, and connectivity to accelerate scalability and achieve global reach.

The paper challenges the interconnections between these three arenas by examining cases of firms that have integrated digital technologies into their entrepreneurial models to pursue innovation-driven growth. The specific importance lies in how digital platforms, artificial intelligence, and automation are redefining business ecosystems, enabling small and medium-sized enterprises and startups to compete with established firms in international markets. In addition to this, the paper emphasises the policy and institutional frameworks essential for supporting innovation ecosystems, particularly in emerging economies, where digital transformation offers opportunities to advance traditional development stages.

The paper concludes that continual growth in economic relations and business development centres on the alignment of innovation strategies, entrepreneurial initiatives, and digital transformation. This integration enhances organisational performance and significantly contributes to the sustainable and inclusive development of the economy from a global perspective.

Keywords: Innovation, Entrepreneurship, digital transformation, sustainable growth, and economic growth

JEL classification: O

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INTRODUCTION

In the current scenario of a swiftly transforming global economy, organisations face increasing pressure to innovate, adapt, and sustain competitiveness amid technological disruptions and shifting consumer preferences. Globalisation and digitalisation have redefined traditional business structures, creating both opportunities and vulnerabilities across industries (OECD, 2023). Innovation has emerged as a strategic imperative rather than a discretionary choice, driving differentiation, productivity, and long-term growth (Schumpeter, 1934; Tidd & Bessant, 2021). It enables the development of novel products, services, and processes that respond to evolving market and societal needs. However, innovation by itself cannot guarantee economic transformation without the entrepreneurial vision to convert ideas into viable ventures, manage uncertainty, and design scalable business models (Drucker, 1985; Kuratko et al., 2021). Complementing these, digital transformation – through artificial intelligence (AI), automation, data analytics, and platform technologies – has become a critical enabler that redefines how firms operate, communicate, and deliver value in the global marketplace (Bharadwaj et al., 2013; Vial, 2019; Nambisan et al., 2019).

Although research has extensively examined the individual impacts of innovation, entrepreneurship, and digital transformation on organisational growth, there remains a paucity of studies that integrate these dimensions into a unified analytical framework (Audretsch & Link, 2018; Kraus et al., 2021). Existing scholarship often treats innovation as a technological process, entrepreneurship as an individual or managerial function, and digital transformation as an operational or infrastructural shift. This fragmentation overlooks the synergistic potential among the three domains, where digital technologies serve as both catalysts and outcomes of entrepreneurial and innovative activities. Moreover, much of the existing research has focused on developed economies, leaving significant gaps in understanding how emerging economies can leverage digitalisation to strengthen innovation-led entrepreneurship amid institutional and infrastructural constraints (Li et al., 2022; World Bank, 2023).

This study aims to address this gap by examining how firms – tiny and medium-sized enterprises (SMEs) and startups – integrate digital technologies into their entrepreneurial models to promote innovation-driven growth. It further investigates how policy and institutional frameworks can reinforce innovation ecosystems, especially in emerging markets where digitalisation offers opportunities to bypass traditional development stages (UNCTAD, 2024). The study acknowledges its limitations, including reliance on secondary qualitative data and case analyses, which may restrict the generalisability of findings across industries and regions. Nevertheless, it contributes to both academic and policy discourses by highlighting how digital transformation mediates the relationship between innovation and entrepreneurship, enhancing competitiveness, inclusivity, and sustainability in the global economy.

The expected outcome of this research is the development of a conceptual framework that illustrates the interdependence between innovation, entrepreneurship, and digital transformation, thereby contributing to theory-building in innovation management and entrepreneurship studies. It also aims to generate actionable insights for policymakers and business leaders to nurture digitally enabled innovation ecosystems.

Ultimately, the study posits that sustainable economic growth in the twenty-first century depends on the strategic alignment of innovation, entrepreneurship, and digital transformation as mutually reinforcing drivers of business performance and societal progress.

LITERATURE REVIEW

Innovation and Competitive Advantage

Innovation has long been recognised as a central driver of competitive advantage and economic development. Schumpeter's (1934) concept of "creative destruction" highlights innovation as a process through which new products and processes displace outdated ones, thereby fuelling industrial dynamism. In contemporary literature, innovation is defined not merely as technological invention but as the systematic process of translating ideas into value (Tidd & Bessant, 2021). Firms that sustain innovative capabilities tend to outperform competitors by continuously adapting to changing environments (Teece, 2007; Lawson & Samson, 2022).

The distinction between incremental and radical innovation (Abernathy & Clark, 1985) underscores the range of innovation outcomes – while incremental innovations refine existing processes, radical ones disrupt market structures entirely. The diffusion of innovation theory (Rogers, 2003) further explains how innovations spread within societies, influenced by communication channels, time, and social systems. In the digital era, innovation is increasingly data-driven and collaborative, relying on networked ecosystems and open innovation models (Chesbrough, 2020). Digital technologies have shortened innovation cycles, facilitated cross-border collaboration, and enabled firms – particularly small and medium enterprises (SMEs) – to participate in global value chains (OECD, 2023). However, a key challenge lies in aligning technological innovation with organisational strategy, culture, and human capital, especially in emerging economies (Li et al., 2022; UNCTAD, 2024).

Entrepreneurship and Economic Growth

Entrepreneurship acts as the mechanism that commercialises innovation, transforming ideas into economic opportunities. Drucker (1985) described entrepreneurship as the systematic pursuit of opportunity, driven by innovation. Building on this, the Resource-Based View (RBV) and Dynamic Capabilities Theory position entrepreneurial activity as essential for developing and leveraging organisational resources to achieve sustained competitive advantage (Barney, 1991; Teece, 2007). Entrepreneurial firms stimulate job creation, productivity, and social mobility (Audretsch & Link, 2018), and their role has become particularly vital in digital economies where agility and adaptability define market success.

Recent studies emphasise entrepreneurial orientation – characterised by innovativeness, proactiveness, and risk-taking – as a predictor of firm performance (Covin & Wales, 2019; Kraus et al., 2021). Entrepreneurship also contributes to inclusive growth, as it enables individuals and communities to access new opportunities through technology-based business models (World Bank, 2023). However, entrepreneurship ecosystems differ markedly between developed and developing economies.

In emerging markets, inadequate infrastructure, limited access to finance, and institutional inefficiencies constrain entrepreneurial activity (Li et al., 2022). Policies such as India's Startup India and Digital India initiatives demonstrate the importance of government support in building innovation-driven entrepreneurship ecosystems (NITI Aayog, 2023).

Digital Transformation as an Enabler

Digital transformation refers to the strategic integration of digital technologies into all areas of a business, fundamentally changing how it operates and delivers value (Vial, 2019). It involves not only technological adoption but also organisational restructuring, leadership adaptation, and cultural change (Bharadwaj et al., 2013; Sebastian et al., 2017). In this sense, digital transformation acts as both an enabler and accelerator of innovation and entrepreneurship.

The emergence of Industry 4.0, encompassing technologies such as the Internet of Things (IoT), artificial intelligence (AI), robotics, and cloud computing, has transformed the competitive landscape (Frank et al., 2019). Firms that successfully integrate these technologies achieve operational efficiency, data-driven decision-making, and enhanced customer engagement (Verhoef et al., 2021). Digital transformation has also democratised entrepreneurship by lowering entry barriers – digital platforms such as Amazon, Shopify, and Google Play allow startups and SMEs to reach global consumers with minimal physical infrastructure (Nambisan et al., 2019).

Nevertheless, the digital divide remains a significant concern. While firms in advanced economies benefit from robust digital infrastructure, many enterprises in developing countries struggle with limited connectivity, skills shortages, and policy fragmentation (UNCTAD, 2024; OECD, 2023). The effectiveness of digital transformation thus depends on complementary investments in education, governance, and institutional capacity (World Bank, 2023).

The Innovation–Entrepreneurship–Digital Transformation Nexus

Recent scholarship recognises that innovation, entrepreneurship, and digital transformation are mutually reinforcing forces rather than isolated phenomena (Nambisan, 2017; Kraus et al., 2021). Digital technologies foster innovation by enabling rapid prototyping, real-time data analysis, and customer co-creation (Vial, 2019). In turn, entrepreneurial initiatives accelerate the adoption and diffusion of these innovations within markets. Together,

they contribute to sustainable business ecosystems characterised by adaptability, inclusivity, and scalability (Audretsch & Belitski, 2022).

In emerging economies, this nexus presents both opportunities and challenges. Digital transformation enables startups to bypass traditional stages of industrial development by leveraging virtual operations and global networks (Li et al., 2022). However, the absence of coherent innovation policies and limited institutional support can hinder long-term sustainability (UNCTAD, 2024). Theoretical perspectives such as the National Innovation Systems (NIS) framework highlight the role of government, academia, and industry in co-creating conditions for innovation-driven entrepreneurship (Freeman, 1987; Lundvall, 1992).

By synthesising insights from innovation management, entrepreneurship studies, and digital transformation research, this paper positions their alignment as a strategic triad essential for business sustainability and inclusive economic development. This integrated understanding contributes to both academic theory and practical policymaking, particularly for economies navigating the complexities of digital transition.

RESEARCH OBJECTIVES AND METHODOLOGY

Research Objectives

The primary aim of this paper is to explore and conceptualise the interrelationship between innovation, entrepreneurship, and digital transformation as mutually reinforcing mechanisms driving sustainable business growth and competitiveness in the global digital economy. The study seeks to synthesise theoretical and empirical insights from existing scholarship to develop a conceptual framework that captures the dynamic interactions among these three domains.

Specifically, the objectives of this conceptual investigation are:

1. To examine the theoretical foundations of innovation, entrepreneurship, and digital transformation as distinct but interconnected phenomena within contemporary business environments.
2. To analyse how digital technologies reshape entrepreneurial strategies, enhance innovation capacity, and facilitate business model transformation.
3. To identify the policy and institutional frameworks that support the integration of innovation and digital entrepreneurship, particularly in emerging economies.
4. To propose a conceptual model illustrating how the alignment of these three forces contributes to business sustainability and inclusive economic growth.

By pursuing these objectives, the study aims to advance theoretical understanding and offer a structured foundation for future empirical research in the fields of innovation management and entrepreneurship studies.

Research Design

Given its theoretical orientation, this study adopts a conceptual research design, which relies on a systematic synthesis of existing literature, theories, and conceptual frameworks

rather than on primary data collection (Jaakkola, 2020). Conceptual research contributes to theory-building by integrating fragmented knowledge, identifying underexplored linkages, and proposing new frameworks for understanding complex phenomena (MacInnis, 2011; Whetten, 1989).

This paper employs an integrative literature review approach to map the conceptual relationships among innovation, entrepreneurship, and digital transformation. The review draws upon interdisciplinary sources, including innovation studies, management theory, entrepreneurship, information systems, and development economics, to provide a holistic understanding of the topic. Major databases such as Scopus, Web of Science, and ScienceDirect were consulted to identify peer-reviewed journal articles, reports, and books published primarily between 2010 and 2024, ensuring contemporary relevance. Classic theoretical works (e.g., Schumpeter, 1934; Drucker, 1985) were also included to anchor the discussion in foundational perspectives.

Analytical Framework

The analysis is conducted through thematic synthesis, focusing on three analytical dimensions:

1. Innovation as the source of value creation, representing technological and organisational change.
2. Entrepreneurship is the process of opportunity realisation, representing strategic vision, risk-taking, and market expansion.
3. Digital transformation as the enabler, representing the technological and infrastructural backbone that connects and accelerates the other two.

Through this synthesis, the study conceptualises a triadic model, termed the Innovation–Entrepreneurship–Digital Transformation Nexus (IEDT Model), which illustrates how these dimensions interact dynamically to foster competitiveness, scalability, and sustainability in firms. The framework also incorporates the role of policy and institutional support systems, recognising their influence in enabling innovation ecosystems and digital entrepreneurship, especially in developing contexts (Freeman, 1987; Lundvall, 1992; UNCTAD, 2024).

Scope and Limitations

As a conceptual inquiry, this study does not engage in primary data collection or statistical validation. Its findings are therefore limited to theoretical interpretation and synthesis based on secondary sources. While this restricts empirical generalisation, it allows for analytical generalisation (Yin, 2014) – generating propositions that can guide future research and empirical testing. The conceptual model developed herein is intended as a theoretical contribution rather than a tested framework, providing a foundation for scholars and practitioners to explore empirically in different regional or sectoral contexts.

DISCUSSION

In the contemporary business landscape, the convergence of innovation, entrepreneurship, and digital transformation (IEDT) is redefining how organisations achieve competitiveness and sustainability. These three domains, once considered distinct, now interact in complex and mutually reinforcing ways, shaping the strategic and operational dimensions of firms across industries. The increasing pace of digitalisation has blurred traditional boundaries between product creation, service delivery, and customer engagement, creating new avenues for entrepreneurial activity and innovation-led growth (Kraus et al., 2021; Vial, 2019).

Innovation and Its Expanding Role in the Digital Era

Innovation continues to be a decisive factor in shaping firm performance, yet its nature has evolved with the advent of digital technologies. Traditional innovation focused on product or process enhancement has transitioned toward platform-based and data-driven innovation, where digital tools enable continuous experimentation and customer co-creation (Tidd & Bessant, 2021; Chesbrough, 2020). Artificial intelligence (AI), machine learning, and big data analytics have transformed how firms identify market opportunities and respond to dynamic consumer demands.

However, innovation in isolation cannot yield sustainable outcomes unless embedded within a strategic and entrepreneurial context. Entrepreneurial decision-making provides the necessary direction, agility, and risk-taking to convert innovative ideas into viable business opportunities (Drucker, 1985; Covin & Wales, 2019). This interdependence highlights that innovation is both an antecedent and a product of entrepreneurial action, driven increasingly by digital enablers such as real-time data, automation, and collaborative networks (Nambisan, 2017).

Entrepreneurship in a Digitally Enabled Context

Entrepreneurship serves as the bridge between innovative potential and market realisation. In the digital age, entrepreneurial processes are undergoing a profound transformation, as digitalisation reshapes how entrepreneurs identify opportunities, mobilise resources, and engage with customers (Audretsch & Belitski, 2022). Digital entrepreneurship – defined as the creation of ventures that exploit digital technologies as a core component of their business models – has become a major driver of economic renewal (Nambisan et al., 2019).

Digital technologies provide entrepreneurs with tools to scale operations rapidly and enter international markets that were once inaccessible to smaller firms. For instance, cloud computing and e-commerce platforms allow startups to globalise their offerings with minimal capital investment (Li et al., 2022). This democratisation of entrepreneurship is particularly vital for emerging economies, where digital adoption can compensate for infrastructural and financial constraints (UNCTAD, 2024). However, challenges remain – especially in terms of uneven digital literacy, data privacy, and institutional readiness – which can hinder the full realisation of digital entrepreneurship's potential (OECD, 2023).

DIGITAL TRANSFORMATION AS A STRATEGIC ENABLER

Digital transformation has evolved beyond a purely technological upgrade to become a strategic process that redefines business models, value chains, and organisational cultures (Bharadwaj et al., 2013; Verhoef et al., 2021). It enables real-time decision-making, fosters collaboration, and enhances customer-centric innovation. When combined with entrepreneurial intent, digital transformation leads to the creation of agile enterprises capable of continuous learning and adaptation (Teece, 2007).

The integration of digital technologies also promotes open innovation, where firms leverage external partnerships, digital ecosystems, and innovation networks to accelerate knowledge sharing and co-creation (Chesbrough, 2020). Startups and SMEs benefit particularly from digital ecosystems that lower entry barriers and enhance visibility through global digital marketplaces. In emerging economies, digital transformation thus acts as both a leveller and a growth amplifier, allowing smaller firms to compete with established corporations on a near-equal footing (World Bank, 2023).

Interdependence and Implications for Business and Policy

The discussion of the IEDT relationship underscores a key insight: innovation, entrepreneurship, and digital transformation are not parallel domains but interdependent processes that jointly drive competitiveness and sustainability. Their integration fosters what Teece (2007) describes as “dynamic capabilities” – the ability of firms to sense, seize, and reconfigure resources in response to environmental changes.

From a business perspective, firms that align innovation strategies with digital and entrepreneurial initiatives exhibit stronger adaptability, faster innovation cycles, and improved market responsiveness (Verhoef et al., 2021). For policymakers, fostering this alignment requires building digital infrastructure, supporting innovation ecosystems, and promoting entrepreneurship education and digital literacy (Freeman, 1987; Lundvall, 1992).

Moreover, inclusive digital policies are essential to ensure that the benefits of innovation-driven entrepreneurship reach diverse stakeholders. In emerging economies, policies that support access to affordable technology, finance, and mentorship can empower startups and SMEs to become engines of innovation-led development (Audretsch & Link, 2018). Governments can also play a pivotal role by facilitating collaborations between academia, industry, and public institutions to build resilient digital innovation systems (OECD, 2023).

Overall, the integration of innovation, entrepreneurship, and digital transformation not only strengthens firm-level performance but also contributes to inclusive and sustainable economic growth. The global economy’s transition towards digitalisation underscores the necessity of rethinking how firms and institutions approach innovation – shifting from isolated technological advancement to holistic digital-entrepreneurial ecosystems that promote long-term resilience and competitiveness.

CONCLUSION

This conceptual paper addressed the central research question: How do innovation, entrepreneurship, and digital transformation interact to shape sustainable business growth and global competitiveness? The discussion revealed that these three forces are not independent but are mutually reinforcing elements that together form the backbone of contemporary economic and organisational advancement. Innovation drives the creation of new ideas, entrepreneurship converts them into viable ventures, and digital transformation amplifies their reach, scalability, and adaptability in an increasingly interconnected world.

The originality of this study lies in its integrative perspective that situates digital transformation as both an enabler and accelerator of innovation–entrepreneurship dynamics. Unlike prior approaches that examined these concepts in isolation, this paper proposes a triadic framework where digital technologies act as the connective mechanism, aligning innovation capacity with entrepreneurial intent. This conceptual linkage offers a deeper understanding of how organisations – especially SMEs and startups – can build resilience and competitiveness in the digital era (Nambisan et al., 2019; Kraus et al., 2021).

In terms of relevance, the insights presented here resonate powerfully with current global imperatives of sustainable and inclusive growth. The framework underscores the necessity for firms to strategically integrate innovation and entrepreneurship through digital enablers to remain adaptive in uncertain economic contexts. Policymakers, in turn, are encouraged to strengthen digital infrastructure, foster innovation ecosystems, and support entrepreneurial capacity-building – particularly in emerging economies where digital transformation can bridge developmental gaps (OECD, 2023; UNCTAD, 2024).

This conceptual exploration also opens avenues for further research. Empirical studies could test the proposed interconnections across industries and national contexts to validate their impact on firm performance and sustainability. Comparative studies between developed and developing economies could further illuminate how institutional frameworks and cultural factors mediate the innovation–entrepreneurship–digital transformation nexus. Moreover, longitudinal analyses could assess how the integration of these forces evolves as technologies advance and market dynamics shift.

In sum, the paper contributes original theoretical insights into how innovation, entrepreneurship, and digital transformation coalesce to drive organisational and economic progress. By responding to the need for a unified conceptual lens, it not only advances scholarly understanding but also offers practical relevance for leaders and policymakers seeking sustainable, inclusive growth in the digital age.

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BRIDGES AND BOUNDARIES: ALIGNMENTS AND DIVERGENCES IN EU, BRI, AND RUSSIAN STRATEGIC CORRIDORS

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Abstract

Transcontinental connectivity has become a defining dimension of global development, linking infrastructure investment, institutional governance, and geopolitical influence. This paper examines the interaction between the European Union's (EU) development objectives, China's Belt and Road Initiative (BRI) goals, and Russia's strategic aims through the lens of the Cross-Country Cross-Continent Economic Development Theory (CCCEDT). Drawing on comparative policy mapping, qualitative comparative analysis, and network perspectives of strategic corridors, the study explores how complementarities and divergences shape regional integration and global cooperation.

Findings reveal significant areas of alignment: infrastructure connectivity, trade facilitation, digital governance, and renewable energy diversification. Divergences persist in governance frameworks, energy strategies, and geopolitical orientation, yet these differences do not eliminate opportunities for selective cooperation. The Russia-Ukraine conflict disrupts long-term complementarities by rerouting trade flows and fragmenting energy partnerships, but it also underscores the urgency of climate resilience, interoperable digital systems, and third-country development as shared entry points for dialogue.

By integrating these perspectives into a triangular framework, the study extends CCCEDT beyond bilateral applications and demonstrates that sustainable connectivity requires both physical infrastructure and institutional compatibility. The novelty of this work lies in offering a comprehensive triangular model of EU-BRI-Russia interactions, providing policymakers and scholars with actionable insights for fostering cooperation even under conditions of rivalry and conflict.

Keywords: Cross-Country Cross-Continent Economic Development Theory; Belt and Road Initiative; European Union; Eurasian Economic Union; Geopolitical Economy

INTRODUCTION

Global economic development in the twenty-first century is increasingly shaped by transcontinental infrastructure, institutional cooperation, and trade integration. Connectivity initiatives are not only economic projects but also instruments of geopolitical influence and strategic positioning (Summers, 2016; Hurley et al., 2018). By linking regions through physical corridors, regulatory frameworks, and financial partnerships, states and regional blocs aim to expand their economic reach and secure long-term influence in global governance structures (Du & Zhang, 2018; Dollar, 2019).

Among these initiatives, China's Belt and Road Initiative (BRI) has emerged as one of the most ambitious. Since its launch in 2013, the BRI has expanded across Asia, Africa, Europe, and Latin America, with the stated aim of improving infrastructure, facilitating trade, and promoting investment flows (Yu, 2023). Studies highlight its potential to reduce

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transportation costs, enhance cross-border trade, and catalyse economic growth in partner countries (Du & Zhang, 2018). At the same time, scholars have raised concerns about debt sustainability, environmental risks, and geopolitical leverage associated with BRI projects (Brautigam, 2020; Hurley et al., 2018). These debates reflect the dual economic and strategic nature of the BRI and its implications for global development.

The European Union (EU) pursues a different yet complementary vision of connectivity that integrates trade, climate policy, and digital governance. Its Europe 2030 strategy emphasises market consolidation, digital transformation, and climate neutrality (Bongardt & Torres, 2022). Externally, the Global Gateway initiative commits significant resources to sustainable infrastructure investment with a focus on transparency, environmental standards, and democratic governance (European Commission, 2023; Heldt, 2023). The REPowerEU plan reflects the EU's prioritisation of energy diversification in response to geopolitical vulnerabilities (European Commission, 2025). Still, internal challenges such as policy fragmentation and the complexity of coordinating among member states complicate the EU's role as a global actor (Bruegel, 2024).

Russia's development and foreign policy objectives centre on energy leverage, regional integration, and multipolar engagement. The Eurasian Economic Union (EAEU) provides an institutional framework for harmonising trade and regulatory practices across post-Soviet states (Dragneva & Wolczuk, 2020). As a long-standing energy supplier, Russia has wielded significant influence in European and Eurasian markets (Mitrova & Yermakov, 2019). In response to sanctions and isolation following the Ukraine–Russia conflict, Russia has accelerated its pivot towards Asia, the Middle East, and the Global South (Gabuev, 2022; Connolly & Hanson, 2023). New initiatives such as the International North-South Transport Corridor (INSTC) signal its efforts to expand alternative connectivity frameworks (Le Monde, 2024).

Despite extensive research on the BRI, EU, and Russian strategies individually, few studies analyse their triangular interaction, especially within overlapping spaces such as the Black Sea, Central Asia, and the Arctic (Fasslabend, 2023). Existing literature often adopts bilateral perspectives, overlooking potential complementarities and shared entry points for cooperation. This gap limits understanding of how the three actors' strategies intersect under conditions of rivalry and conflict (Kaczmarek, 2022; Rodríguez-Pose & Döringer, 2023).

This study addresses that gap by applying the Cross-Country Cross-Continent Economic Development Theory (CCCEDT) (Salman et al., 2021). CCCEDT conceptualises development as the outcome of strategic corridors that integrate infrastructure with institutional alignment and geopolitical considerations. By mapping policy objectives, assessing institutional complementarities, and analysing corridor resilience, this research identifies rational grounds for cooperation between the EU, BRI, and Russia. The aim is to provide policymakers with evidence-based insights into how selective complementarities in energy, digital governance, and transport can support stability, mutual benefit, and sustainable connectivity in a multipolar world.

Keywords: Cross-Country Cross-Continent Economic Development Theory; Belt and Road Initiative; European Union; Russia; strategic corridors; policy complementarities; climate resilience; digital governance; conflict disruption

Literature Review

Scholarly interest in transcontinental connectivity has expanded considerably since the launch of China's Belt and Road Initiative (BRI) in 2013. The BRI has been studied as both an infrastructure-led development strategy and a geopolitical project with implications for global trade flows and governance (Summers, 2016; Du & Zhang, 2018; Hurley, Morris, & Portelance, 2018). Evidence shows that the initiative reduces transport costs, enhances cross-border trade, and generates investment opportunities (Dollar, 2019; Yu, 2023). Yet, critics emphasize debt sustainability, environmental risks, and the geopolitical leverage that China derives from financing large-scale infrastructure (Brautigam, 2020). This contested scholarship illustrates the dual role of the BRI as both a vehicle for development and a source of political influence. The Digital Silk Road further extends this agenda into telecommunications, data flows, and e-commerce, where interoperability, standards, and cyber-sovereignty remain unsettled (Huang, 2022; Yu, 2023).

The European Union (EU) pursues a model of connectivity that integrates trade, sustainability, and digital governance. Its Europe 2030 strategy emphasizes internal consolidation, digital transformation, and climate neutrality (Bongardt & Torres, 2022). Externally, the Global Gateway commits resources to infrastructure abroad with a focus on transparency and democratic standards (European Commission, 2023; Heldt, 2023). At the same time, scholars note bureaucratic fragmentation and resource limitations that constrain its competitiveness in global connectivity (Bruegel, 2024; Urpilainen, 2024). The REPowerEU plan highlights energy diversification and decarbonization as central priorities, particularly in response to dependence on Russian energy (European Commission, 2025; Biscop, 2023). However, recent reports show that the EU continues to import liquefied natural gas and uranium from Russia, underscoring the difficulty of decoupling (Reuters, 2025; Financial Times, 2025). Policy debates around "open strategic autonomy" stress that defense, supply chain security, and digital sovereignty are increasingly linked with economic resilience (Kroll, 2024; Miró, 2023). Studies highlight how integration of industrial, digital, and climate policy through instruments such as public procurement is reshaping the EU's external economic strategy (Cerre, 2024).

Russia's objectives remain centered on energy leverage, regional integration, and multipolar geopolitical positioning. The Eurasian Economic Union (EAEU) institutionalizes its role in trade harmonization and regulatory coordination among member states (Dragneva & Wolczuk, 2020). The EAEU facilitates free movement of goods, services, and capital while aligning policies in critical sectors such as transport, energy, and industry (Vinokurov, 2017; Eurasian Economic Commission, 2022). Russia's position as a key energy supplier continues to provide strategic influence (Mitrova & Yermakov, 2019). However, the Russia-Ukraine conflict has disrupted long-standing complementarities in energy and trade, forcing Russia to deepen its pivot towards Asia and the Middle East (Gabuev, 2022; Connolly & Hanson, 2023). Initiatives such as the International North-South Transport Corridor (INSTC) with Iran and India represent attempts to bypass sanctions and reconfigure connectivity frameworks (Le Monde, 2024; Carnegie, 2022).

Despite rich scholarship on the BRI, EU, and Russian strategies individually, few studies examine their triangular interaction. Most analyses adopt bilateral perspectives such as EU-China or EU-Russia relations, leaving unexplored the overlapping objectives and

frictions across all three actors (Fasslabend, 2023). This gap is significant, as shared regions like the Black Sea, Central Asia, and the Balkans represent spaces where cooperation, competition, and conflict intersect simultaneously (Kaczmariski, 2022; Rodríguez-Pose & Döringer, 2023).

The Cross-Country Cross-Continent Economic Development Theory (CCCEDT) provides a suitable framework for analyzing this triangular relationship. CCCEDT views development as the outcome of strategic corridors that combine physical infrastructure, institutional alignment, and geopolitical contestation (Salman et al., 2021; Iqbal et al., 2024). By applying this theory, the present study assesses complementarities in renewable energy, digital standards, and climate finance, while also highlighting where divergent governance approaches limit cooperation. The disruptions caused by the Russia–Ukraine conflict reinforce the urgency of selective collaboration, showing that even under rivalry, policy alignments can generate rational grounds for incremental cooperation.

METHODOLOGY

This study employs a comparative, multi-method research design rooted in the Cross-Country Cross-Continent Economic Development Theory (CCCEDT) (Salman et al., 2021). The approach integrates qualitative and semi-quantitative techniques to capture complementarities and divergences across the European Union (EU), China’s Belt and Road Initiative (BRI), and Russia’s strategic aims. Strategic corridors constitute the unit of analysis, as they encompass the physical, institutional, and geopolitical dimensions of connectivity.

The first component is **Comparative Policy Mapping**, which identifies areas of convergence and divergence in official documents, strategies, and investment programs. Sources include the Europe 2030 strategy, the European Green Deal, and Global Gateway (European Commission, 2023; European Commission, 2025), BRI project databases and corridor updates (National Development and Reform Commission of China, 2023), and Russian policy texts from the Ministry of Energy and Eurasian Economic Commission (Dragneva & Wolczuk, 2020). Policies adopted after February 2022 are coded separately to distinguish conflict-induced disruptions from long-term objectives (Biscop, 2023).

The second component applies **Qualitative Comparative Analysis (QCA)** to examine how combinations of objectives, institutional complementarities, and geopolitical frictions affect corridor performance. QCA’s set-theoretic logic is well suited to multi-actor contexts (Ragin, 2014; Schneider & Wagemann, 2021) and is increasingly applied in geopolitical and development studies (Kangas & Salonen, 2022; Pavlínek, 2023). The unit of analysis consists of major strategic corridors linking Europe, Asia, and Eurasia, coded for infrastructural capacity, governance arrangements, and alignment with policy priorities. Key condition variables include EU Objectives, BRI Goals, Russian Strategic Aims, Institutional Complementarities, and Geopolitical Frictions (Fasslabend, 2023).

The third component, **Network Analysis of Strategic Corridors**, visualizes and quantifies connectivity and resilience under different geopolitical scenarios. Data are drawn from UN Comtrade trade flows (2024), World Bank infrastructure datasets (World Bank,

2023), BRI investment maps (Huang, 2022), and the EU’s TEN-T transport network (European Commission, 2024). Scenario simulations compare network centrality measures before and after the Russia–Ukraine conflict, following established methods of network resilience (Borgatti, Everett, & Johnson, 2018; Freeman, White, & Romney, 2022).

Novelty of the Methodological Approach lies in its tri-continental scope. While much of the literature examines EU–China or EU–Russia relations in isolation (Hu & Spence, 2023; Kaczmarek, 2022), this design assesses all three actors as interacting within a shared strategic space. The conflict-adjusted lens treats the Russia–Ukraine war not as background but as an active moderating condition (Connolly & Hanson, 2023). This distinction enables clearer separation between structural complementarities and conflict-driven deviations.

All variables and codes are derived directly from CCCEDT, ensuring consistency between theory and measurement (Ali, 2023). The framework treats corridors as socio-technical systems that integrate infrastructure with institutional governance and political risk (Rodríguez-Pose & Döringer, 2023). **Figure 1** illustrates this triangular relationship, with EU, BRI, and Russia connected through shared complementarities in energy, digital governance, and infrastructure (Heldt, 2023; Huang, 2022).

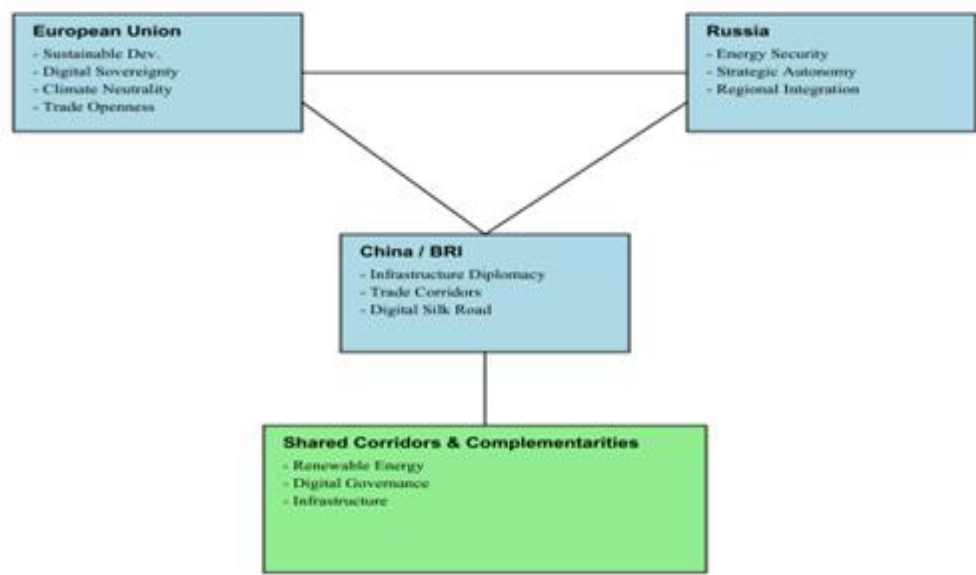


Fig. 1. Policy Complementarities Across EU, BRI, and Russian Strategic Objectives

Expected Analytical Outcomes include:

1. A policy alignment map showing areas of synergy and divergence across the three actors (European Commission, 2023).

2. Causal pathway models from QCA explaining how combinations of objectives and complementarities influence corridor effectiveness (Schneider & Wagemann, 2021; Pavlínek, 2023).

3. Scenario-based connectivity maps that assess the resilience of corridors under varying levels of geopolitical stress (Borgatti et al., 2018; Freeman et al., 2022).

Together, these outcomes test the study's propositions and offer policymakers actionable insights for navigating cooperation and autonomy in a post-conflict environment (Biscop, 2023; Hu & Spence, 2023).

RESULTS

The analysis reveals that infrastructure connectivity is a consistent priority across all three actors. The European Union (EU) promotes sustainable transport and renewable energy corridors through the Trans-European Transport Network (TEN-T) and the Global Gateway, embedding governance safeguards and environmental standards (European Commission, 2023; Heldt, 2023). The Belt and Road Initiative (BRI) expands multi-modal transport, energy, and digital infrastructure, with increasing emphasis on green projects and technological integration (Yu, 2023; Summers, 2016). Russia incorporates large-scale infrastructure expansion within the Eurasian Economic Union (EAEU) framework and bilateral agreements, emphasizing North-South and Arctic corridors to connect Eurasian markets (Dragneva & Wolczuk, 2020; Gabuev, 2022). These initiatives converge on the recognition that resilient transport corridors are essential for sustaining cross-continental trade.

Trade facilitation also emerges as a central alignment. The EU's trade policy emphasizes diversified partnerships, customs cooperation, and regulatory harmonization (Bongardt & Torres, 2022; European Commission, 2024). The BRI promotes cross-border trade through logistics integration and digital commerce platforms (Du & Zhang, 2018; Hurley et al., 2018). Russia seeks to expand export markets through EAEU tariff coordination and bilateral trade agreements, particularly in energy, metals, and agriculture (Mitrova & Yermakov, 2019; Le Monde, 2024). Collectively, these approaches indicate shared priorities in reducing transaction costs and strengthening corridor efficiency.

Digital connectivity provides another convergence point. The EU advances secure and interoperable systems through the Digital Compass and the Data Governance Act, which link competitiveness with sovereignty (European Commission, 2021; Allianz Digital, 2025). The BRI's Digital Silk Road supports telecommunications, digital trade, and satellite navigation (Yu, 2023; Huang, 2022). Russia, while emphasizing digital sovereignty, invests in infrastructure such as regional data centers and secured networks to support modernization and resilience (Connolly & Hanson, 2023; Snigyr, 2024). These initiatives highlight opportunities for selective alignment in data standards, interoperability, and cyber-resilience.

Table 1. Policy Complementarities Across EU, BRI, and Russian Strategic Objectives

Domain	EU Objective	BRI Goal	Russian Aim	Convergence Point
Infra-structure	TEN-T expansion; Green Deal corridors	Silk Road land & maritime corridors	North-South & Arctic corridors	Shared need for resilient transport and connectivity
Energy	REPowerEU diversification; renewables	Renewable energy and cross-border grids	Energy export role; LNG diversification	Collaboration possible in LNG trade and renewable integration
Digital	Digital Compass; Data Governance Act	Digital Silk Road; 5G and AI systems	Sovereign digital platforms; regional data hubs	Potential for interoperability, standards, and cyber-resilience
Trade & Finance	Open Strategic Autonomy; diversified partnerships	BRI financial corridors; AIIB	EAEU tariff integration; non-dollar trade	Partial overlap in customs, financial instruments, and logistics
Climate/SDGs	Climate-neutral 2050; Just Transition Fund	Green BRI projects; SDG financing	Climate adaptation; selective renewables	Collaboration on climate finance and sustainable infrastructure

Energy policy illustrates sharper divergence. The EU’s REPowerEU plan prioritizes renewable energy deployment and rapid diversification away from Russian fossil fuels (European Commission, 2025; Biscop, 2023). Russia remains largely hydrocarbon-centered, pursuing liquefied natural gas diversification while exploring selective renewable investments to reinforce regional security (Mitrova & Yermakov, 2019; Connolly & Hanson, 2023). The BRI continues to balance fossil and renewable projects, aligning with both partner needs and China’s domestic green transition (Yu, 2023; Huang, 2022). While strategic orientations differ, convergence is still possible in LNG trade, renewable energy grids, and climate finance.

Governance frameworks also diverge. The EU adopts rules-based approaches that prioritize transparency, environmental protection, and democratic accountability (European Commission, 2023; Bongardt & Torres, 2022). The BRI’s governance is more flexible, often adapting to local contexts but raising concerns over oversight and debt sustainability (Brautigam, 2020; Hurley et al., 2018). Russia emphasizes state-led control and strategic autonomy, linking infrastructure to broader security objectives (Gabuev, 2022; Mitrova & Yermakov, 2019). These differences complicate deeper integration but do not erase overlapping functional objectives.

Geographic orientation further differentiates priorities. The EU focuses on Africa, Eastern Europe, and the Indo-Pacific (Heldt, 2023; Bruegel, 2024), the BRI maintains a truly global scope (Summers, 2016), and Russia emphasizes Eurasia, the Arctic, and its near neighborhood (Le Monde, 2024; Dragneva & Wolczuk, 2020). These geographies intersect in critical junctions such as the Black Sea, Central Asia, and the Balkans, where complementarities and rivalries coexist.

Despite these divergences, the analysis identifies substantial complementarities in renewable energy, digital standards, and infrastructure resilience. These alignments provide rational entry points for conditional cooperation and selective policy dialogue.

CONCLUSION

The findings of this study demonstrate that the European Union (EU), the Belt and Road Initiative (BRI), and Russia share broad objectives in infrastructure connectivity, trade facilitation, digital integration, and aspects of energy transition. These areas create rational entry points for cooperation, particularly in renewable energy, interoperable digital systems, and multi-modal transport corridors, where complementarities in policy and technology can be leveraged (Rodríguez-Pose & Döringer, 2023; European Commission, 2023). For example, joint EU–China investments in Central Asian renewable energy could be transmitted through Russian infrastructure, aligning EU diversification goals, the BRI’s green transition, and Russia’s continued role as an energy transit actor. Such pragmatic initiatives illustrate how complementarities can exist even within a context of systemic rivalry.

At the same time, divergences in governance frameworks, energy priorities, and geographic focus remain significant. The EU emphasizes rules-based, transparent models; the BRI adapts flexibly to partner contexts; and Russia prioritizes state-led control linked to security objectives (Biscop, 2023; Brautigam, 2020). Energy strategies are particularly misaligned, with the EU seeking rapid decarbonization, the BRI balancing fossil and renewable investments, and Russia continuing to rely on hydrocarbons with selective diversification (Mitrova & Yermakov, 2019; Connolly & Hanson, 2023). These divergences limit the scope for seamless integration and make cooperation context-dependent.

The Russia–Ukraine conflict has further disrupted complementarities. Sanctions, confrontation, and market reorientation have strained energy ties, redirected trade routes, and eroded trust in multilateral platforms (Connolly & Hanson, 2023; Gabuev, 2022). The EU has accelerated diversification through REPowerEU (European Commission, 2025), while Russia has deepened its pivot toward Asia through corridors such as the International North–South Transport Corridor (Le Monde, 2024). Despite this fragmentation, shared challenges such as climate change, digital governance, and supply chain resilience remain compelling drivers for selective collaboration (Rodríguez-Pose & Döringer, 2023).

This study contributes theoretically by extending the Cross-Country Cross-Continent Economic Development Theory (CCCEDT) to a triangular setting, demonstrating that corridor effectiveness depends not only on physical infrastructure but also on institutional and regulatory alignment (Ragin, 2014; Schneider & Wagemann, 2021). By incorporating both complementarities and divergences, CCCEDT is shown to be adaptable to multi-actor geopolitical contexts marked by competition and conflict.

For policymakers, the results suggest that focusing on narrow, high-impact domains of convergence offers the most viable pathways for cooperation. Joint initiatives in renewable energy projects in third countries, the standardization of digital infrastructure, and sustainable transport corridors are areas where mutual interests align and political risks are lower (Bongardt & Torres, 2022; Yu, 2023). Conditional and targeted cooperation of this kind cannot resolve broader geopolitical disputes but can contribute to stability, incremental trust-building, and sustainable economic integration.

Future research should apply CCCEDT empirically to specific corridors such as the Black Sea, Central Asian energy routes, and Arctic transport passages, testing the resilience

of complementarities under geopolitical stress (Kaczmarek, 2022; Mitrova & Yermakov, 2019). By operationalizing these selective complementarities, systemic rivalry can be partially transformed into pragmatic cooperation, supporting regional stability and advancing global development objectives.

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FUNDING OF POLITICAL PARTIES IN EUROPE AS AN ELEMENT OF STABILITY

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Abstract

The aim of this article is to address the revenues of political parties. During the 1990s, scandals related to the illegal funding of parties were frequent in European countries. Regardless of the political or party system, party organization, and party law, political corruption linked to party financing has been a problem in every segment of Europe. Despite institutional changes, there are always certain issues that every country encounters regarding party funding. Even if laws regarding legal sources of party funding vary across Europe, certain general trends can be described. The composition and sources of party revenues have changed since the 1970s. Membership fees have become less significant in party budgets. Due to the decline in party membership, there is less revenue coming from this source. Finally, elements such as donations, state subsidies, and illegal financing are important issues that are addressed.

Keywords: political parties, funding, income, Europe

INTRODUCTION

In the traditional European „mass party“ model, membership fees represent far more than a mere financial stream; they serve as a primary indicator of political legitimacy and grassroots "sympathy" (Hofmeister & Grabow, n.d.). However, the viability of this source is increasingly challenged by socio-economic factors. As noted by Weber (1922), the professionalization of political parties has shifted the focus from voluntary participation to bureaucratic sustainability. When members perceive illegal practices or a lack of transparency in how funds are managed, the willingness to contribute financially diminishes, creating a "crisis of trust" that threatens the party's stability. To mitigate these challenges, particularly in developing or transitioning European democracies, the following strategies are employed to maintain the "linkage" between the party and the citizenry: Service-Based Contributions: Where financial liquidity is low, parties may adopt a model where "fees" are collected in the form of labor or specialized services. This ensures that the party remains a "voluntary association" in the sense described by Ostrogorski (1902), maintaining organizational energy even in the absence of capital. Mandate-Based Levies: A common European trend is the requirement for Members of Parliament and high-ranking officials to contribute a percentage of their public salary back to the party treasury. This practice is grounded in the "transaction cost" logic – these individuals owe their professional positions to the party's platform and electoral machinery (Jones & Hudson, 2001). The Transparency Mandate:

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For membership fees to remain a viable pillar of stability, parties must implement rigorous accounting standards. This is not merely a financial requirement but a democratic one; transparency serves as a safeguard against the "political corruption" that plagued European systems in the 1990s (Heywood, 2008). Income from capital, events, etc.; some parties own businesses (for example, printing houses for distributing party documentation and brochures, etc.) or carry out other activities from which they generate income. In principle, they must officially account for all income from such activities and their capital. Donations are the most controversial public sources of party financing. It is especially true for large parties that receive a significant portion of their income through donations.

METHODOLOGY

This study employs a qualitative comparative analysis of European party financing models. It examines the transition of revenue sources from the 1970s to the present. The research utilizes:

- Legal Analysis: Examining the Assembly's role in determining state budget assistance and the 20%/10% distribution rules.
- Institutional Framework: Reviewing the role of the Supreme State Audit Office in exercising financial control.
- Theoretic Synthesis: Applying economic theories of democracy (Downs, 1957) and sociological perspectives on party organization (Weber, 1922) to evaluate the "level playing field" in political competition.

RESEARCH QUESTION

„To what extent has the shift from grassroots membership funding to state-dependent subsidies impacted the political stability and transparency of European party systems?“

Private Donations and the Principle of Equality

A primary concern in modern party management is the potential for large economic donors to exert disproportionate political influence. This phenomenon creates a "market for policy" that contradicts the fundamental principle of democratic equality – the "one person, one vote" ideal. As noted by Jones and Hudson (2001), political parties often operate under high transaction costs; when private donors bridge this financial gap, it risks shifting the party's accountability from its electorate to its creditors. To maintain stability, European regulatory frameworks (such as those monitored by GRECO) increasingly demand strict ceilings on individual donations to prevent the "capture" of political platforms by private interests. Loans represent a significant, yet highly problematic, revenue stream. While they provide immediate liquidity for expensive modern campaigns, they often result in long-term structural debt. For many European parties, debt represents a "serious problem" that limits their policy autonomy.

- **Fiscal Dependency:** High levels of debt can force parties into compromising positions with lending institutions, creating a "secondary constituency" of creditors.
- **The Albanian/European Standard:** According to the legal standards often cited in transition democracies, parties are encouraged to avoid this source of financing. If loans are utilized, transparency is mandatory; parties must officially disclose their obligations to prevent "hidden" dependencies that could undermine the national interest (Hofmeister & Grabow, n.d.).

Principles of Party Financing

Various researchers and analysts have identified several fundamental principles that are both democratic and transparent for party financing. These are: Parties should officially account for their finances every year, especially when they receive public funds; Membership fees should be a large part of the party's income. Membership fees not only have a financial effect, but also improve the party's identity and force the party leadership to be more transparent towards its members. Government contributions to parties should respect the principle of equal opportunities, as well as the outcome of the elections. In relation to government contributions to parties, the volume of government donations should be taken into account.

Table. 1. Comparison of Funding Dynamics

Principle	European Application
State Subsidies	Common in Europe as compensation for election expenses or direct grants.
Membership Fees	Declining across Europe since the 1970s, reducing their budget significance.
Illegal Financing	A frequent problem in European countries throughout the 1990s.
Transparency	Constitutions often require public declaration of income to prevent donor influence.

Fundraising for Parties

Public funding of parties should not be the only or even the main source of income for parties. Therefore, parties should develop the ability to create appropriate means of income. This is a primary task for each party and should therefore be taken into account when structuring and allocating tasks within the party. In order to raise funds, a strategy is necessary, and this should be developed by the party treasurer. He should direct and coordinate all fundraising activities; moreover, he should coordinate with the regional and local party treasurers. At all levels of the party, there should be a finance officer (treasurer) who is responsible for fundraising.¹

¹ Right there.

Therefore, political parties are legal entities. Their financial and material resources consist of: a. membership fees; b. any property acquired legally; c. financial assistance in the amount determined in the state budget approved by law by the Assembly. Each party participating in the Assembly receives financial support in accordance with the number of deputies it has won. 20% of state assistance is divided equally among the parliamentary parties. 10% of state assistance is divided according to the percentage won among the political parties that participated in the last parliamentary elections and won over 1% of the votes. The part that remains undistributed from the 10% is added to the 70% fund and is distributed to the parliamentary parties.

The state facilitates the activity of political parties as follows: *a) parties have the right to use mass media free of charge in the event of electoral campaigns and referendums; b) parliamentary parties are provided with a building for their headquarters and local offices.* When this is impossible, the state assumes the payment of the rent. The Supreme State Audit Office is the competent body whose function is to exercise financial control over parties. The Supreme Audit Office has the right to exercise financial control over political parties before and after electoral campaigns.

Modern political systems face a major and enduring problem: ensuring that groups in society that are distinguished by ethnicity, religion, and other social and economic factors enjoy equal opportunities to participate in political processes and decision-making that affect their well-being and status. The existence of a sustainable democracy requires that special attention be paid to the issue of political finance.

Private Donations and Democratic Equality

Donations represent one of the most contentious sources of public party financing, particularly for larger European parties. The primary concern within modern party management is that substantial economic donors may leverage their financial power to exert political influence. This creates a direct conflict with the democratic principle of equality – the "one member, one vote" ideal – as wealthy interests may "buy" access to decision-makers.

As noted by **Downs (1957)**, money acts as a primary driving force in competitive political systems, but when left unregulated, it creates "uncontrolled areas" where the line between public administration and private party interest blurs.

Political financing is undoubtedly a vital aspect of party politics. In new democratic countries, the focus is on charismatic politicians, who are seen as key factors for victory. This may be true for a short time, but in order to build sustainable competition between parties, other sources must exist. Among these requirements for party competition, three are the pillars on which parties rely: *organization, voluntarism (ideology), and money (finance)*¹.

The necessary money enters legally or illegally into the various elements of the political system, politicians, administrations, control groups and not least the custodians of the party treasury. Unfortunately, the differences between political finance and party money, political money and politicians' money, the costs of democracy and the costs of democratic politicians cannot be discussed. For example, although campaign finance in North America is

¹ Financing of Political Parties and Election Campaigns. Handbook Series. 2.1. Sustainable Democracy.

better controlled than party activity in Western Europe, there is uncontrolled money, as well as uncontrolled areas on both sides of the Atlantic. This includes the dividing line between public administration and party activity, including abuse of legislative privilege, non-compliance with the services or payment established for officials.

Political financing is both an object and an outcome of political processes. Many authors who discuss the role of money in politics undoubtedly see money as the main driving force for competitive political systems ¹. The justification of decisions in a political system by encouraging potential subjects to participate in these decisions is widely accepted as a necessary characteristic of reputable governments in liberal democracies. Participation, as an important process and principle of democracy, has its own contradictions. The undeniable right to participate is inextricably linked to obvious practical difficulties. Unequal opportunities for participation and unequal propensities to participate are characteristics of this concept.

Modern democracy, as a form of mixed government, applies different rules at the same time. The principle of “one member, one vote” coexists with the concept of the legitimate use of money for political purposes. The right to genuine democracy, for which political action should be paid for by those who have a voluntary interest in ideologies, issues and candidates, has led to a strong emphasis on the idea of grassroots financing. Politicians are sensitive to factors that can influence the outcome of elections, one of which may be the existence of financing.

Participation through financial donations is not very popular even in rich countries. Political participation in stable democracies is undoubtedly a general activity of all citizens. Since democratic systems and their subsystems, such as parties and pressure groups, depend on voluntary participation, they must be able to provide reasonable incentives for participation ².

The general principle of democratic public participation at large should be conceived taking into account the degree of intensity of participation. There are several risks that accompany the fundraising process. Problems can arise from:

Lack of resources, either in society or in different segments of it. If a society is poor, political funding may be insufficient to be effective in a mass democracy.

Inequality of resources available to competing parties. Inequality of wealth distribution will translate into unequal terms for political competition and the democratic principle of a “level playing field” will be at risk.

The Role of State Subsidies and Reimbursements

To mitigate the risks of private influence, many European countries have implemented robust systems of state assistance. These subsidies are often structured around the principle of equal opportunity and are tied to electoral outcomes. Based on the Albanian model often cited in European transitions, state assistance is typically distributed through specific formulas:

¹ Financing of Political Parties and Election Campaigns. Handbook Series. 2.1. Sustainable Democracy.

² Financing of Political Parties and Election Campaigns. Handbook Series. 2.1. Sustainable Democracy.

- **Base Distribution:** A portion (e.g., 20%) is divided equally among parliamentary parties to ensure basic organizational stability.
- **Performance-Based Funding:** A further percentage (e.g., 10%) is allocated to parties that surpass a specific voting threshold (such as 1%), while the remainder is distributed based on the number of deputies won.
- **Indirect Support:** Beyond direct cash grants, the state facilitates activity through free access to mass media and the provision of buildings for headquarters.

Autonomy

This concept treats political parties as voluntary associations that have the right to determine their own way of organization, functioning, and financing. A naive version of this alternative would assume that under the democratic principle of equality (“one member, one vote”), the principle of free and fair elections, and the practice of secret ballot, each voter is guaranteed the right to decide his or her own fate.

It is assumed that no amount of money spent on propaganda will have a serious impact on the rational choices of citizens. The willingness of party supporters in different segments of society, such as the business and labor segments, to give funds will depend on the intensity of the ideological “war” over value and belief systems¹.

Transparency

This variant emphasizes the right of the people to know and judge all aspects of party behavior, including party funds and their expenditures. Economic theory suggests that fair competition is not a self-sustaining process, and the history of democratic politics has taught us that vested interests will try to influence the outcome of elections. At this point, the idea of transparency becomes very critical. In any democracy, the constitution may require political parties and/or candidates for elected office to publicly declare the sources of their income. This rule is underpinned by two basic assumptions: a. that parties obtain their funds only from private sources; and b. that some of these sources may be dangerous to their recipients. Donors may try to buy access to politicians or influence political decisions in order to serve their own personal interests. Parties are expected to be wary of receiving contributions from dubious sources, as this could damage their votes².

CONCLUSIONS

The evolution of political party funding in Europe highlights a critical paradox: while the shift toward public financing was designed to enhance stability, it has simultaneously created new risks for democratic transparency and institutional autonomy. This study concludes that the decline in membership fees – once the primary expression of grassroots sympathy – has fundamentally altered the party-voter relationship. Our analysis of the European and Albanian frameworks reveals three key findings: The Sustainability Gap: Any system of public financing must maintain a strong connection between the party and its

¹ Ibid. Handbook Series, 3.3.

² Ibid. Handbook Series, 3.4.

voting clientele. If parties fail to develop permanent connections with civil society, subsidies alone cannot ensure a sustainable democracy. The Transparency Mandate: As private donations continue to pose risks of undue influence, the principle of transparency becomes critical. Modern European democracies must require parties to declare income sources to mitigate the danger of "buying" access to politicians. Regulatory Oversight: Illegal financing remains a persistent challenge across Europe, regardless of the specific legal variations between countries. Stability is not achieved through funding alone, but through the rigorous exercise of financial control by bodies like the Supreme State Audit Office.

In summary, for money to serve as a pillar of stability rather than a source of corruption, political systems must balance state support with incentives for voluntary participation. Ideally, this funding model should empower parties to disseminate their programs and maintain organizational structures without becoming financially dependent on narrow interest groups or individuals.

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THE IMPACT OF ACTIVE AND DESCRIPTIVE VERBS ON MATHEMATICS LEARNING OUTCOMES IN PRE-UNIVERSITY EDUCATION

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Abstract

In learning based on educational competencies that the student acquires, it is noted that some characteristics and features distinguish it from learning based on learning objectives. The differences are not only formal but also conceptual. In learning with competencies, great importance is not what students know (facts), nor even how they understand (concepts and principles), but the actions (skills) that students perform to realise them. Formulated differently, in learning based on educational competencies, it is not enough that the student possesses knowledge, nor how he understands it, but the greater order is the action that he performs based on the knowledge he has acquired and its meaning. Some characteristics of learning based on the learning outcomes according to key competences are:

In learning based on learning outcomes according to key competences, it is not enough to know the knowledge, but it is important to do, to act, and to demonstrate the skills. Competency-based teaching aims to place the student at the centre of the learning process. Competency-based teaching and student-centred teaching are interconnected, because both have in mind the student and the learning process. The competency-based curriculum shifts the focus of attention from the learning of subject content with the teacher at the centre to the learning centred on the student, capable of using the learned knowledge. As a result, teaching in the curriculum based on key competences offers different learning situations through which the student is formed in the intellectual, social, cultural, and civic aspects. Key competences include the integration of skills, abilities, knowledge, attitudes and values to achieve sustainable, self-directed and creative learning.

In this way, the Key Learning Competence is the sum of the combination of knowledge, abilities, attitudes, and educational values that the student acquires. Key Learning Competencies = Knowledge + Skills + Expressions + Values (combined).

Keywords: active verbs, descriptive verbs, learning outcomes, key competences, skills

INTRODUCTION

For ten years, Albania has been implementing a competency-based curriculum. In learning based on the educational competencies that the student acquires, it is noted that there are some characteristics and features that distinguish it from learning based on learning objectives. The differences are not only formal but also conceptual. Recalling the definition of researcher Bauer: in learning with competencies, great importance is not what students know (facts), but what they understand (concepts and principles) and the actions (skills)

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that students perform to realise them. (Bauer, 1996, 141). According to Bauer, learning based on the educational competencies that the student acquires during the learning process is not limited to the learning knowledge but also to the skills that he must acquire. Many mathematics teachers in primary school, but also in training, do not have the pedagogical knowledge of the content to teach it" (A. Vrapı, 3, 2015). In other words, effective teaching, valuable mathematical tasks are used to introduce important mathematical ideas and to engage and intellectually challenge students... Shin, M., & Bryant, D. P. (2015). Regarding different ways of developing the learning process, we say: Effective functioning in groups includes knowing how to organise work, distribute responsibilities, divide complex tasks and provide useful feedback on the work that has been done (A. Vrapı, 3, 2015). Some characteristics of learning based on learning outcomes according to key competencies, are:

A) In learning based on learning outcomes according to key competencies, the student is not enough to know the knowledge, but it is important to do, to perform the action, to demonstrate the skills. Competency-based teaching aims to place the learner at the centre of the learning process. Competency-based teaching and learner-centred teaching are interconnected because both focus on the learner and the learning process. Competency-based curriculum shifts the focus from teacher-centred learning of subject content to learner-centred learning, capable of use the learned knowledge. Motivation is a very important indicator that should accompany the student in involvement in teaching and learning (A. Vrapı & F. Vrapı, 2021, 41). As a result, teaching in the core competencies curriculum offers different learning situations through which the learner is formed in the social, cultural, intellectual and civic aspects. They are also unfamiliar with different stages of the inquiry process, such as generating hypotheses, providing logical arguments, and transforming data into a product (A. Vrapı, 3, 2015). Key competencies include the integration of skills, abilities, knowledge, attitudes and values with the aim of achieving sustainable, self-directed and creative learning.

In this way, the Key Learning Competence is the sum of the combination of knowledge, abilities, skills, attitudes and educational values that the student acquires. Key Learning Competence = Knowledge Ability + Skills Attitudes Values (combined together).

In the competency-based curriculum for each subject, we distinguish:

B) Learning outcomes according to key competencies. Key competencies are:

1. Communication and expression competence.
2. Thinking competence.
3. Learning competence.
4. Life, entrepreneurship and environmental competence.
5. Competence personal.
6. Civic competence.

7. Digital competenceC) Learning outcomes according to subject competencies. Learning outcomes according to subject competencies are compiled in the subject curriculum of each subject. For example, in the subject Mathematics 4, Albas Publishing House, year of publication 2018, we have learning outcomes for mathematical competencies for each topic (chapter) such as Number, Measurement, Geometry, Algebra and Function, Statistics and Probability.

D) Learning outcomes of subject competencies according to teaching topic. Learning outcomes according to subject competencies are compiled by the teacher during the planning of daily preparation. For example, in the subject Mathematics 4, Albas Publishing House, year of publication 2018, in the teaching topic: Addition and Subtraction, let us bring an example of the teacher's drafting of the daily preparation plan of learning outcomes according to the competencies of the field, according to the teaching topic. For this teaching topic, the learning outcomes are: The student:

- adds and subtracts (orally/written) three-digit numbers with two-digit numbers or three-digit numbers approximated by multiples of 10 or 100, e.g. $376 + 59$; or $546 - 98$, or $764 - 295$

- subtracts a one- or two-digit number from a three-digit number with decimals of tens and hundreds;

- chooses appropriate strategies to perform operations orally or in writing.

In each of the above cases, as in:

- ☐ learning outcomes according to key competencies,

- ☐ results according to domain competencies,

- ☐ learning outcomes of domain competencies according to the teaching topic:

During their drafting, the teacher refers to the students differently from learning based on objectives, where the objective refers to the students. For example, in learning with objectives, one of the objectives was: Students should be able to, at the end of the lesson, add and subtract three-digit numbers with two-digit or three-digit numbers approximated by multiples of 10 or 100, e.g. $376 + 59$; or $546 - 98$, or $764 - 295$.

In learning based on objectives, the objective refers to the question: What do students know? In learning based on competencies, the learning outcomes refer to the question: What does the student do? So, in objective-based learning, knowledge is the primary focus, while in competency-based learning, skills are the primary focus.

ACTIVE VERBS IN LEARNING OUTCOMES

When expressing learning outcomes according to key competencies, learning outcomes according to domain competencies or learning outcomes of domain competencies according to teaching topic, the verb is important in the sentences through which they are expressed. The use of verbs in the subject of mathematics is important. It is well known that mathematics was born to respond to human needs. In this sense, mathematics in primary education helps students to perform mathematical operations such as addition, subtraction, multiplication, and division as quickly, accurately, and safely (A. Vrapı, 2022, 7).

In the above sentences through which learning outcomes are expressed, the verbs: performs, subtracts, and selects are action or active verbs. The active verb represents a visible, recognisable action.

There are some formal differences between the verbs in the sentences expressing learning outcomes compared to the verbs in the formulation of learning objectives. Before describing these differences, let's look at the formal appearance of the verbs in the sentences with which we presented learning outcomes and learning objectives a few lines above.

The verb is collected in the learning outcomes.

The verb to collect is in the objectives.

The verb to collect in the learning outcomes is a verb in the indicative mood, present tense, third person, singular. The student collects (who? he). The active verb in the learning outcomes is a verb in the indicative mood, present tense, third person, singular.

The verb to collect in the objectives is a verb in the subjunctive mood, present tense, third person, plural. The students collect (who? they). The verb in the learning objectives is a verb in the relative mood, present tense, third person, plural.

The focus on the student in the learning outcomes is not a moment of isolation, but a moment of focus on each student, the inclusiveness of every student in the class.

The learning outcomes are presented with active verbs because they represent activities that students carry out to acquire the competencies foreseen by the learning process. Development needs require that today's learning process should not continue to focus only on knowledge, but teachers should shift the main focus to the skills that the student must possess to demonstrate the knowledge they possess. Also, today's student must demonstrate positive attitudes and values regarding interaction, initiative and entrepreneurship in real-life situations. Mathematics and spatial abilities are closely related, specifically focusing on space and form. On the other hand, spatial ability is the capacity to understand and manipulate visual and spatial information, such as visual memory, spatial construction, mental rotation, pattern filling, and spatial orientation (Pahmi, S., Vrapı, A., & Supriyadi, E., 55, 2024).

METHODOLOGY

The presented paper is mainly theoretical. For the preparation of the paper, theoretical literature was used, with an emphasis on mathematics textbooks from the publishing houses Pegi, Albas, and Media Print. Also, in order to have as much material as possible, interviews were conducted with teachers and education specialists in Elbasan, Fier, and Vlora in Albania.

FINDINGS

Based on the study of textbooks, the language used in the description of knowledge in textbooks and the practical application in teaching the students. For ten years in Albania, the curriculum based on teaching competencies based on educational competencies has been applied for the subject of Mathematics in pre-university education. In continuation of the mention of the findings, let us describe below some of the active verbs used in lessons. Some active verbs at the knowledge level are: quote, distinguish, direct, name, film, speak, focus, formulate, photograph, find, identify, return, read, list, collect, memorize, count, define, paraphrase, bend, summarize, mention, repeat, describe, present, stand, list, recount, reproduce, display, write, examine, systematize, say, transmit, show, observe, etc.

At the level of comprehension, some active verbs are: distinguish, decriminalize, discuss, identify, formulate, identify, illustrate, interpret, search, classify, code, contact, contract, convert, criminalize, curve, locate, maximize, protect, average, minimize, construct, change, narrow, derive, predict, define, generalize, paraphrase, translate, summarize,

describe, select, accept, report, reformulate, review, rewrite, accompany, explain, express, show, evaluate, choose, expand, resolve, enlarge, reduce, etc.

At the implementation level, some active verbs are: administer, communicate, demonstrate, dramatize, experiment, label, find, trace, illustrate, interpret, sing, calculate, manipulate, measure, collect, cover, modify, divide, build, change, raise, underline, operate, organize, orient, predict, use, reinforce, prepare, generalize, proportion, accelerate, weigh, divide, plan, complete, practice, produce, project, rank, examine, multiply, sketch, transfer, show, reduce, separate, evaluate, implement, subtract, discover, replace, choose, resolve, move, develop, etc.

At the level of analysis, some active verbs are: analyze, evaluate, systematize, decompose, calculate, categorize, classify, compare, connect, confront, criticize, debate, deduce, determine, differentiate, discriminate, distinguish, divide, examine, experiment, identify, illustrate, inspect, investigate, list, emphasize, ask, connect, proportion, test, conclude, etc.

At the level of synthesis, some active verbs are: argue, collaborate, unite, make, formulate, generate, design, integrate, combine, compose, conceive, create, collect, manage, modify, connect, build, organize, organize, prepare, generalize, summarize, plan, propose, reconstruct, revise, rewrite, re-system, restore, invent, explain, systematize, decide, develop, etc.

At the evaluation level, some active verbs are: argue, relate, appreciate, discriminate, judge, interpret, justify, contact, compare, criticise, connect, measure, defend, interrupt, predict, conclude, recommend, list, explain, ensure, decide, evaluate, choose, select, etc.

At the creation level, some active verbs are: dramatise, balance, form, generate, harmonise, compose, create, build, project, generalise, define, write, invent, sketch, decide, draw, etc.

The verbs at each of the levels of Bloom's taxonomy presented above are in the first person singular. We recall that in sentences through which learning outcomes are expressed, the verb must be in the indicative mood, present tense, third person singular. For example, in first-grade mathematics, the student correctly classifies the elements of a set according to colour, shape, and size.

We emphasise that verbs such as know, understand, listen, etc., are not action verbs (active) because they do not represent an active state of the student in learning. For example, the verb knows. Sentence: The student knows how to add two-digit numbers. The learning outcomes cannot be expressed with the quoted sentence because the student may know the knowledge, but the teacher, the other students do not see anything, do not hear, are not convinced whether or not the student knows how to perform mathematical operations if he does not perform the operation or does not express himself about performing them. To correctly formulate the learning outcome in this case, we should express: The student correctly adds two-digit numbers by writing them in advance in the column. The verb used in this case is the verb of action because we understand that the student possesses the knowledge and skills to operate as the student writes by presenting the solution in the column. Also, in this case, the student acts, writes, places the numbers in the column, performs the addition, and talks about the performed operation. Another example of the verb understands. Sentence: The student understands the forces acting on the body hanging on a spring, does not express a learning outcome. Through this sentence, the teacher, other students cannot judge

whether or not the student understands that the forces acting on the body hanging on a spring are the force of gravity and the force of the reaction (tension) of the spring. Otherwise, we may think that the student understands, but if he does not express himself, does not write, does not speak, does not sketch, does not illustrate or model, we cannot judge that the student has understood the knowledge or possesses the skill. In this case, one of the learning outcomes is: The student determines and names the forces acting on the body hanging on a spring.

CONCLUSIONS

In Albania, a learning curriculum based on learning competencies is applied, which aims for students to acquire knowledge, skills, habits and values.

In Albania, in pre-university education, since the Ministry of Education has been taking over, mathematics textbooks borrowed from the best books of the Universities of Oxford and Cambridge are used, which are translated into Albanian and adapted by Albanian authors.

In mathematics textbooks, it is intended that students acquire skills to prepare them for life and entrepreneurship.

Active verbs are used in teaching, but care must be taken to apply them more in accordance with the learning outcomes and teaching content.

There are teachers who do not adapt the active verb in the required manner, tense and person.

It is necessary that the content of texts borrowed from the English language be translated and adapted more accurately, as there are cases of translations into Albanian that are meaningless.

The use of active verbs clarifies the requirements of the problem and encourages critical thinking in students about its solution.

The use of active verbs better focuses students on the solution of the problems and empowers them in their solution.

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PUBLIC KNOWLEDGE AND PERCEPTION OF ARTIFICIAL INTELLIGENCE

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Abstract

As the implementation of artificial intelligence rapidly expands into the routines of society, it is essential to understand the public's position towards its usage, adoption, and importance, especially in emerging cultures. This study assesses the general public's awareness and perceptions of Artificial Intelligence (AI) and its impact on daily life, productivity, and societal issues in Albania. The study employed a qualitative approach, using data collected from a total of 126 respondents via a structured online survey comprising 16 multiple-choice questions. The results reveal a strong presence and pervasive reach of artificial intelligence in the daily routines and lives of Albania's inhabitants. The main applications used range from ChatGPT to Face ID security platforms, as well as apps that facilitate government services to the population. The respondents regard the functionalities provided by AI-based applications as helpful in enhancing the overall quality of life. More specifically, they are perceived to promote task independence, decision making, improved communication with community members, and time efficiency. While the collected responses suggest that the implementation of AI in society has the potential to reduce social and economic inequalities, concerns are raised regarding its uneven adoption, potential job displacement, and issues related to data privacy and security.

Keywords: Artificial Intelligence, Public Perception, AI technologies, Social Inequalities

JEL Codes: O33, D83, I3, Z13

INTRODUCTION

The recent emergence of technologies and platforms that incorporate artificial intelligence (AI) has permeated society's daily life, affecting how individuals interact with services provided by different institutions and the professional landscape of conducting business. These innovations have transformed various other sectors, including healthcare and academic fields. However, their reach depends on the public's knowledge and perception of the risks and benefits associated with these AI-driven applications.

Previous studies have primarily focused on the public opinions of artificial intelligence in specific aspects, such as medicine or education. In contrast, others have examined public perceptions in more advanced countries, leaving a gap in understanding how emerging societies engage with these automations. This study employs a qualitative approach and

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recent data to explore the public's familiarity with AI technologies, their attitudes towards AI's impact on personal life and society, and potential concerns regarding its usage, in the context of Albania. To rigorously assess the aforementioned objective of this research, the analysis focuses on answering a central research question:

H₁: How do public perceptions and the level of AI usage influence the perceived benefits and risks of AI technologies in Albania?

The content of this article is structured as follows: Section 2 examines existing literature associated with the studied matter. Section 3 outlines the methodology, while Sections 4 and 5 report the findings and conclusions.

LITERATURE REVIEW

As artificial intelligence becomes more embedded in daily life, it is essential to understand how these emerging technologies are perceived by society, along with the public's opinions on potential risks and perceived benefits.

Fakhri et al. (2025) employed a qualitative approach on a purposefully selected sample of AI-knowledgeable individuals to determine the impact of ethical practices on the public perception of artificial intelligence. The authors revealed that a design that incorporates fairness, transparency, and accountability reinforces trust and encourages adoption, while enhancing societal impact. Furthermore, Brauner et al. (2023) used a criticality map to examine survey responses from 122 German individuals, by considering the participants' opinions and their anticipated probability of 38 presented statements on various aspects. The findings suggest that the individuals' level of trust in AI-driven systems influenced the outcomes, offering nuanced views on whether the impacts of these technologies are perceived positively or negatively, along with differing opinions on their expectancy. The threat of cybersecurity was identified as the most pressing concern among respondents.

Artificial intelligence is now integrated into everyday routines through a variety of applications that serve individuals, such as ChatGPT, banking automated assistants, and even government apps' chatbots. People are more likely to use these electronic AI-driven systems if they perceive them as more emotionally capable. In the case of governmental virtual assistants, it is important to factor in the public perception of their emotional competence, which not only encourages the user's trust and active interaction but also affects the citizen-government relationships (Guo et al., 2025).

It is essential to consider the population's perception of the quality of information provided by these intelligence systems. (García-Faroldi et al., 2025) conducted a survey in the region of Andalusia that included a sample of 1550 individuals aged 15 and above, indicating that the vast majority of respondents had previously heard of AI. The participants acknowledged the belief that artificial intelligence contributes to the development and distribution of inaccurate information, while also recognizing its ability to detect false news. Other concerns that may arise from the emerging advancement of these platforms are the fear of job displacement, personal data security, and ethical administration, the perceptions of which are all influenced by the demographic indicators of the population, such as age, academic attainment, and the profile of work (Gerlich, 2024). Furthermore, Kafali et al.

(2024) assess the credibility and reliability of artificial intelligence by examining the encounters and impressions of individuals on several facets, including transparency, security, user discretion, integrity standards, and adherence to these interfaces.

These studies reinforce the claim that trustworthiness, perceived risks, and the areas where artificial intelligence can be applied, affect the societal views and attitudes towards its adoption (Gerlich, 2023).

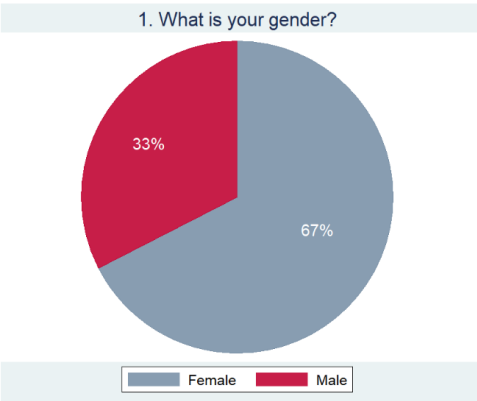
METHODOLOGY

The data for this research were collected through a structured online survey comprising a total of 16 questions, of which 8 were Likert-scale questions used to assess individuals' opinions and agreements on certain assertions. Two of the inquiries contain multiple-choice alternatives, and the remaining 6 are closed-ended questions. The sample comprises a total of 126 respondents of Albanian nationality, representing diverse demographic backgrounds characterized by their gender, age, and level of education. This study employs a qualitative methodological approach, using primary data gathered from a questionnaire that was constructed and distributed.

ANALYSIS OF SURVEY DATA

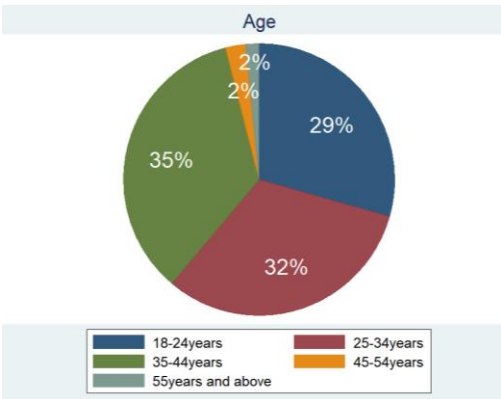
The pie charts visually present the results obtained from the survey as follows:

Figure 1: Gender Distribution



Source: Author’s Elaboration

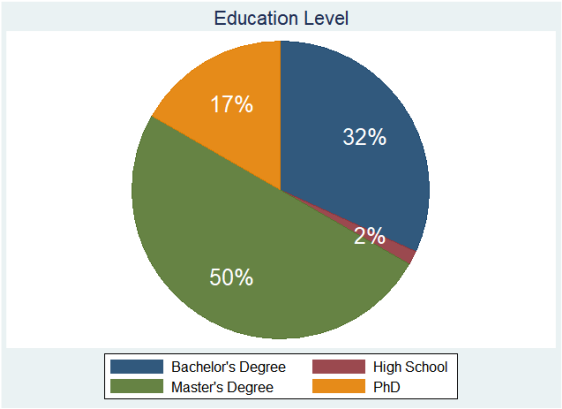
Figure 2: Age Distribution



Source: Author’s Elaboration

Based on the chart above (see Figure 1), more than half of the respondents, corresponding to approximately 67%, are females. Furthermore, Figure 2 shows that the majority of the respondents fall into the age interval of 35-44 years old, at 35%, followed by the age of 25-34 years old, with 32%. The age interval of 18-24 years old accounts for a considerable proportion of the respondents, representing an approximate value of 29%. The results indicate that AI has become an integral part of life for those aged 25 to 44, more particularly for individuals between the ages of 35-44 years old.

Figure 3: Education Level

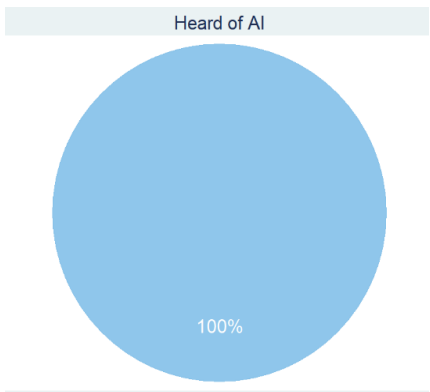


Source: Author’s Elaboration.

Based on the results displayed in the chart above, 72% of the respondents have completed Bachelor studies, while 50% of the respondents have obtained a Master's degree. The results shown in the three figures give information on the demographic background of the individuals assessed.

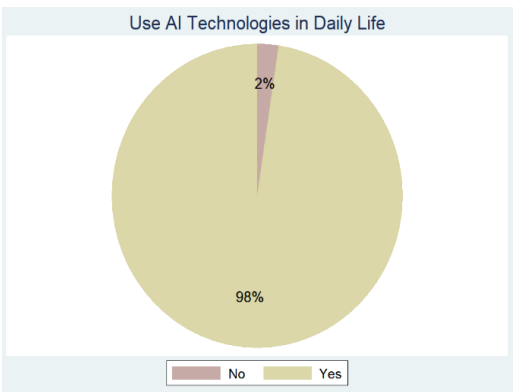
All respondents in the sample have previously heard of AI, indicating that they have either been exposed to artificial intelligence technologies or have integrated AI applications into their daily lives. This statement is further reinforced by the results displayed above (see Figure 5), which show that 98% of the individuals assessed utilize AI technologies in their habitual routines.

Figure 4: Heard of AI



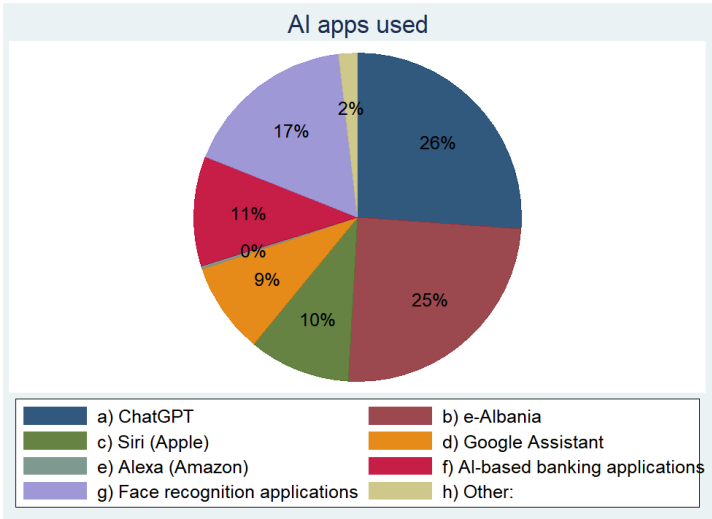
Source: Author’s Elaboration.

Figure 5: AI Usage in Daily Life



Source: Author’s Elaboration.

Figure 6: AI Usage in Daily Life

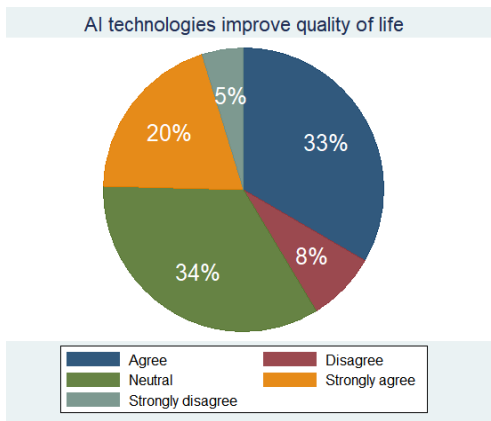


Source: Author’s Elaboration.

Based on this pie chart, the most used apps are ChatGPT with 26% frequency, followed closely by e-Albania with 25%, and Face recognition apps with 17%. Individuals are primarily focused on AI apps, such as ChatGPT, to generate and collect information. Usage is followed by e-Albania, an app serving work and legal purposes, as well as gathering personal information. Despite the extensive utility of government apps like e-Albania in occupational settings or the collection of legally processed personal data, and FaceID, which provides additional security and safety for devices, the most widely used app remains ChatGPT.

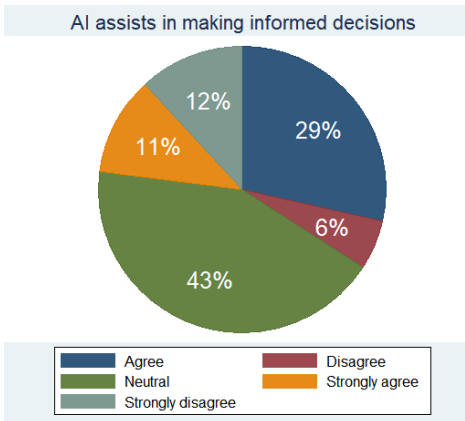
Approximately 3/4 of the respondents believe that AI improves personal and professional productivity. This illustrates the significant integration of AI in the lives and routines of society. Furthermore, approximately 74% of the respondents believe AI technologies are time-saving.

Figure 7: Productivity Improvement



Source: Author’s Elaboration.

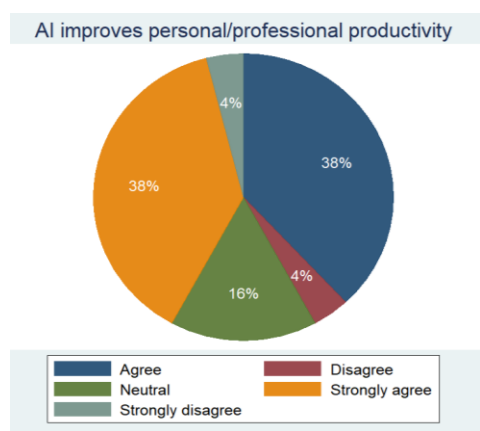
Figure 8: AI is time-saving



Source: Author’s Elaboration.

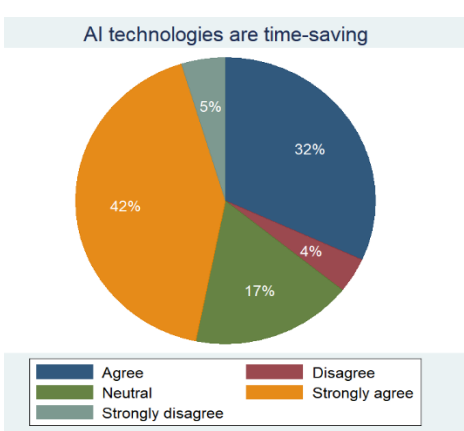
The first chart shows that more than half of the respondents, approximately 53%, have the belief that AI technologies improve the quality of life (see Figure 9). Based on this chart, the majority of the respondents, corresponding to 41%, recognize that AI assists the decision-making process, while 43% hold a neutral status on this matter. This reflects the emerging adoption of the population to these trends.

Figure 9: AI and Quality of life



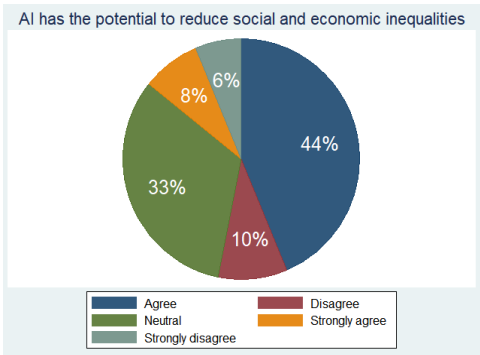
Source: Author’s Elaboration.

Figure 10: AI and Informed Decisions



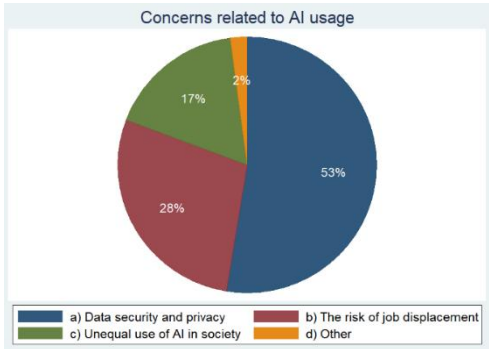
Source: Author’s Elaboration.

Figure 11: AI and Importance



Source: Author’s Elaboration.

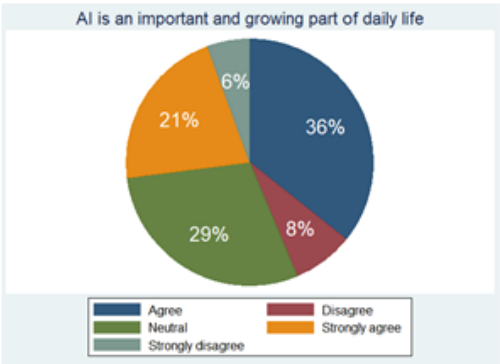
Figure 12: AI and Problem Solving



Source: Author’s Elaboration.

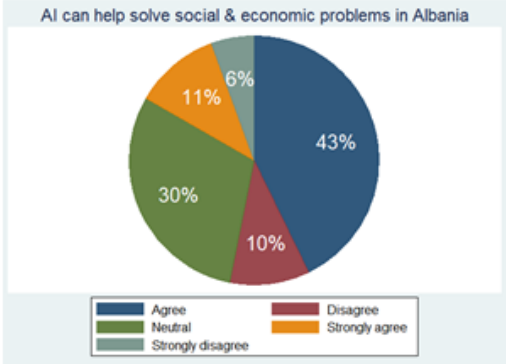
The first chart indicates that 57% of the respondents recognize the importance of AI’s presence in their daily lives, while 29% of the individuals assessed remain neutral towards its increasing integration. Furthermore, 54% of the respondents, which is more than half of them, believe that AI can help solve socio-economic problems in Albania (see Figure 12).

Figure 13: AI and Inequalities



Source: Author’s Elaboration.

Figure 14: Concerns



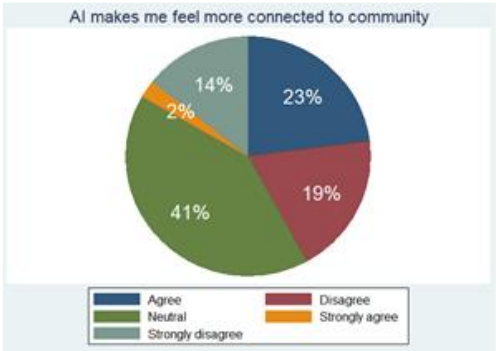
Source: Author’s Elaboration.

Based on the displayed results, more than half of the respondents, around 52% of them, believe that AI could potentially help reduce social and economic inequalities. The results shown on the second chart indicate that approximately 53% of the individuals are concerned about data security and privacy. 28% are concerned about the risk of job displacement, while 17% highlight its unequal use in society.

The data suggests that respondents primarily fall into two dominant clusters, where 37% of them find a positive association between AI and connection to community, and 41% are ambiguous about this (see Figure 15). The results displayed in the second graph indicate that more than half of the individuals, 58%, believe that AI creates independence in daily

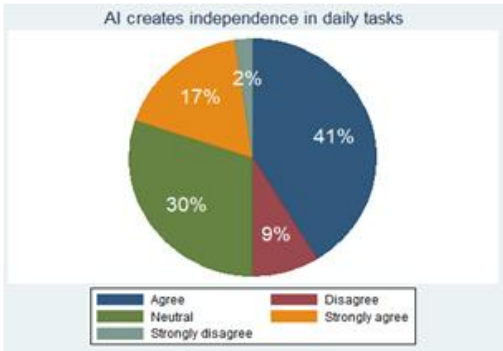
tasks. Reliance on AI technologies is increasing as individuals seek greater autonomy in managing their daily responsibilities.

Figure 15: AI and Community



Source: Author’s Elaboration.

Figure 16: Task Independence



Source: Author’s Elaboration.

CONCLUSIONS

This study focused on Albania to assess the public's knowledge, perception, and awareness regarding the incorporation of artificial intelligence in daily life and society. The sample was predominantly composed of an academically educated society, with a significant majority of respondents being female, and the age distribution concentrated mainly in the working age range of 18 to 44 years. The results revealed a universal and ubiquitous adoption of artificial intelligence in Albania. This paper suggests that Albanian society perceives artificial intelligence as an essential component of daily life, validating its importance in decision-making processes, productivity improvement, time management, enhanced community connection, and overall quality of life. Furthermore, the findings highlight the belief that AI-driven technologies can address social and economic challenges in Albania, thereby reducing existing inequalities in these areas. However, the public has expressed concerns regarding the risks of job displacement, data security and privacy, and unequal access to these resources in society. These findings have both theoretical and practical implications, serving as a benchmark for understanding the current societal position and opinion on AI platforms. The provided results can assist providers of these systems in developing policies and functionalities that strengthen security measures and promote the further adoption of artificial intelligence services.

Conflict of interest

The authors declare that he has no conflict of interest.

Acknowledgement

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EXPLORING THE GENDER WAGE GAP ACROSS THE ECONOMIC ACTIVITIES AND PROFESSIONS IN ALBANIA (2020–2024): AN ANALYSIS OF THE FACTORS DRIVING THIS INEQUALITY

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Abstract

This study explore the gender wage gap and inequalities, during the period 2020–2024 in Albania, based on secondary data. The gender wage gap still exists in Albania, and the purpose of this paper is to study it across the most requested professions and the main economic activities, and also to identify its driving factors. The analysis shows that the division of professions by gender and the undervaluation of professions typically performed by women significantly stimulate gender inequality in the labor market. Through recommendations, we try to suggest public policies that focus on reducing inequalities, especially structural ones, in the labor market.

Keywords: gender wages gap, inequality, labor market, employment, gender equality

JEL: J16, J31, J21, J24, I38, O52

INTRODUCTION

The labor market faces many challenges, and one of the most serious and biggest challenges for this market remains gender inequality, a challenge not only for developing countries, but also for developed ones. One of the most measurable indicators of this inequality is the gender pay gap, an indicator that shows the difference between the average wage of men and women for similar or comparable jobs.

As a country in transition, Albania also faces the challenge of this gap (INSTAT, 2024), despite the fact that Albanian legislation protects gender equality in employment and wages. Empirical data show that women in Albania still continue to be paid less than men, despite the fact that they have the same level of education or similar qualifications. Also, based on data from INSTAT and the General Directorate of Taxes, even in cases where women have higher levels of education, they are still paid less than men in most sectors and most professions. It is even worth noting that this gap is greater in fields such as finance, technology, management and construction, where wages are higher and where women are underrepresented.

The period 2020–2024, influenced by a series of economic and social developments, especially the COVID-19 pandemic, or the increase in the minimum wage, inflation,

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reforms undertaken in the public and private sectors, have influenced the increase in nominal wages, but this has not caused a reduction in gender inequality, which means that economic developments do not automatically translate into gender equality.

The gender wage gap is also very pronounced in the context of professional groups. This is also because women are represented in professions with lower wages and lower hierarchical positions, compared to men (INSTAT, 2024). This constitutes a horizontal and vertical division in the labor market, which directly affects the wage structure and opportunities for career advancement.

The above have led to structural changes in the labor market, in relation to wages by gender, both in the context of economic sectors and in the context of professional groups, therefore exploring the gender wage gap, between sectors and professions, offers an opportunity to better understand gender inequalities in the Albanian labor market.

This paper aims to analyze the trends in the gender wage gap and occupational inequalities in Albania during the years 2020–2024. The analysis of the paper will be based on secondary data published by public institutions such as INSTAT and the Tax Directorate, divided by economic sectors and professional groups. Through this analysis, changes in average gross monthly wages, median wages, minimum wages, as well as the percentage of the gender gap by professions and economic activities will be examined.

This study aims to contribute to the existing literature on gender equality in Albania and will provide practical recommendations for public policies and institutional interventions that can help to narrow the gender wage gap and to increase the representation of women in professions with high economic value.

LITERATURE REVIEW

The gender pay gap is an issue of great importance, and has received considerable attention in the Albanian context as well. According to the literature, despite the Albanian government having undertaken policies aimed at gender equality in the labor market, women in Albania are still paid with lower wages than men, even when their investments in human capital are similar (Blau & Kahn, 2017; Miluka, 2012).

There is a need for even more assertive fiscal policies, with a focus on improving women's participation in the labor market, as well as with the main goal of reducing the gender wage gap. These policies should address the main problems that drive the reduction of women's participation in the labor market, such as childcare, flexibility in work, etc., which would have a positive impact on reducing gender inequalities in Albania (UN Women, 2023).

To reduce the gender wage gap, the existing literature generally suggests the need for cooperation between public policies, business actors and civil society itself to ensure equal opportunities for women and men in the labor market.

RESEARCH RESULTS AND THEIR COMPATIBILITY WITH THE LITERATURE

The following section uses secondary data obtained from the General Directorate of Taxation and INSTAT. The analysis of data for the period 2020-2024 sheds light on the fact that the gender pay gap in Albania is still present, and is not a stable phenomenon but varies depending on economic sectors and professions.

Figure 1 "Gender pay gap per employee by economic activities" in Albania for the period 2020–2024 highlights the gender differences in wages, according to different sectors of the economy.

In the context of Figure 1, the Industry, Energy and Waste Management sector results in high gender gaps in wages, with an average of these gaps of approximately 28% over the five years, reflecting a low participation of women in management or specialized positions. Meanwhile, sectors such as Information and Communication result in an improvement in this aspect, resulting in a reduction in the gap from 12.3% in 2020 to only 5.4% in 2024, which could be an indicator of the fact that digitalization has a positive impact on achieving gender equality.



Source: General Directorate of Taxation, social insurance contributors; INSTAT's calculation

Fig. 1. Gender pay gap per employee by economic activities

Regarding other sectors, such as Professional and Technical activities, we also note cases of negative gaps in favor of higher average wages for women, which may perhaps reflect a higher representation in administrative or consulting positions of women compared to men. In light of the above, we conclude that digital transformation has a positive effect on reducing gender inequalities in the labor market, but it does not have a uniform effect across all sectors. Also, structural interventions such as professional training or the promotion of women to leadership positions have had a positive impact on reducing these differences, especially in sectors with a high and persistent gap.

Figure 2 allows us to analyze some key indicators:

First, if we refer to the trend of wage growth over time, we note that the average gross monthly wage for a salaried employee has increased by about 39% in 3 years. This increase probably suggests an improvement in overall incomes, which may have been caused by stable economic growth, stimulating fiscal policies or the impact of digitalization and improved productivity in some sectors.

Trying to make a comparison between public sector and private sector, the gender wage gap has increased in favor of public sector, for the period 2022 – 2024, with increasing values from +11,407 to +22,705. The above may have occurred due to the increase in wages in the public sector, or due to the fact that the private sector is growing more slowly, which may have occurred due to lower marginal profits or due to the lack of public policy support, such as subsidies.



Source: General Directorate of Taxation, social insurance contributors; INSTAT's calculation

Fig. 2. Average monthly gross wage per employee, median gross monthly wage and approved minimum wage, Q.1.2022-Q.1.2025

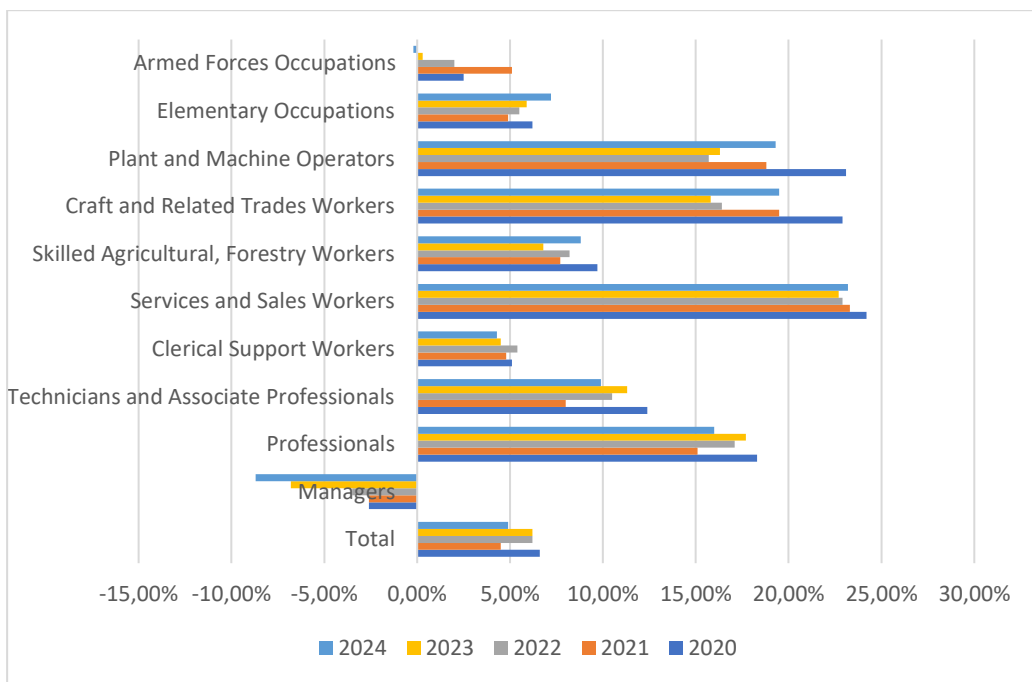
In a comparison between the median wage and the average, inequalities in the distribution of wages are found, since the median is lower, which means that most workers earn less than the average. This may have happened because the increase in wages in high positions has pulled the average up, while the majority of workers are still paid at lower wage levels.

As for the adopted minimum wage, its growth rate is lower than the the growth rate of average wage. For this reason, the minimum wage remains much lower than the average or median wage, which results in an opportunity to increase the minimum wage further, and reflects the need for stronger support policies for low-income workers.

By interpreting Figure 3, we can extend our analysis in several directions:

First, regarding the average gender wage gap (4.9–6.6% in total), it results in a relatively modest, but stable, difference across the economy. This result is consistent with the literature, which acknowledges that despite improvements, the gender gap has not disappeared and often hides structural inequalities by sector or occupation (Blau & Kahn, 2017; Goldin, 2014).

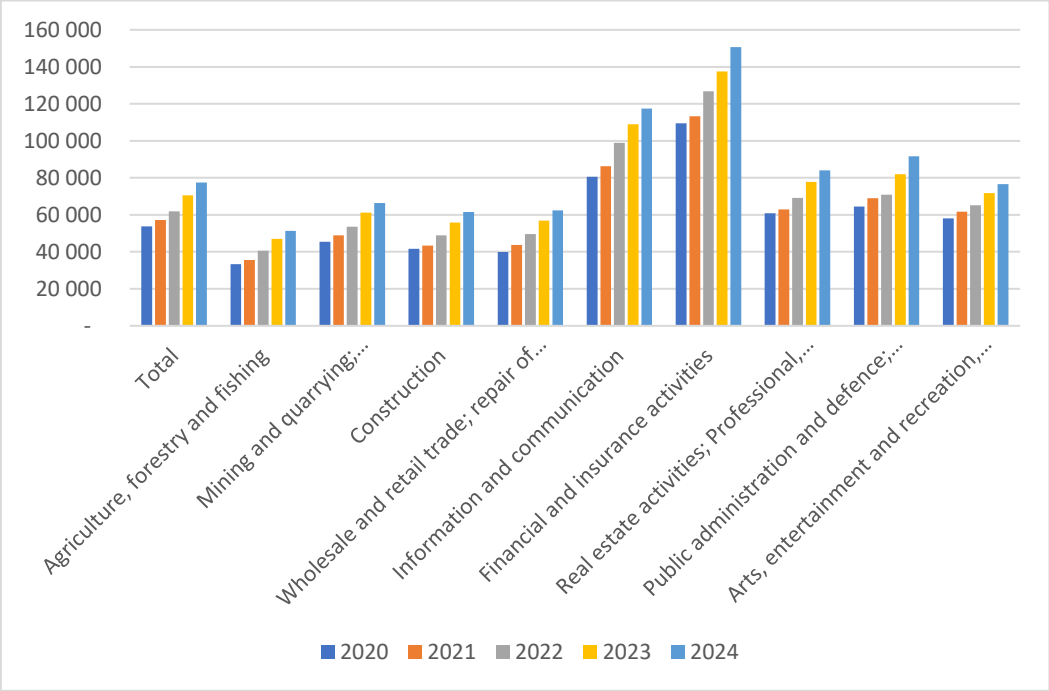
Regarding the specific case of „Managers”, in which women are paid more (with a difference of -8.7% in 2024), we consider it an unusual result, and which suggests that women who manage to occupy managerial positions are perhaps more qualified or selected in a more selective way (Becker, 1985).



Source: General Directorate of Taxation, social insurance contributors; INSTAT's calculation

Fig. 3. Gender pay gap per employee by group occupations and sex

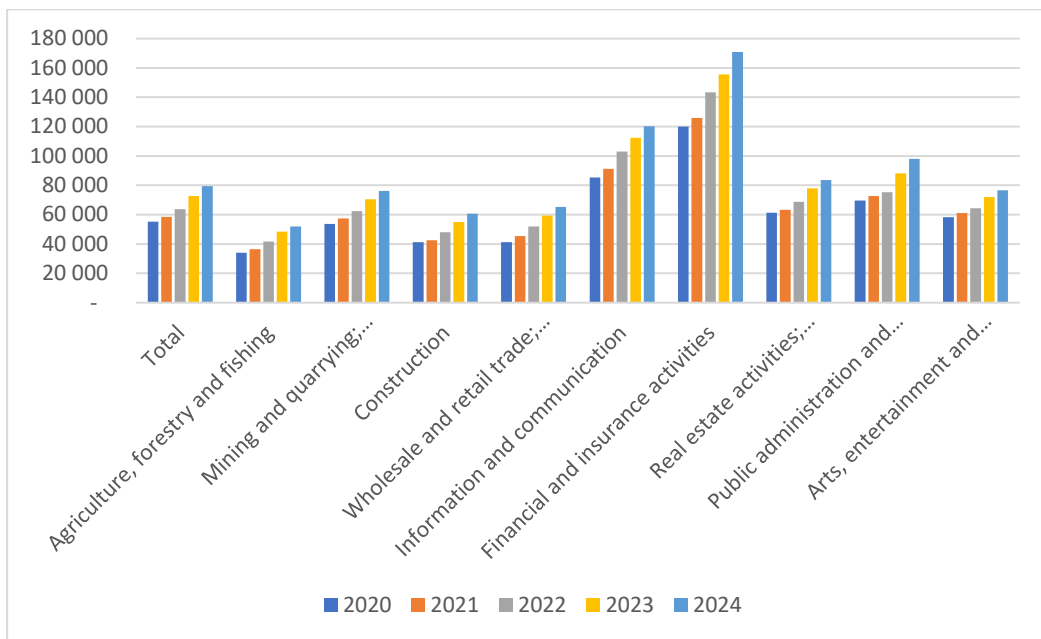
Referring to Figure 3, the groups with the largest gap in favor of men can be listed: Services and Sales Workers (23.2%), Craft & Related Trades (19.5%), Plant & Machine Operators (19.3%). As we note, the largest gap occurs in occupations typically represented by men, and often positive wage differences in their favor come for various reasons such as more rewarding physical work for men, or the dominance of men in higher positions within these groups.



Source: General Directorate of Taxation, social insurance contributors; INSTAT's calculation

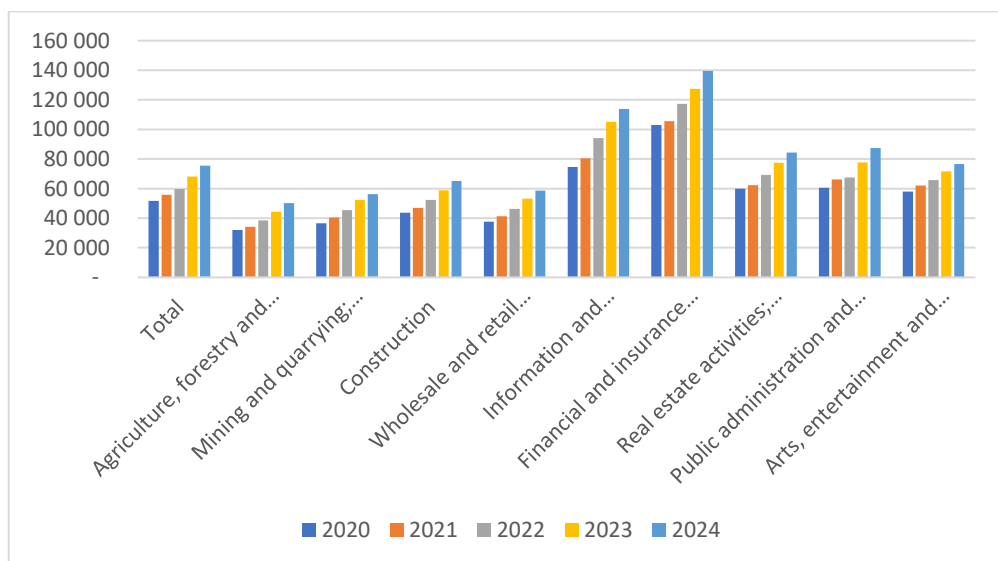
Fig. 4. Gross average monthly wage per employee by economic activities

These results are consistent with the existing literature that asserts the role of technology and the gender divide in manual versus cognitive occupations (Autor et al. 2003). In reference to Figures 4, 5 and 6, we clearly conclude that the overall trend in average wages is increasing by 44.4%, and the increase is stable for both men and women, but men continue to be better paid in most sectors.



Source: General Directorate of Taxation, social insurance contributors; INSTAT's calculation

Fig. 5. Gross average monthly wage per male employee by economic activities



Source: General Directorate of Taxation, social insurance contributors; INSTAT's calculation

Fig. 6. Gross average monthly wage per female employee by economic activities

The results regarding the gender wage gap in context of economic sectors, trying to identify the sectors with the highest gender gap in favor of men are as following:

- Finance and Insurance Sector results with a gap of almost 31,428 lekë in 2024, in favor of men. In fact this is the sector with the largest absolute and relative inequality.
- Industry and Energy Sector with a gap in 2024 of almost 20,032 lekë, which means that technical and managerial professions in these sectors are dominated by men.
- Public Administration, Health, Education Sector, with a difference in 2024 of almost 10,630 lekë, which means that they are traditionally gender-balanced sectors, but management positions (e.g., doctors, managers) remain higher paid and dominated by men.
- Trade and Transport Sector, results with a gap of almost 6,679 lekë in 2024, which is a smaller gap, but it is existing for 5 consecutive years.

Sectors with almost equal or in favor of women's wages are:

Construction Sector, with a difference in 2024 of almost 4,325 lekë more for women.

This gap may be a statistical error due to the small number of women in the sector.

- Arts, Entertainment and Personal Services Sector, with a difference in 2024 of almost zero lekë. It implies gender equality in this sector and a narrow distribution of wages.

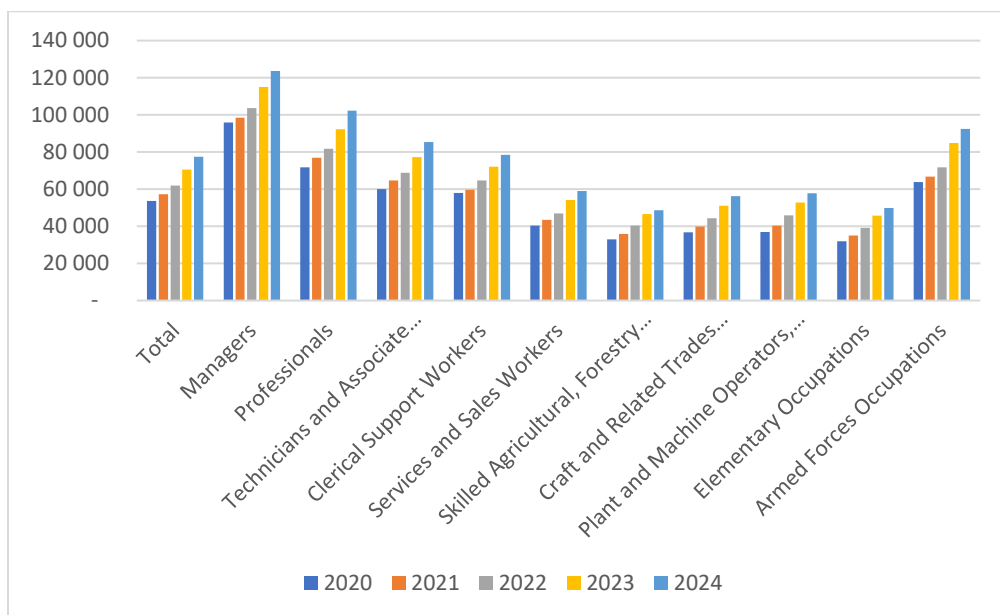
The sector which results with the highest wages in Albania is the Finance and Insurance sector with almost 150,616 lekë in 2024, and it results with wages over 2.9 times higher than Agriculture, Forestry and Fishing, which in fact is the sector with the lowest wage with almost 51,307 lekë. This contrast indicates the polarization of the labor market and the need for balancing policies.

In reference to Figure 7, 8, 9, analyzing the general trend in average wages (2020–2024), it is concluded without question that the gender gap in wages is stable, and men receive higher wages on average every year according to each occupational group.

Regarding the gender gap in wages in the context of occupational groups, we conclude that:

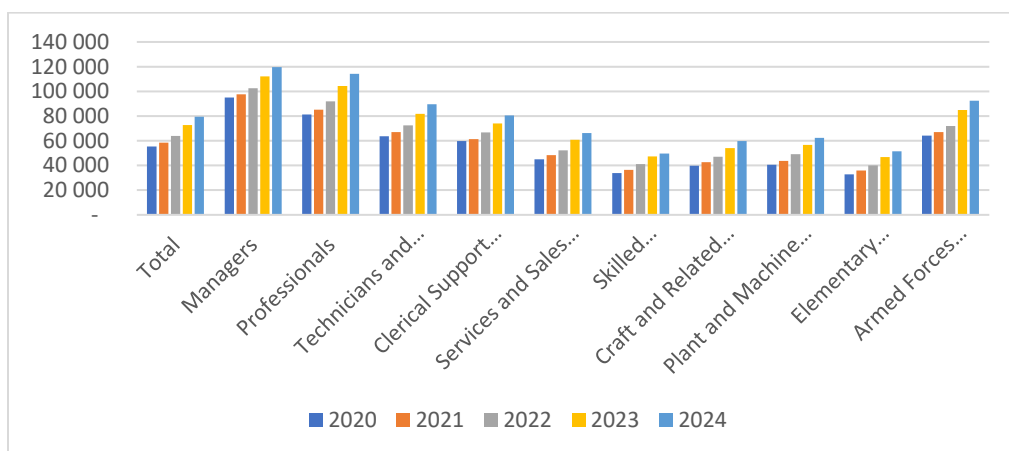
- Only in the profession “Managers” are women paid more than men in 2024, but this is an exception and should be investigated in relation to the number of individuals in this profession.
- The largest gender gap results in service and sales employees, with over 30% in favor of men.

The highest wage by occupation in 2024 results for the profession “Managers” with about 123,638 lek, and the lowest wage results for the profession “Craftsmen and Artisans” with about 56,292 lek.



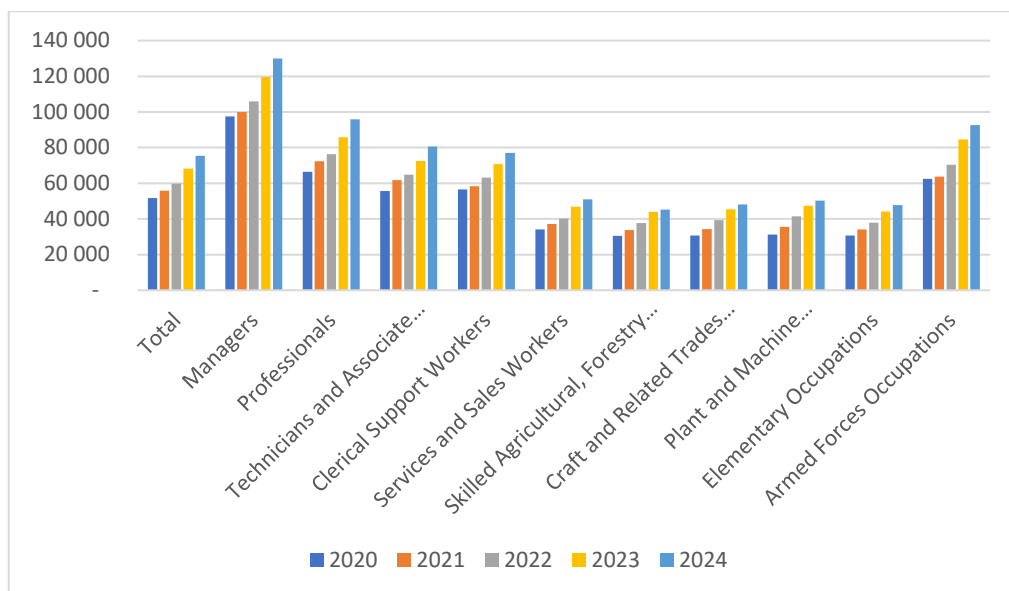
Source: General Directorate of Taxation, social insurance contributors; INSTAT's calculation

Fig. 7. Gross average monthly wage per employee by group-professions



Source: General Directorate of Taxation, social insurance contributors; INSTAT's calculation

Fig. 8. Gross average monthly wage per male employee by group-professions



Source: General Directorate of Taxation, social insurance contributors; INSTAT's calculation

Fig. 9. Gross average monthly wage per female employee by group-professions

We also note that during the period 2020–2024, in terms of professional groups, lower-wage occupations are experiencing faster wage growth, which has contributed to the narrowing of the gap between these occupations compared to those with higher wages, but this fact is not enough to bring equality between them.

The above results are supported by the literature, which suggests that changes in the content of job skills have deepened wage polarization (Autor et al., 2003; Goldin, 2014). The findings in the literature also argue that most of the gender wage gap is the result of gender specialization in the occupation and structural obstacles to women's advancement to higher positions (Blau & Kahn, 2017).

CONCLUSIONS

Through this paper, we have attempted to analyze the gender wage gap in Albania during the period 2020–2024, using secondary data regarding wages by economic sectors, professional groups, and public and private sectors. Based on our analysis, we can conclude as follows:

The gender pay gap in Albania is still present in all sectors and professions, although not uniform. Sectors such as Finance, Information and Communication result with the highest gap, identifying real needs for supportive policies to achieve gender equality.

The public sector offers higher average wages and within this sector itself the gender gap is lower than within the private sector, which indicates that policies applied by the public sector can be more effective in reducing gender inequalities. Meanwhile, gender gap in wages has been increasing between these two sectors, in favor of public one.

The gender gap is more pronounced in professions such as managers or professions of high hierarchical positions, noting the fact that women face obstacles in achieving such leadership positions.

Through this paper we come to the conclusion that public policies are needed with a focus on gender equality in the labor market in Albania, which would also have a positive effect on sustainable economic development.

RECOMMENDATIONS

Some of the recommendations offered by this study include: Government and organizations should undertake continuous and tailored policies to reduce the gender wage gap. Training programs would also be important, focusing not only on the entry but also on the career advancement of women in sectors and professions with high wages, especially in those cases where the gap is high. Digital transformation should also be used to create flexibility in work schedules and its implementation, positively influencing the inclusion of women in the labor market. Also, it should be encouraged the cooperation between the public and private sectors to promote gender equality. Finally, we consider the role that partnerships between government, businesses and civil society can play, which can cooperate to increase the inclusion of women in the labor market and reduce the wage gap.

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BUILDING HUMAN CAPACITY FOR AI-DRIVEN INNOVATION IN GLOBAL BUSINESS

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Abstract

Grounded in decolonial theory and informed by extensive literature, this qualitative study explores a central question: *What forms of human capital and governance are essential for developing countries to effectively adopt and create AI solutions, and to engage meaningfully with regional and global resources?* The paper emphasizes the empowerment of individuals as epistemic agents capable of critical digital literacy, algorithmic discernment, AI oversights, and hypothesis discovery. At the organizational level, it calls for continuous experimentation, collaborative team learning, leadership modeling, aligned human resources policies, appropriate norms and laws, and the creation of supportive environments that foster locally relevant AI solutions.

Keywords: epistemic agency, decolonial theory, digital literacy, AI and human collaboration, internal governance

INTRODUCTION

AI-driven innovation is transforming organizations through varying degrees of automation and augmentation of human performance (Holmstrom and Carroll, 2024). While well-integrated AI within organizational flows can significantly enhance productivity at the firm level, but do not mitigate the broader adverse effects on employment observed at the aggregate level (Necula et al., 2024). Excessive automation caused by current AI development destroys many laborers' lives and reduces the chances of shared prosperity among poor people (Acemoglu and Restrepo, 2022; Klinova, 2024). There is a significant power imbalance between the select few technology companies that control the world AI market and emerging economies and low-income countries. AI devices from these powerful companies will be easily and cheaply rolled out to developing countries and replace many unskilled workers in developing countries (Korinek et al., 2021). These AI labor-saving devices will reduce investment in developing countries and result in lowering their GDP (Alonso et al., 2020).

Developing countries with weak governance tend to overrely on these cheap AI-innovation devices and resist developing their governance capability for ethical and responsible usage of AI (AIFOD Forum, 2025; Alonso et al., 2020; Cerutti et al., 2025; Lam, 2024a; Saba, 2025; Transparency International, 2025). They often fail to incorporate local languages, cultural knowledge, and lived experiences in the AI-solutions and overrely on algorithmic systems, resulting in automatic biases and putting more poor people at risk (Eubanks, 2018). These developing countries experience data colonialism, algorithm colonialism, automation biases and epistemic injustice (Cerutti et al., 2025; Crawford, 2021; Couldry & Mejias, 2019; Fricker, 2007; Ricaurte, 2022; Tacheva & Ramasubramanian, 2023). They risk eroding their own human capital and exaggerating income inequality when these AI

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tools are not wisely adopted. It is essential to consider how AI-driven innovation inequalities intensify and multiply when additional structural inequalities are present.

This paper advocates for the strategic development of locally grounded AI solutions at individual, organizational, national, regional, and international levels to foster a responsible ecosystem and promote shared prosperity. Achieving this goal requires deliberate investment in human capacity and the strengthening of internal governance structures that support ethical and context-sensitive AI-innovation deployment. Grounded in decolonial theory and informed by extensive literature on AI and human development, this qualitative study explores a central question: *What forms of human capital and governance are essential for developing countries to effectively adopt and create AI solutions, and to engage meaningfully with regional and global resources?* I adopt a qualitative approach informed by an extensive literature review and personal reflections collected over three decades of using AI in organizations across the United States, Europe, and Asia. My prior empirical research, which spans from studies on corporate social responsibility of foreign companies in China to diversity, equity, and inclusion practices in universities in the U.S. – provides a social-political-economic foundation for analyzing AI technology and recommending a responsible AI ecosystem (Lam, 2011, 2024b, 2024c; Eshelman et al., 2012).

This article is structured into three sessions. The first section is a literature review about decolonial theory. The second section answers the above research question. The third session is the conclusion.

DECOLONIAL THEORY

Decolonial theory offers a critical lens through which to interrogate the structural and epistemic dimensions of AI. AI is constrained by its epistemological boundaries, serving the interests and values of powerful groups of people at the expense of many lives. AI systems rooted in Western epistemologies increasingly function as mediators of epistemic legitimacy (Miragoli, 2025), often privileging technocratic knowledge while marginalizing local, experiential, and indigenous epistemologies (Mollema, 2025). This epistemic injustice erodes the social recognition of impoverished communities and exacerbates their material deprivation, inaccessibility, and inclusion in working place (Fricker, 2007; Kay et al., 2024). Because AI models are trained on narrowly curated datasets for predefined tasks, they are ill-equipped to address situations not reflected in the training data (Sheikh et al., 2023). As a result, when organizations adopt AI-driven innovations without simultaneously revising their policies, ethical standards, training programs, and workflows, they risk reinforcing existing structural inequalities and perpetuate historical, economic, and political biases.

Decolonial theory is adopted to offer critical foresight for designing contextually appropriate AI governance models aimed at advancing shared prosperity (Mohamed et al., 2020). Meaningful reforms can be introduced to resist the colonial logics embedded in AI systems, re-center human dignity, and promote a liveable planet. Extending this critique, Mesa-Vélez (2025) proposes a feminist-decolonial model of governance that resists colonial hierarchies of knowledge and extractive data practices by foregrounding relational ethics. A more just and inclusive digital environment must be cultivated to deal with AI-induced

adversities and to subsequently recover from these adversities. As Png (2024) highlights, actors from the Global South must be empowered to challenge exclusionary governance structures, contribute contextually relevant alternatives, and critically interpret AI harms through locally embedded knowledge systems.

ANSWER TO THE RESEARCH QUESTION

The objective of investing in human capital practices is to empower critical digital literacy, develop the process of integrating AI into organizations, cultivate more reflective and learning communities, and develop a better governance system by leveraging national, regional, and international resources. When individual epistemic agency is empowered, the voices of marginalized majorities can reposition them from the periphery of global technological discourse and governance to the center (Fricker, 2007; Mesa-Vélez, 2025; Spivak, 1988). Human capital development at the individual level requires more than technical proficiency; it demands the cultivation of critical digital literacy, a foundational component of human capital development. Critical digital literacy is essential to empower local agents to incorporate their local knowledge and to decolonize AI epistemic mechanisms. Local people must know how to cocreate with AI and oversight AI while they interrogate the algorithms that increasingly govern their epistemology of realities. By equipping individuals with the ability to interrogate the power structures embedded in AI systems, societies can better navigate the ethical, economic, and governance challenges posed by emerging technologies.

INVEST IN HUMAN CAPITAL AT THE INDIVIDUAL LEVEL

Individuals must develop critical digital literacy and develop critical awareness of how AI technologies construct and influence self-identity, social relations, and shared cultural narratives. Thus, human beings must remain acutely aware of the complex interplay between artificial intelligence and the social, economic, political, and historical contexts that shape and sustain it. It is imperative to safeguard foundational human values and critically examine practices that undermine our shared humanity. As AI continues to influence our identities and expectations, individuals must be empowered not only to scrutinize the algorithms that increasingly govern daily life, but also to actively report their misuse and contribute to the development of ethical AI solutions. They know the complex and deep consciousness cannot be replaced by AI (Chalmers, 1995) and are willing to develop skills of managing multiple consciousness and embrace their own relational becoming (Vaill, 1989). The richness of human experience – empathy, hatred, compassion, love, suffering, purpose, subjectivity, values, hope, regret, and more – distinguishes us fundamentally from the AI artifacts we create. Therefore, we must reaffirm core human values such as mercy, dignity, and authentic human connections that can easily be denied by AI based on probabilistic models and optimization algorithms tailored to specific human preferences (Russell, 2022; Tasioulas, 2022).

Recent research by Hosseinioun et al. (2024) underscores that human capital is not merely a collection of isolated skills, but a nested network of interdependent competencies.

This insight is crucial for AI-driven innovation, which often demands advanced, specialized skills built upon foundational ones. They said, “most valuable skills are often embedded with specific domains and require not only cumulative learning but also prerequisites to unlock.” Individuals need to develop skills of discovering hypothesis during uncertainty and prompting AI through questioning, differentiated search platform and various human-guided AI partnership (Boussieux et al., 2024). They are encouraged to know why they need to learn some fundamental skills that can be automated. They should treasure the opportunities to learn how to judge and become mature in their learning. They avoid just being consumers of mass information and losing the opportunities to learn now automated tasks. They should understand that the automation of a subset of tasks will reduce productivity in the remaining tasks. This is called the losing economics of scope (Acemoglu, 2024). When the economics of scope is important, human beings cannot acquire knowledge from performing certain automated tasks and transfer their knowledge to other tasks to increase productivity.

They also understand the intrinsic meaning of work and implement the moral imperatives of leadership. Individual leaders need to be humble and embrace our learned ignorance and develop capacities to imagine and judge large quantities of information beyond AI epistemology boundaries. Individually, they should know who they are (i.e., personhood), allow themselves to practice mindfulness in the present moment, and meditate (Eshelman et al., 2012). They ought to know how to empty out of the information provided by AI and fine-tune their skills and responsiveness, and grow to deliver consistent results across various situations regardless of AI datasets. They should enjoy the process of practicing and seem to be effortless and non-deliberative spontaneity (i.e., *wu-wei* state). They respect our existence of being humans and expect to become fully human through the practice of *wu-wei*. These practitioners realize that precision and optimization of human preferences in the AI system are not our human ethics. They provide more time for themselves and their followers to think and not develop automation biases. Leaders need to practice meditation in silence and focus on the present moment through mindfulness, and then invite the realities to reveal themselves. When they practice bringing their full selves to the situations, they will discover the particularities of the situations that have seldom been addressed.

INVEST IN HUMAN CAPITAL AT THE ORGANIZATIONAL LEVEL

Necula et al. (2024) examined 233 employees across various industries in Europe and affirmed that “*strategic AI integration, along with targeted training programs and ethical frameworks, is essential for maximizing AI's economic potential.*” To realize this potential, it is crucial to cultivate a supportive ecosystem for the development and deployment of AI technologies that integrate with existing or evolving workflows. Leadership plays a pivotal role in this transformation. By guiding teams to experiment and engage with both local and global knowledge systems, leaders can empower individuals to co-create AI solutions that are contextually relevant and socially responsible. Furthermore, leaders foster innovation by encouraging engagement with diverse networks, facilitating cross-industry dialogue, and orchestrating collaborative AI team learning. They also help align human resource

policies with emerging norms and legal frameworks, thereby cultivating collective consciousness for shared prosperity (Bankins et al., 2024). Responsible AI ecosystem in organizations must go beyond performance metrics and uphold core values such as accessibility, equity, openness, and inclusion (Dignum, 2021, 2022). Grassroots epistemic engagement can drive bottom-up reform and shift societal mindsets, particularly in those countries with weak governance (Klinova, 2024). Stakeholders in the community join the openly available resources to oversight AI when these AI models are becoming bigger and making similar mistakes (Goel et al., 2025). They keep on interrogating the embedded interests of dominant technological powers and leverage on national, regional and international resources to improve their AI governance. Stakeholders are equipped with the knowledge, tools, and organizational structures – such as ethics committees, open-source audit platforms, and inclusive data governance policies – these societies can gradually establish frameworks for transparency and civic engagement, even in the absence of robust regulatory enforcement. Stakeholders will often demand that individual developers integrate ethical and legal issues much earlier in their design stage, and for organization users to implement quality assurance and data governance policies.

Countries with limited technological infrastructure must actively cultivate domestic expertise in AI ethics, regulation, and policymaking. These efforts must be complemented by international cooperation and strategic resource-sharing to accelerate digital capacity building, craft inclusive AI strategies, and actively engage in global multilateral dialogues (OECD, 2019, 2024a, 2024b, 2025; United Nations, 2024, 2025; World Economic Forum, 2025a, 2025b). By leveraging existing global ethical AI frameworks like those developed by the OECD and the United Nations, and by expanding regional and international collaboration, countries can move from peripheral observers to influential contributors. To ensure equitable outcomes from AI-driven transformations, inclusive development forums and robust social protection policies should be prioritized to support individuals displaced or re-skilled by automation (Geiger & Iaia, 2024; Lee, 2024).

Policy-makers and regulators are recommended to introduce all technical, social, economic, and scientific dimensions of AI systems to society (Bommasani et al., 2023) through the following five key tasks: clarify what AI is and focus on actual risks and opportunities (i.e., demystification); create a functional ecosystem to make AI work (i.e., contextualization); involve diverse stakeholders from civil society to address relevant values and interests affected by the use of AI technology (i.e., engagement); develop a directive framework (i.e., regulation); and engage wisely with other global actors (i.e., societies) (Sheikh et al., 2023). These five tasks steer the process of co-development between technology and society. Furthermore, many countries are encouraged to adopt decolonial theories as a means to resist the epistemic violence perpetuated by current AI systems and to develop their best AI governance system that can promote shared prosperity. When they adopt AI principles or guidelines proposed by influential international bodies such as the OECD and the United Nations, they need to increase their participation capacity in the global AI governance and contribute contextually relevant alternatives and locally embedded knowledge.

CONCLUSIONS

Grounded in decolonial theory, this research urges leaders to reconsider the integration of evolving AI systems into existing social, economic, and political systems already marked by deep disparities. The colonization of AI risks intensifying existing inequalities, particularly in countries with weak governance. AI must be reimagined within an alternative ecosystem that fosters shared prosperity and dismantle the entrenched power asymmetries between dominant technology corporations and developing countries. Thus, investing in digital literacy and participatory governance can challenge data and algorithm colonialism and automation biases, particularly in countries with poor governance. A responsible AI ecosystem will emerge through the cultivation of human capital and the empowerment of local communities. New norms of AI accountability, transparency, and responsibility will be established when there are more reflective community practices in organizations. Local people must know how to cocreate with AI and oversight AI while they interrogate the algorithms that increasingly govern their lives and epistemology.

In summary, the deliberate cultivation of human capital – paired with the strategic mobilization of accessible regional and international resources – constitutes a vital imperative for developing nations aiming to fortify governance infrastructures and build enduring capacity to confront and recover from AI-induced innovation inequalities. A responsible AI ecosystem that promotes shared prosperity is achievable in countries with weak governance structures. To realize this, it is essential to educate people with digital literacy and cultivate a community-driven, reflective system within organizations. Institution policies need to enable individuals and organizations to develop their own relevant AI-innovations and leverage on regional and international resources. To ensure the responsible and effective use of AI-innovation in global business, it is essential to cultivate robust ecosystems that empower local epistemic agencies and reflective learning communities in various organizations.

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ETHICAL IMPLICATIONS OF AI IN HRM: A COMPREHENSIVE OVERVIEW

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Abstract

The integration of Artificial Intelligence systems in Human Resources procedures has been associated with a restructuring of the hiring process, employee management, and performance evaluation. However, the use of AI is also associated with many challenges, including the ethical use of these systems. The process of automating human resource management through the use of AI systems certainly provides effective and objective results. Still, on the other hand, it is also associated with questions about whether these systems make a fair and transparent assessment and, above all, ensuring data privacy. The study provides an overview of the ethical use of AI in human resource management systems, placing emphasis mainly on preserving data privacy, reliability, and transparency. This study emphasizes the need to adhere to ethical practices when using AI systems in human resource management in order to provide reliable and fair data management.

Keywords: Artificial Intelligence (AI) Data Privacy
Human Resources Management (HRM) AI Systems

JEL: O3

INTRODUCTION

Human Resources are those organizational units that directly impact building a work culture in the company, that create the spaces for a qualified staff, and define the boundaries of work ethics. They implement a set of mechanisms that direct all aspects of Human

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Resources Management (HRM), from the recruitment process to performance management and evaluation (Tadesse Bogale and Ayenew Birbirs, 2023).

Technological developments in recent years, among other things, have conditioned Artificial Intelligence integration into HRM practices. The integration of AI systems, through process automation, redefinition of roles in the company and influence on decision-making processes, has led to organizational restructuring (Chhatre, Rohan Chhatre and Singh, 2024). Through Natural Language Processing (NLP), Machine Learning Algorithms (ML), and predictive analytics, AI systems have fundamentally transformed traditional HRM practices (Benabou and Touhami, 2024).

AI integration is also associated with a series of challenges and negative effects. The approach that employees have towards the integration of AI systems in the company, among other things, is also related to the level of trust they have for a fair and accurate assessment by AI systems (Bankins *et al.*, 2022). The perception by employees that AI systems are not able to make a fair assessment can be associated with a decrease in their level of performance at work, and also with self-esteem problems (Bankins *et al.*, 2022).

This article highlights the sense of uncertainty associated with the privacy and ethical use of data from AI systems. He points out that, regardless of the need for automation through AI systems, human influence in human resource management practices must be consistently present.

ETHICS AND HUMAN RESOURCE MANAGEMENT

Ethical issues in HRM can be addressed in different areas. In all cases, it should be considered that not every practice affecting the development of the company's interests constitutes an ethical practice. Studies implicate different aspects of ethical problems in HRM such as safety in the workplace, data privacy, equity and equal opportunity, supervision, training and performance evaluation (Ekuma *et al.*, 2015).



Source: (Naithani, 2022)

Fig 1. Conceptual analysis of Ethical Issues in Human Resource Management

In these conditions, HRM acts as the main regulator to guarantee that all issues related to ethics are fulfilled. HRM must ensure that employees receive the appropriate evaluation and reward according to the policies approved by the company's board of directors, regardless of religion, race, age, gender, disability or political beliefs. On the other hand,

the recruitment process is a challenge in itself that HRM departments face. Cases of applicants placing false information on their resumes, hiring relatives, applicants who have a mixed profile and not a specialization in a specific profile, are some elements that make it difficult to maintain ethics in the recruitment process (Naithani, 2022).

Privacy issue is another aspect closely related to ethics. As long as the lifestyle and personal choices do not violate the employee's work integrity, then HRM must guarantee that the employee's privacy is not violated. As for safety and health at work, it is a big alert at any time. Dismissal is an ethical element that is also very delicate. In situations of having to leave work due to the organizational restructuring of the company, it is not considered an unethical action. Under the conditions that the actions are carried out on a fair basis and equal treatment, they will be considered as ethical (Naithani, 2022).

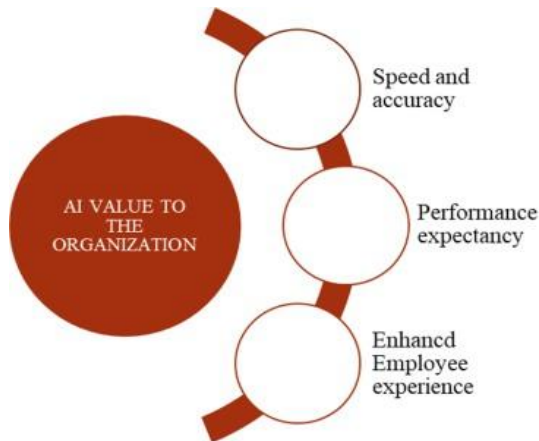
AI-DRIVEN HRM

AI systems offer a tool to further enhance skills and manage time more effectively (Bankins and Formosa, 2023). By integrating AI systems into HRM practices, the recruitment process was improved while avoiding subjective choices and also made it possible to manage performance more effectively and efficiently (Yadav, 2025).

The ability of AI systems to analyze a very large amount of data in a very short time, turns them into a possible potential to be adapted by companies. Through data analysis, AI systems are able to generate performance evaluations, which can also be used as feedback for possible training to improve staff skills (Ghedabna *et al.*, 2024).

AI systems algorithms are able to analyze applicants' resumes, selection criteria, job descriptions, and thus choose the applicant who's most suitable for the vacant position (Feng and Ahn, 2024). In terms of performance management and the decision-making process, AI systems are able to evaluate employee performance, giving feedback also regarding to the possible trainings that each employee should undertake to avoid the gap between skills and technological developments (Du, 2024). Also, automating processes to handle routine questions through chatbots, offers the opportunity to manage time more effectively for tasks that require more commitment (Du, 2024). Another advantage of integrating AI systems into HRM practices is the automation of the employee salary and reward system. Through the ability to analyze data, AI systems are able to identify the parameters for the calculation of salaries and also determine the fulfillment or not of the bonus benefit criteria (Budhwar *et al.*, 2022). AI systems are also able to generate reports to evaluate salary levels compared to the market and make predictions of employee stability depending on market demands and promotions. This is an added value because it helps HRM identify practices to ensure employee stability (Lukaszewski *et al.*, 2024).

The use of chatbot is also seen as an effective way for initial training of employees on standard issues. In addition, through the use of AI tools, it is possible to automatically plan interviews, translated into good time management (Sachan *et al.*, 2024).



Source: (Anshima, Bhardwaj and Sharma, 2023)

Fig. 2. Value creation to the organization by AI

AI-DRIVEN HRM: ETHICAL IMPLICATIONS

Human Resources (HR) is the most important asset of a company, and as such, its emotional stability must be ensured, among other things (Balu, 2022). In addition to the standard practices that human resource managers must follow to complete the recruitment process, they must also implement practices that guarantee the integrity of employees in the company. Employees have the right to data privacy and ethical use of their data by human resource management systems, timely and appropriate evaluation, and the right to training and promotion (Balu, 2022).

The integration of AI systems into HRM practices has certainly facilitated the recruitment process, performance management, decision-making process, and organizational restructuring of roles in the company (Bhasin and Krishna, 2025). But there is a contradiction regarding the impact of AI systems. They have contributed to improving HRM practices, and on the other hand, they are accompanied by many challenges, both in implementation and in terms of privacy and ethical use of data (Dwivedi, 2025).

The challenges faced by employees due to the integration of AI in HRM practices are related to the role shifts brought about by the automation of processes and the issue of data privacy and fair evaluation. AI systems should be equipped with mechanisms that provide transparency regarding data usage and the possibility of reviewing the evaluation results in cases where they are considered unfair (Azhar and Imran, 2024). On the other hand, companies should invest in training programs, in such a way that employees can adapt to the demands imposed by the integration of AI. AI integration should be seen as an opportunity to improve the work process and not as an approach that causes uncertainty among employees (Uddin, 2023).

AI systems operate on trained data sets. If these data sets are equipped with information that emphasizes even more prejudices and discriminations, then we will have a problematic AI system that does not provide the appropriate evaluations, thus leading to the failure of decision-making processes in the company (Pearl and Mask, 2024). On the

other hand, a big concern that affects the level of trustworthiness of employees is transparency. AI systems have been categorized as "black box" systems. As such, their results are difficult to understand how they were generated, considering in this way their transparency as a matter that leaves room for discussion (Pearl and Mask, 2024). Data privacy is another key point that affects employee trustworthiness. AI systems often need a lot of information, violating the right to privacy to some extent. It is very important to guarantee not only the preservation of data privacy but also their ethical use (Pearl and Mask, 2024).

In these conditions, despite the need for adaptation regarding decision-making by automated systems and the need for transparent algorithms, it is necessary for HRM practices to implement General Data Protection Regulation (GDPR) (Gaikwad and Malpurkar, 2025).

According to the ISO standard, information security must be guaranteed at a technical, procedural and organizational level (Jabrayilova, 2015).

Algorithmic bias and the issue of privacy and transparency are very critical points for the decision-making process. The nature of the data sets used by AI systems may be the cause of racial or gender discrimination. On the other hand, AI systems present the risk of using unauthorized information, thus violating the right to privacy. As for the algorithmic evaluation, it is also fundamental both in the recruitment process and in the performance management process. Employees must be aware of the evaluation criteria and the evaluation process to respect the right of a transparent evaluation (Jarrahi and Sutherland, 2019).



Source: Created by authors (Anshima, Bhardwaj and Sharma, 2023)

Fig. 3. Challenges posed by AI

the displacement of roles resulting from the automation of processes through AI systems. On the other hand, there is also the challenge of data privacy, transparency, prejudice and discrimination that complicate the access and trustworthiness of these systems. Addressing and implementing practices to avoid these issues is the first step towards

facilitating the integration of AI systems into HRM practices, while ensuring privacy and ethical use of data.

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DIGITAL TRANSFORMATION AND EMPLOYEE PSYCHOLOGY: A LITERATURE REVIEW ON STRESS, ADAPTABILITY, AND LEARNING IN EUROPEAN ORGANIZATIONS

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Abstract

Digital transformation is reshaping European workplaces, bringing automation, AI, and new workflows. While enhancing efficiency, these changes pose psychological challenges for employees, affecting stress, adaptability, and learning. The aim of this study is to conduct a literature review that synthesizes research from organizational psychology, management, and European case studies to explore these impacts. Findings show that high cognitive demands and uncertainty increase stress, whereas training, support, and resilience promote adaptability and skill development. The review highlights gaps in understanding the combined effects of digitalization on employee well-being and provides practical insights for managers and policymakers to design strategies that balance technological advancement with psychological support in European organizations.

Keywords: Digital Transformation; Employee Psychology; Stress and Adaptability; Workplace Learning; European Organizations

I. INTRODUCTION

In today's digital economy, European companies are experiencing rapid digital transformation (DT), to keep up with competitors. The European Union is working on digital technology (Digital Europe Programme, Industry 5.0) to increase the use of digital technology, including AI, Automation, Data Analytics etc. These new technologies will bring more efficiency and innovation but will also change how we work and how we experience our jobs creating psychological & social challenges (European Commission, 2024).

Digital Transformation (DT) has two sides. One side offers more flexibility, opportunities for learning and innovation. The other side creates an environment where the work is more complex, ambiguous, and stressful, which may lead to employee resistance or stress (European Commission, 2024). As European organizations continue to navigate the pos and cons of DT, the psychological factors related to employee behavior, particularly stress, adaptability and learning – become critical determinants of whether DT will be successful. This review draws from four theoretical frameworks to understand how European organizations and their employees mentally adapt to the changes brought about by DT specifically through the JDR model, Adaptation and Coping Theories, Organizational and Continuous Learning Theories, and Change Management Models.

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2. THEORETICAL FRAMEWORK

2.1. Digital Transformation and the European Work Context

The European continent provides a very special context to study how employees and organizations respond to DT. Because of the significant differences between labor markets, digital infrastructure, and organizational cultures across the continent; some countries (e.g., Norway, UK, Netherlands, Germany) and regions (e.g., Finland, Sweden, Denmark) have both highly developed digital infrastructures and strong social welfare systems, and therefore place great emphasis on employee well-being and employee involvement during periods of organizational change (Eurofound, 2024). Other parts of the continent (e.g., Italy, Greece, Poland, Romania) experience structural and skill-based barriers to adopting new digital technologies, thereby increasing the psychological burden of rapid organizational change (OECD, 2024).

Studies conducted in recent years demonstrate the above trends. Gallup's cross-EU survey (2024) showed that approximately 38 percent of respondents experienced a rise in "digital stress" connected to constantly changing technologies, particularly in the financial sector, healthcare and government. Klonek et al.'s (2023) research in Germany revealed that "digital job demands," namely constant connectivity and increasing complexity, were positively correlated with burn-out risk, whereas digital resources like autonomy and access to IT training reduced stress levels.

2.3. The Job Demand–Resources Model: Understanding Digital Stress

The Job Demand Resources (JDR) model (Bakker & Demerouti, 2007), establishes the foundation for how digital transformation impacts employee stress and motivation. This model illustrates that each job has demand characteristics that drain energy and resources and that each job also has resources that help energize and motivate. As an example, in the context of digital transformations, digital job demands include continuous learning needs, information overload, and rapid technological changes. Digital job resources would be supportive leadership, training opportunities, and employee autonomy. Studies in Europe have recently confirmed this model as well (Klonek et al., 2023; Chen et al., 2025). Those studies revealed that digitalization increases both job demands and job resources and creates tension which can negatively affect the well-being of employees or stimulate their engagement. For example, if employees have access to sufficient resources (e.g., skills training and manager support), they are likely to see digital change as motivating and stimulating. Conversely, without those resources, the same demands will result in technostress and disengagement. Therefore, the JDR model supports the notion of why the psychological effects of DT vary based upon organization, and it highlights the need for resource allocation in European workplaces that support social dialogue and employee involvement.

2.4. Adaptation and Coping Theories: Psychological Responses to Change

Although the JDR model describes the structural aspects of digital transformation, Adaptation and Coping theories (Lazarus & Folkman, 1984) describe the psychological mechanisms of individuals in response to digital transformation. Coping is defined as a dynamic process that includes cognitive appraisal and behavioral regulation. Depending on how employees perceive digital transformation, they will view it as a challenge which will prompt

them to use proactive adaptation and learning, or as a threat which will prompt defensive responses such as avoiding digital transformation or resisting it.

Studies that were conducted in recent years in European contexts show that adaptive coping is important. Lee and Kim (2024) found that technology readiness positively predicts career adaptability and job satisfaction in public organizations that are experiencing digital change. Likewise, Van der Westhuizen et al. (2024) showed that a high level of coherence (comprehensibility, manageability, and meaningfulness), reduces technostress and promotes psychological well-being among employees who are adapting to new Industry 4.0 technologies. Organizations in the European Union that provide adequate support to their employees (e.g., those in the Nordic countries), tend to create conditions that encourage adaptive coping by providing psychological safety, opportunities for developing skills, and participative decision-making processes.

Therefore, adaptation and coping theories provide the micro-level explanation for how employees handle digital stress: employee adaptability appears to be the primary psychological resource that enables employees to transform perceived threats to digital transformation into opportunities for personal and professional development.

2.5. Organizational Learning and Continuous Learning: Developing Collective Capability

Organizational Learning and Continuous Learning theories describe how employee adaptation aggregates into collective capability at the meso and macro levels. Argyris and Schon's (1978) distinction between single-loop and double-loop learning is especially relevant in digital contexts. European companies increasingly engage in double-loop learning (questioning and re-defining assumptions) to stay competitive in rapidly changing environments.

European Small and Medium-Sized Enterprises (SMEs) research (Rahim et al., 2024) demonstrates that organizational learning mediates the relationship between digital transformation and resilience, specifically where company leaders encourage knowledge sharing and experimentation. Likewise, research in the Spanish and Italian hospitality and manufacturing industries (Marques & Ferreira, 2024) demonstrate that learning culture greatly increases digital performance and decreases employee resistance to change. Initiatives supporting continuous learning (e.g., those provided under the European Union's Lifelong Learning Program) maintain employee adaptability and enable sustainable change over time.

Organizational learning serves as the link between employee adaptation and the long term capacity of organizations. Organizational learning converts short-term coping into the systemic patterns of reflection, experimentation, and renewal required for maintaining digital competitiveness in the unpredictable European economic environment.

2.6. Change Management Models: Designating Digital Adaptation

To facilitate adaptation and learning, change management models (such as Kotter's (1996) eight step process, and Hiatt's (2006) ADKAR process) serve as the necessary structures for guiding digital transformation. These models represent formalized processes for facilitating employee adaptation to digital change and emphasize awareness, desire,

knowledge, ability, and reinforcement. Recent European research suggests that using these models enhances employee commitment and reduces resistance to digital transformation.

For example, Ahmad et al. (2024) discovered that financial institutions employing the ADKAR process during digital transformation exhibited much higher digital readiness and adaptability than those that did not. Additionally, a cross-national study by Oreg and Berson (2024) indicated that transformational leadership, an element of successful change management, fosters trust and openness to digital change across European organizations.

In practice, these models provide managers with guidance on linking technological initiatives with human factors. They help assure that digital transformation is viewed as a planned, collaborative, and communicated process rather than as imposed disruption. When combined with learning and coping frameworks, change management models convert digital stress into productive momentum for development.

2.7. Integrative Perspective: From Stress to Learning

Combining the JDR Model, Adaptation/Coping Theories, Organizational Learning Theories & Change Management Frameworks creates a comprehensive model of employee psychological behavior during the Digital Transformation process. While the rapid demands of digitalization can create an environment of high levels of stress for employees; when coupled with sufficient support mechanisms and/or through adaptive coping strategies, those same demands will facilitate the learning and development of the employees. These collective forms of employee learning/development (i.e., through the continued application of continuous learning and structured change management) scale up to enhance the overall resilience of an organization.

Within the context of European organizations which have well-established employee participation models, social dialogue systems and well-being initiatives, this integrated theoretical framework illustrates the ways in which European organizations' existing social/cultural strengths can be leveraged to develop a human centered approach to their digital transformations. While stress itself does not have to be viewed as solely negative, when individuals have access to sufficient resources and use adaptive coping strategies to buffer against such stressors, they are able to utilize the experience of being under stress to generate new ideas and learn. Therefore, the critical component here is creating work environments that equally emphasize both the technological advancements of the digital transformation, while also emphasizing the personal growth and development of the employees within the organization.

3. METHODOLOGY OF THE LITERATURE REVIEW

3.1. Study Design

A systematic-narrative literature review is used to investigate how digital transformation (DT) impacts employee psychology, particularly regarding stress, adaptability, and learning for European-based organizations. The systematic review includes all peer-reviewed articles and other empirical studies that have been published between 2020-2025. These studies reflect an increase in digitalization post-COVID-19 pandemic and are aligned with

European Union's DT policies, notably the Digital Europe 2030 plan. A systematic approach was implemented to ensure transparency and replicability and a narrative synthesis was used to allow for conceptual integration across various theoretical frameworks, particularly the Job Demand Resources (JDR) model, Adaptation and Coping theories, Organizational Learning theories, and Change Management models.

3.2. Search Databases and Strategy

The literature search was completed between June-October 2025 in a variety of multidisciplinary academic databases and institutional repositories to provide adequate coverage of peer-reviewed and policy-related sources. The databases included:

Peer-reviewed journal articles in the areas of management, psychology, and organizational behavior, Scopus and Web of Science (WoS). Empirical studies on digital transformation and organizational learning, ScienceDirect and SpringerLink. HRM and change management studies, Emerald Insight and Taylor & Francis Online. Recent preprints and open-access research on digital transformation in Europe, Google Scholar and arXiv. Official European reports and policy documents on digitalization and employee development, Eurofound, OECD iLibrary, Cedefop, and Eurostat. Occupational health and technostress studies relevant to employee wellness, PubMed.

Backward and forward citation tracking was also completed for highly-cited articles, e.g., Bakker and Demerouti (2007); Tarafdar et al. (2019), as well as recent European-focused studies, e.g., Klonek et al. (2023); Mandl (2024); Van der Westhuizen et al. (2024).

3.3. Search Terms

Search terms were developed using Boolean operators and tailored to the syntax of each database. The combination of core keyword terms reflects the primary constructs of the research question:

Core Construct Terms: "digital transformation," "digitization," "Industry", "digitalization in Europe." Psychological Dimensions: "employee psychology," "occupational stress," "technostress," "adaptability," "career adaptability," "coping," "employee well-being." Learning and Change: "organizational learning," "continuous learning," "learning culture," "change management," Geographic Filter: "Europe," "European organizations," "EU workforce".

3.4. Selection of the Inclusion/Exclusion Criteria

To limit the scope of this literature review and to ensure the results remain relevant, inclusion and exclusion criteria were established for selecting studies.

Studies meeting the inclusion criteria include those published between 2020 and 2025, reflecting the rapid growth of digitalization post-pandemic. Peer-reviewed journal articles, empirical reports, and high quality grey literature, e.g., Eurofound, OECD, Cedefop, and Eurostat reports. Studies focused on European organizations or provided comparative European data. Research that addresses at least one of the following psychological dimensions: stress, adaptability, learning, or change management in the context of digital transformation. Theoretical or empirical studies referenced one or more of the guiding

frameworks, JDR model, Adaptation/Coping theories, Organizational Learning, or Change Management.

Studies excluded from consideration include those that do not have a European focus or did not specify geographic focus. Articles that focus exclusively on technical or financial aspects of digital transformation without assessing psychological or human centered elements. Studies published before 2020, except as foundational theoretical work, e.g., Bakker & Demerouti (2007); Lazarus & Folkman (1984). Studies that are written in languages other than English, due to resource limitations in translating. Duplicate entries, conference abstracts, and non-scholarly commentary.

Following the application of the inclusion/exclusion criteria, 48 studies were selected for a full review, including empirical and conceptual contributions.

3.5. Screening and Quality Assessment

The screening process for studies followed PRISMA-style guidelines. Initial screening consisted of reviewing titles and abstracts to exclude studies deemed irrelevant or duplicates. Subsequently, a full-text screening was conducted to evaluate the methodological rigor of the studies and their alignment with theoretical relevance. Studies were assessed for quality based on clarity of research design, level of detail in reporting methods for collecting and analyzing data, and the degree to which studies connect digital transformation to employee psychological outcomes. Policy and organizational reports were assessed for credibility, based on institutional source and empirical basis. Both the analytical and synthesis approaches were employed to gather evidence and to develop a thematic synthesis of the selected literature. A thematic synthesis involves an iterative process developed by Thomas & Harden (2008), that includes three stages:

Stage One – Coding of Textual Data Extracted From Each Study;

Stage Two – Developing Descriptive Themes to Identify Patterns Across Studies;

Stage Three – Developing Analytical Themes That Are Aligned With The Review's Conceptual Framework.

The analytical approach utilized during the synthesis stage, identified the four theoretical perspectives as coding categories including: (a) Job Demands Resources Dynamics, (b) Adaptation And Coping Mechanisms, (c) Organisational Learning Processes, and (d) Change Management Structures. Each study examined the extent to which the study addressed each dimension.

As part of the analysis, a total of three overarching themes were identified:

(1) Digital Transformation As A Source Of Both Job Stress And Motivation;

(2) Mediation Mechanism For Translating Stress Into Learning Through Adaptability/Coping;

(3) Macro-Level Enabling Factors For Psychological Resilience Including Organisational Learning/Structured Change Management.

NVivo software was utilized for qualitative coding and visualization of the synthesis. These integrated themes resulted in the development of the conceptual model examining the relationship between digital transformation, stress, adaptability, and learning within European organisations.

3.6. Methodological Limitations

Although the review has been designed systematically, it does have some limitations. The exclusion of research published in languages other than English may limit the number of relevant studies from non-English speaking European countries. Furthermore, the inclusion of preprints and grey literature may introduce variability in terms of the level of peer review. Lastly, although most of the studies included in this review are cross-sectional in nature, therefore, the ability to make causal inferences regarding the psychological impacts of digital transformation remains tentative.

4. INTERPRETATIONS AND SYNTHESIS OF FINDINGS

A large number of studies were reviewed to identify how changes in digital technology have impacted employee stress levels, adaptability and ability to continue to develop their skills. A synthesis of thematic data revealed three interrelated themes that demonstrate how the European workforce perceives, interprets and responds to the ever-changing world of technology. These include: (1) the impact of digital transformation on employee stress levels, (2) adapting to and being flexible in response to digital change, and (3) developing new skills and learning in the workplace.

4.1. Impact of Digital Transformation on Employee Stress Levels

European workplaces and workers have experienced significant changes in how they operate and what their jobs entail as a result of the adoption of new digital technologies. These changes have created many new sources of workplace related stress including technostress, which is a psychological strain caused by the excessive use of technology, having to be constantly connected, and/or feeling that your current technical skills are obsolete. Eurofound's (2024) cross European study reported that nearly one third of workers felt that their job had become more stressful as a result of working with digital technologies, particularly for administrative, health care, and service based workers. Klonck et al. (2023) conducted a study of two German and Dutch organizations where they observed that "digital job demands" such as, having to multitask and dealing with too much information at once, strongly correlated with worker fatigue and decreased commitment.

These results illustrate how digitalization creates new job demands and provides new job resources. For example, Mandl (2024) and Cedefop (2024) demonstrated that if provided with autonomy, good communication from management and training opportunities, digital technologies that create job demands can increase engagement and productivity. However, in SMEs in Central and Eastern Europe, if job demands are not accompanied by sufficient resources, it can lead to employee burnout and turnover (Szabó & Óri, 2024).

There are also differences in how various sectors in Europe experience stress from digital transformation. In public administration and education, stress is typically created from the introduction of digital technology in a way that does not allow for worker input in planning and implementation decisions. On the other hand, in high tech and financial industries, workers generally accept changes in technology and experience pressure to perform at a high level continuously. Therefore, digital transformation can have a dual role as a source

of both opportunity and stress, depending on whether workers are given adequate support within their organization.

4.2. Adaptability and Psychological Flexibility

Adaptability has emerged as a primary psychological resource for workers in Europe in order to cope with the challenges presented by digital transformation. Through the application of adaptation and coping theory (Lazarus & Folkman, 1984), European research demonstrates that workers' perception of digital change as either a challenge or a threat, will determine the emotional and behavioral response of the worker. Van der Westhuizen et al. (2024) reported that workers who have a strong sense of coherence, i.e., believe that their environment is understandable, controllable, and meaningful, will report less technostress and greater overall well-being in the face of digital transformation.

During the time of the COVID-19 pandemic, the majority of European employees were forced to adapt to remote work environments using digital technologies that they may not have previously used (Lehmann & Beckmann, 2024). As a result of this experience, the importance of psychological flexibility, or the ability to be adaptable in response to uncertainty and to continually develop digital skills, was clearly illustrated. Gonzalez-Varona et al. (2024) reported that adaptability was a key component of SME's digital competence development and that the collective adaptability of the employees was a primary factor in determining organizational resilience.

Leadership and organizational culture also play important roles in building resilience in employees. Research conducted in Spain, Germany and Hungary indicated that transformational leaders who provide trust, communication, and vision to their employees are able to encourage their employees to take risks and experiment in the face of digital change and therefore reduce the fear of failure and promote adaptability (Sagala & Öri, 2024). Conversely, hierarchical organizational structures and top down digital implementations discourage employees from taking the initiative to adapt and instead, encourage employees to engage in defensive coping, leading to resistance or passivity (Sagala & Öri, 2024).

Together, these findings suggest that adaptability is not simply an individual trait, but rather a contextual process that is developed and supported through a learning culture and leadership practices.

4.3. Learning in the Workplace and Developing New Skills

The third major theme concerns the role of learning in the workplace and developing new skills as a means of converting digital stress into growth and innovation. The frameworks for continuous learning (EU initiatives: Digital Skills Agenda and Lifelong Learning 2027) represent Europe's focus on human centered approaches to digitalization (Cedefop, 2024).

Individual learning is converted to collective knowledge through organizational learning (Argyris & Schön, 1978). Rahim et al. (2024) and Marques & Ferreira (2024) demonstrated that companies that foster double loop learning (i.e., questioning assumptions and experimenting with digital tools) have higher digital maturity and less resistance to change. This supports the frameworks for Change Management (Hiatt, 2006; Kotter, 1996) that focus on building awareness, providing capabilities, and reinforcing change.

In practice, effective learning systems include formal training along with informal learning opportunities such as, peer collaboration and problem solving. Gonzalez-Varona et al. (2024) emphasized that SMEs that incorporate learning into the daily operation of the company, such as through mentoring, digital skill sharing and reflective feedback, exhibit stronger resilience against disruptions caused by technological advancements. Eurostat (2024) further reported that countries that invest in adult digital training programs (e.g. Finland and Denmark) experience higher rates of employee satisfaction and innovation performance.

Therefore, learning in the workplace acts as a transformative link between technological change and employee well-being. When supported by leadership and policy incentives, learning allows workers to transform technological disruption into sustainable organizational adaptability.

5. PRACTICAL IMPLICATIONS FOR MANAGERS AND POLICYMAKERS

There are many practical implications for managers and policy makers from this study's synthesis of evidence. While an effective digital transformation strategy will involve technological improvements, it also needs to have a supportive psychological environment. It has to support both the innovative potential of technology while at the same time supporting the well-being of its employees.

1. Support the Human Side of Digital Transformation.

Managers need to understand that the stress caused by digital transformation is not just about increasing productivity. Rather, it is a psychological experience that affects how much your employees are engaged with their jobs and how likely they are to stay with the company. Using the JDR framework, managers should be able to monitor and control the amount of digital job demands placed upon their employees. They should be able to do so while providing them with the necessary resources, training, autonomy and supportive communication to avoid burn out (Mandl, 2024; Klonek et al., 2023).

2. Create a Culture of Psychological Safety and Adaptability.

Organizations should create a culture of adaptability by having managers use leadership styles that allow for experimentation and open communication. Organizations that use transformational and inclusive leadership are found to increase the resilience and coping capacity of their employees (Sagala & Ori, 2024; Van der Westhuizen et al., 2024). As a result, creating a culture of adaptability and psychological safety will allow employees to experiment with new technologies without being afraid of failing.

3. Provide Employees with the Opportunity to Learn and Develop Continuously.

It is essential that organizations invest in lifelong learning opportunities. To achieve this, policymakers can rely on the EU Skills Agenda and the Cedefop recommendations to develop national programs that promote digital literacy, reskilling and micro-credentials (Eurostat, 2024; Cedefop, 2024). Furthermore, managers should implement learning opportunities within the daily workflow of their employees. This can be achieved by implementing

mentorship systems and feedback mechanisms to enable adaptive learning cultures (Gonzalez-Varona et al., 2024).

4. Use Structured Models of Change Management.

When implementing digital transformations, using structured models of change management such as ADKAR or Kotter's eight-step model can aid managers in navigating the transition to new ways of working systematically. The aforementioned models ensure that employees go through all the required stages of awareness, desire, knowledge, ability and reinforcement when transitioning to new ways of working. This reduces resistance and increases buy-in among employees (Ahmad et al., 2024).

5. Develop Inclusive Policies and Foster Cross-Sector Cooperation.

To bridge the gap between regions regarding their digital readiness, policymakers should foster cross-sector cooperation and develop frameworks that address regional differences in digital preparedness. The comparative studies (Lehmann & Beckmann, 2024; Szabó & Óri, 2024) suggest that, compared to Western Europe, the Central and Eastern European countries experience a higher degree of psychological burden due to a lack of digital infrastructure and training investments. Therefore, EU level initiatives should fund regional skill partnership programs and assist small and medium-sized enterprises (SMEs) to develop human-centered digital strategies.

6. Redefine Success Metrics for Digital Transformation.

In addition to measuring the financial performance of an organization, organizations should consider additional metrics when assessing the success of a digital transformation project. Indicators of employee engagement, learning participation and well-being should also be included in the assessment. Organizations may want to conduct regular pulse surveys and digital stress audits to gather information on which aspects of the digital transformation process need to be improved.

6. CONCLUSIONS

The digital transformation of work in Europe has changed the psychological landscape of working life, specifically in terms of stress, adaptability and learning (Klonek et al., 2023; Van der Westhuizen et al., 2024; Gonzalez-Varona et al., 2024; Mandl, 2024; Sagala & Óri, 2024). The integration of Job Demand Resources (JDR) theory, Adaptation and Coping theory, Organisational Learning Theory and Change Management Theory, provided evidence to support that digital transformation represents more than just a technological process, but is also a psychological and organisational one.

There is consistent evidence from recent European research (Van der Westhuizen et al., 2024; Gonzalez-Varona et al., 2024; Mandl, 2024; Sagala & Óri, 2024) that while digital transformation presents challenges for employees, it also offers opportunities. For example, the greater use of technology in organisations has resulted in changes to the way work is carried out at a faster rate than ever before. As a result, the need for constant upskilling may

increase employees' stress levels and perceived inadequacies. However, if organisations have sufficient resources available to their employees (i.e. training, autonomy, supportive leadership, psychological safety), the potential for digital demands to act as motivators for employee engagement, growth and innovation increases.

For organisations to successfully undergo digital transformation, the key components of this include employees' ability to demonstrate adaptability and psychological flexibility. Whether an organisation's employees perceive digital change as a threat or an opportunity, and therefore experience stress or motivation respectively, is dependent upon employees' cognitive reframing of the changes being made to the organisation. Adaptability is not a naturally occurring trait among employees, however it can be developed by providing employees with supportive leadership, inclusive communication and continuous learning opportunities. This supports the EU's policy agenda for human-centred digitalisation and lifelong learning (EU Commission, 2017).

Employee learning, at both an individual and organisational level, is seen to be the transformative mechanism whereby employees can turn digital stress into capability. The implementation of continuous learning programmes, formal and informal, will enhance employees' digital literacy, reduce their technostress and ensure that the organisation remains competitive. Within European labour markets, where policy agendas including Digital Europe 2030 and Cedefop's Lifelong Learning Agenda are in place, there is increasing recognition of the links between employee learning and digital wellbeing.

Organisations undergoing digital transformation are faced with the challenge of developing structural processes to facilitate change. A number of theoretical frameworks, including Kotter's Eight Steps and the ADKAR Model, offer a range of practical approaches to integrate human factors into organisations' digital strategies, and enable employees to view the change as participative and purposeful, rather than imposed. The inclusion of learning systems and adaptive leadership approaches, enables organisations to develop employee commitment to change and employee resilience in response to change.

Ultimately, the synthesis demonstrates that digital transformation in Europe is most effective when it integrates technological innovation with psychological sustainability. The JDR model describes the dynamic relationship between job demands and job resources; Adaptation and Coping theories describe the psychological mechanisms at a micro-level; Organisational Learning theories describe the development of employees and organisations at a meso-level; and Change Management frameworks describe the organisational transformations at a macro-level. Therefore, the four theoretical perspectives collectively represent a comprehensive framework for understanding digital resilience.

Future research will focus on expanding cross-cultural and longitudinal analyses to understand how national labour market conditions, labour policies and industrial structure influence employee digital adaptation over time. Furthermore, more empirical research is required to identify the long-term consequences of digital stress and evaluate the effectiveness of interventions designed to promote employees' adaptability and wellbeing in different European labour markets.

In summary, digital transformation will continue to redefine the workplace in Europe, however, the success of digital transformation will depend on how effectively organisations manage the human aspect of change. Organisations that promote employees' adaptability,

provide continuous learning opportunities and embed employees' wellbeing into their digital strategies will not only reduce stress associated with digital transformation but will also create resilient, innovative and future-proof workforces. Ultimately, when viewed in a holistic manner, digital transformation is not solely a cause of employee fatigue, but can be an engine for the collective growth and psychological empowerment of employees.

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THE „MESSY MIDDLE“ CONCEPT IN THE DIGITAL CUSTOMER JOURNEY AND ITS APPLICATION IN THE COSMETICS SECTOR

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Abstract

The „Messy Middle“ reframes digital decision-making as a dynamic loop between exploration and evaluation, rather than a linear funnel. This study examines how the Messy Middle operates in the cosmetics sector, where perception, trust, and reassurance are central to purchase. Using a qualitative design (semi-structured interviews with decision-makers from three Bulgarian brands active locally and in EU markets), we map the customer journey from trigger to conversion and loyalty, and identify which behavioural mechanisms – category heuristics, social proof, authority, scarcity, power of now, power of free, plus costly signaling – most influence movement within the loop. Findings show that conversions peak when emotional immediacy (problem–solution–result narratives, short-form video) is paired with proof-based reassurance (reviews, certifications, retailer authority, clinical evidence). Cross-market analysis reveals that trust signals travel differently: what persuades locally (emotional storytelling, Cash on Delivery, social proof on Tik-Tok/Facebook) must be re-engineered as rational reassurance in Western Europe (secure payments, transparent returns, recognized retail partners). We extend prior work on user-journey planning for EU exports by grounding Messy Middle principles in cosmetics-specific touchpoints and international adaptation, and we outline implications for marketers and avenues for future research integrating behavioural science and AI-driven journey analytics.

Keywords: User Journey, Messy Middle, Planning International Sales

JEL: M16 International Business Administration

INTRODUCTION

Over the last decade, digital consumer behaviour has become increasingly non-linear. Traditional funnel models (the most fundamental and most used being awareness–consideration–purchase) no longer capture how people actually decide online. The Messy Middle provides a more realistic lens: between a trigger and a purchase, consumers loop between exploration and evaluation, guided by heuristic shortcuts and contextual cues rather than extended rational comparison.

Building on your published analysis of user-journey planning for EU markets which articulated touchpoints as “nudges and nods” along the path to purchase, this paper investigates how that planning logic interacts with Messy Middle dynamics in a high-engagement category: cosmetics. Specifically, we examine how behavioural mechanisms and

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information foraging shape movement within the loop, and how those patterns change when brands sell outside their home market.

Research questions:

- Which behavioural mechanisms most strongly influence exploration–evaluation loops in cosmetics?
- Which touchpoints and content forms provide the “scent” of valuable information that keeps consumers engaged?
- How must journeys and trust signals be adapted for international (EU) markets versus local ones?

Contribution:

- Theoretical integration – bridges Messy Middle (behavioural shortcuts, order effects, costly signaling) with user-journey/touchpoint planning and information foraging.
- Contextual evidence – cosmetics-specific insights from three Bulgarian brands operating locally and abroad.
- Practical guidance – an implementable playbook for designing loops, layering trust, and adapting journeys cross-market.

Scope: The study focuses on three brand cases (organic/therapeutic skincare; handmade bio shampoos & soaps; anti-acne/anti-age skincare), with semi-structured interviews and thematic analysis. While qualitative in design, the patterns generalize to adjacent high-engagement categories where proof, authority, and reassurance are pivotal.

REVIEW OF MODELS

From Linear Funnels to Non-Linear Decision Behaviour

Classic consumer-journey models conceptualize decision-making as a linear sequence of awareness through consideration to purchase. While intuitive, recent work has highlighted that digital environments introduce non-linear pathing, parallel information search, and multiple evaluation cycles (Court et al., 2009; Lemon & Verhoef, 2016).

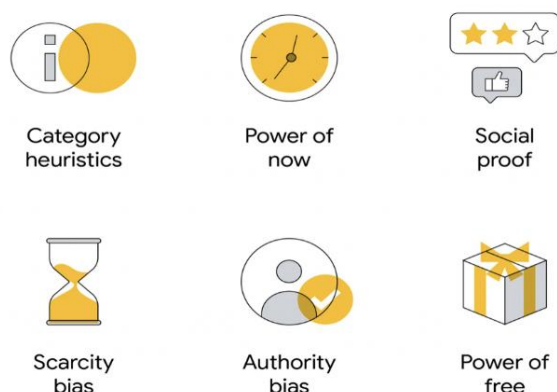
Users do not progress simply “down” a funnel; instead, they loop, compare, doubt, re-turn, and seek reassurance – often across devices and platforms.

The prior publication of the author extended this non-linearity by framing touchpoints as “nudges and nods” – small interaction opportunities that move or reassure users during the journey. In the current work, we explore how these nudges interact with behavioural biases within the Messy Middle.

The Messy Middle Model

Google’s large-scale behavioural experiment conceptualized the Messy Middle ((Google & The Behavioural Architects, 2020) as a dynamic space between trigger and purchase, where consumers repeatedly oscillate between exploration (broadening options) and evaluation (narrowing options)

The authors demonstrated that behavioural shortcuts, six in particular – category heuristics, social proof, authority, scarcity, power of now, and power of free – can meaningfully shift conversion preference in this loop.



Source: Decoding Decisions: Making sense of the messy middle. Think with Google.

Fig. 1. The six cognitive biases that most affect consumer's behaviour in the Messy Middle

This study applies these insights to cosmetics, a category where subjective perception matters, the risk of disappointment is high, reassurance is critical and social identity is salient.

Cognitive Biases as Decision Accelerators

Heuristics simplify complex decisions (Tversky & Kahneman, 1974). Within digital journeys, they function as fast filters that reduce cognitive load:

- Category heuristics (e.g., “organic,” “clinically tested”)
- Social proof (reviews, UGC, influencer validation)
- Authority (dermatologists, pharmacists, trusted retailers)
- Scarcity (timers, limited editions)
- Power of now (express delivery, flash sales)
- Power of free (samples, gifts)

Recent Messy Middle extensions add costly signaling (Zahavi, 1975; Miller, 2009): visible investments (e.g., expos, certifications, media coverage) that communicate confidence because they are expensive to fake. Brands in competitive categories use such signals to differentiate.

Information Foraging Theory

Pirolli & Card (1999) posit that users are information foragers following the “scent” of valuable cues. When “scent” weakens, users abandon a webpage or platform. The research

identifies key elements as click-paths, scroll depth and content layering as behavioural proxies for scent strength.

The interviews conducted by the author for this paper revealed that cosmetics consumers seek ingredient clarity, clinical proof and icons, authentic testimonials and marketplace validation.

When these cues are layered, the user remains in the evaluation loop – a prerequisite for conversion.

Touchpoints as Nudges

The author's earlier research conceptualized the customer journey as a sequence of context-embedded touchpoints, each offering a potential nudge to activate or reassure behaviour. Examples included payment method familiarity, delivery-speed expectations, and channel-specific trust, all of which influence movement along the planned customer journey (Malchev, 2023).

In the present study, we examine how these nudges interact with Messy Middle biases – especially in cosmetics, where emotional discomfort (e.g., acne) increases urgency.

Journey Internationalization

When selling across national borders, studies show trust signals shift as local markets rely on social validation while foreign markets prioritize institutional authority and secure logistics (Johanson & Vahlne, 2009). In cosmetics, this is amplified by safety concerns, ingredient regulations and cultural preferences for clinical evidence.

Our findings show clear differences between consumer expectations in Bulgaria vs. Germany/Sweden regarding payment trust, return policies and “too good to be true” promotions.

Summary of Theoretical Gaps

While Google validated the Messy Middle conceptually, two gaps remain:

- **Category specificity** – we lack evidence on how Messy Middle patterns manifest in high-engagement, identity-relevant categories such as cosmetics
- **International adaptation** – we know little about how cognitive biases travel across markets. These especially refer to payment habits, regulatory expectations and cultural attitudes toward risk.

This study aims to address both, and identify any additional if these exist.

METHODOLOGY

Research Design

This study adopts a qualitative, exploratory research design, appropriate for understanding how behavioural mechanisms manifest in real digital journeys. The focus is on meaning, perception, and decision structure, rather than statistical generalization (Creswell, 2014). Qualitative methods are recommended when examining subjective evaluation, trust formation, and information foraging – all core dimensions of the Messy Middle.

Sampling Strategy

Three Bulgarian cosmetics brands were selected through purposive sampling based on:

- Active digital presence (social media, DTC websites)
- International sales exposure within the European Union
- Variation in product category and customer segment for Ina Essentials organic and therapeutic cosmetics), The Soap Factory (handmade bio shampoos and soaps, Shimani / Shoot the Pimple (anti-acne and anti-age skincare)
- Operational maturity (existing distribution, marketing processes)

This variation strengthens theoretical saturation, enabling comparison across business models.

Data Collection

Data were collected through semi-structured interviews with company decision-makers.

Interviews lasted 40–70 minutes, conducted online, recorded with consent, and transcribed.

The interview protocol followed four thematic blocks aligned with the Messy Middle report:

- Mapping the Customer Journey – from initial trigger through conversion and loyalty, including online/offline touchpoints.
- Cognitive Mechanisms and Decision Biases – manifestations of category heuristics, social proof, authority, scarcity, power of now/free, costly signaling.
- Information Foraging and Density – signals that strengthen or weaken the “scent” of valuable information, including visual/semantic cues.
- International Applicability – cross-market adaptation of trust signals, payment practices, regulatory expectations.

This structured block design ensured comparability across interviews while allowing flexibility for spontaneous insights.

Data Processing and Analysis

The transcripts were analysed using reflexive thematic analysis (Braun & Clarke, 2006). The process included familiarization (repeated reading of transcripts), initial coding (tagging statements about behavioural triggers, trust cues, information density), theme development (clustering codes into higher-order patterns as “emotional immediacy,” “authority layering”), theme review (refining boundaries; merging overlapping concepts) and reporting (extracting representative examples)

Codes were compared across brands to identify recurring behavioural patterns, differentiators by category and adaptations observed across markets,

Triangulation

To increase credibility, interview findings were triangulated through:

- review of brand websites (information architecture, heuristics, visual proof)
- social media content analysis (UGC, influencer signals, problem–solution narrative)
- marketplace and retailers listings (Douglas, Amazon, pharmacies)

- observed consumer reviews in public channels

Researcher Positioning

The researcher has:

- industry expertise (digital marketing, user journey design)
- academic grounding (doctoral research in consumer journeys)
- pedagogical experience teaching marketing models

This positioning offers domain fluency, though it introduces the potential for interpretative bias. To mitigate this, coding emphasized verbatim conceptualization from interviewees and cross-case comparison rather than normative judgement.

Limitations

As an exploratory qualitative study:

- Results are not statistically generalizable
- Interviewees represent brand perspectives, not end-users
- Findings focus on digital cosmetics journeys; adjacent categories may differ

However, the identified behavioural mechanisms align with broader Messy Middle research, increasing analytic transferability.

FINDINGS

The qualitative analysis reveals four interconnected findings that illustrate how consumers navigate the Messy Middle in the cosmetics sector. Across all cases, behaviour is shaped by a balance of emotional immediacy and proof-based reassurance, with trust signals layered over multiple touchpoints.

Mapping the Customer Journey in Cosmetics

The customer journey in cosmetics rarely follows a straight line. Instead, it unfolds through micro-episodes of exploration, evaluation, and reassurance before purchase.

- **Trigger: Visible Problems and Personal Goals** – Triggers are often related to visible discomfort (acne inflammation, dandruff, irritation), identity-oriented goals (anti-aging routines, natural products) and seasonal needs (dryness, sun protection). These triggers create emotional urgency, prompting immediate search behaviour.

- **Exploration: Functional + Emotional Search** – Consumers compare product ingredients, before/after photos, delivery terms, ethical positioning. Exploration is increasingly platform-initiated (TikTok, Instagram Reels), where problem–solution–result narratives dominate.

- **Evaluation: Trust-Building Phase** – Authority and social proof interlock in this phase. Evaluation is defined by dermatological approval, visible clinical proof, distribution through trusted retailers (Douglas, pharmacies) and authentic user testimonials.

- **Conversion: Ease and Safety Logic** – Final purchase often depends on perceived return-policy fairness, familiar payment options (cash-on-delivery vs. card) and delivery

speed expectations. Cosmetics consumers are sensitive to risk of disappointment, making safety a conversion driver.

- **Loyalty / Repeat Purchases** – Although not included in the original Messy Middle loop, loyalty emerged as strategically critical across all brands – micro-gifts in packages, personalized email follow-ups and routine-based product sequences (cross-sell).

Cognitive Mechanisms in the Messy Middle

All six biases identified by Google were actively present across the three cases, though with different intensities:

- **Category Heuristics** – consumers lean on simplified cues to reduce cognitive load – “organic”, “dermatologically tested”, “Bulgarian rose oil”, “without sulfates/parabens”. These heuristics act as fast filters.

- **Social Proof** (Strongest Signal) – user-generated content (UGC), reviews, and comment sections were repeatedly cited as decisive – comments under ads outperform ad copy, and TikTok testimonials drive immediate spikes.

- **Authority** – trust rises sharply when pharmacists recommend products, brands appear in known retail chains, products carry visible certifications. Authority compresses the evaluation loop.

- **Scarcity** – limited editions and seasonal boxes stimulate purchase velocity but must be believable and aligned with category expectations.

- **Power of Now** – express delivery and “arrives tomorrow” messaging resonate strongly for problem-driven categories (e.g., inflamed acne).

- **Power of Free** – micro-gifts reduce abandonment for first-time buyers. “A small gift feels like proof, not marketing.”

- **Costly Signaling (Emergent)** – exposition and fairs, awards, CSR activities, and TV appearances were perceived as expensive to fake – increasing perceived credibility.

Information Foraging and the “Smell of Confidence”

Findings align with Foraging Theory (Jonny Protheroe et al. (n.d.). Navigating purchase behavior and decision-making) – consumers follow the scent of valuable information and abandon sources that feel weak or repetitive. The following signals increase “scent strength”:

- **Ingredient clarity** – icons and short paragraphs outperform long text blocks.

- **Visual proof** – before/after photos and dermatologist quotes drive retention.

- **Clinical language** – phrases like “clinically tested” perform disproportionately well.

- **Community validation** – Facebook group mentions and marketplace reviews serve as external verification.

Conversely, “scent” weakens when images are generic, ingredient lists are ambiguous and data is absent or text-heavy. All covered brands in the study monitor click-maps on website, scroll depth, bounce points.

International Adaptation and Market Differences

The Messy Middle changes shape across borders due to cultural expectations, regulatory context and payment confidence.

- **Payment Trust** – for Bulgaria on cash-on-delivery reinforces psychological safety while in Western Europe: secure online payments expected; COD can appear suspicious.
- **Risk Interpretation** – in Sweden and Germany “too good to be true” offers decreased conversion, while in Bulgaria they often increase conversion velocity.
- **Communication Tone** – domestic markets reward emotional storytelling and subtle humour while International markets demand more rational proof, certification clarity, transparent return policies
- **Channel Strategy** – for local (home market) offline pop-ups and pharmacies reinforce credibility while abroad: distributors and marketplaces act as authority proxies. Presence in well-known pharmacy chains “borrows” trust.

Cross-Case Overview

Across all cases emotion initiates exploration, proof accelerates evaluation, authority shortens doubt cycles and micro-gifts reinforce loyalty. The strongest pattern relates to credibility – credibility is cumulative with each reinforcing signal shortens the loop between exploration and conversion.

DISCUSSION

The findings of this study confirm that digital cosmetics journeys are shaped by **non-linear loops** of exploration and evaluation, consistent with the Messy Middle model (Google & The Behavioural Architects, 2020). Rather than progressing through a predictable funnel, consumers repeatedly seek reassurance across multiple touchpoints before committing to a purchase. This behaviour intensifies when **identity, risk of disappointment, and visible results** are at stake – all characteristics of cosmetics consumption.

Table 1. Manifestation of Core Cognitive Biases in the Cosmetics Category

Cognitive Bias	Manifestation in Cosmetics	Example Evidence (Interview Insight)	Effect on Journey
Category Heu	Ingredient shortcuts (“organic”, “fates”)	Consumers scan icons graphs	Speeds evaluation
Social Proof	UGC, comment sections, market views	“Comments under ad form ad copy”	Compresses hesitation
Authority	Dermatologists, pharmacy presence	Visibility in Douglas/ph	Shortens evaluation
Scarcity	Limited boxes/seasonal editions	Holiday kits	Increases velocity
Power of Nov	Express delivery	“Arrives tomorrow”	Moves from exploration version

Cognitive Bias	Manifestation in Cosmetics	Example Evidence (Interview Insight)	Effect on Journey
Power of Free	Samples, small gifts	“Feels like proof, not marketing”	Reduces abandonment
Costly Signal	Awards, expos, CSR	TV appearances	Boosts legitimacy

Emotional Immediacy as the Primary Activation Trigger

The prevalence of **problem–solution–result** narratives on social media suggests that consumers are often emotionally activated by **visible discomfort** (e.g., acne flare-ups) or **aspirational identity** (e.g., anti-aging routines). This aligns with behavioural literature, which shows that **negative affective states** accelerate search behaviour (Baumeister et al., 2007).

Cosmetics brands benefit from **short-form content** that frames the problem, demonstrates a result and offers immediacy. This structure compresses the entry barrier into the exploitation loop.

Proof-Based Reassurance as the Evaluation Accelerator

Once emotionally engaged, consumers seek **evidence** – often across multiple channels. This multi-source validation reflects the **bounded rationality** (Simon, 1955) and the **risk aversion** (Kahneman & Tversky, 1979).

Consistent with prior findings in your earlier publication, **touchpoints act as nudges** that reassure buyers along the journey. Evidence can take the form of certifications, before/after photos, pharmacist endorsements, recognizable retailers.

This creates a **ladder of trust**, each rung reducing perceived risk. Brands that fail to provide *layered* proof remain trapped in longer evaluation loops.

Authority and Social Proof as Trust Multipliers

Authority and social proof emerged as the **strongest** mechanisms across all cases. In cosmetics, where results are subjective, **peer testimony** often outweighs brand claims. This mirrors previous research in social identity theory, parasocial influence and heuristic processing.

The interplay of influencer validation, dermatologist authority and marketplace reviews creates **multi-signal trust stacking**, which compresses hesitation.

Information Foraging as Journey Navigation Logic

Findings strongly support **Foraging Theory**: consumers follow the scent of valuable information and abandon sources when scent weakens (Pirulli & Card, 1999). Cosmetics product pages that surface ingredients visually, provide clinical claims and showcase real photos generate stronger scent. This result extends your earlier concept of **nudges and nods**: scent itself *is* a nudge, creating a feeling of progress through information scent cues rather than navigation menus.

Costly Signaling as Legitimacy Assurance

An emergent finding was the role of **costly signals**, such as exposition and participation, television appearances, awards, CSR initiatives. Costly signaling theory (Zahavi, 1975; Miller, 2009) suggests that because these investments are expensive, they serve as **credence proof**: it is unlikely a low-quality brand would invest in them (Sutherland, 2019). This mechanism has been underexplored in Messy Middle literature and represents a **novel contribution**.

International Adaptation

The journey's shape changes across borders due to payment confidence, regulatory familiarity and consumer protection norms. In Bulgaria cash-on-delivery provides psychological safety. In Germany and Sweden "sash-on-delivery" may appear suspicious, while transparency and returns become critical.

These patterns align with **institutional trust literature** (Johanson & Vahlne, 2009). Thus, Messy Middle loops are not merely behavioural; they are **context-embedded**. Touchpoints that work locally must be **re-engineered** for foreign trust ecologies.

Integration with Prior Research by the Author

Your earlier work conceptualized touchpoints as **structural planning artifacts** – the user journey map. The Messy Middle reveals the **behavioural forces** that move people across that map.

Together we identified touchpoints *where* persuasion can occur and biases *that impact* persuasion and in this paper we have added the "scent" of valuable information so that users stay and do not abandon. This layered model advances both academic clarity and managerial utility.

The Cosmetics Case as a High-Engagement Exemplar

Because cosmetics are intimate, identity-relevant, trust-sensitive, feedback-visible they act as a **stress test** for Messy Middle dynamics. Where mechanisms work here, they likely generalize to adjacent categories such as supplements, dermatology products and eco-cleaning. This observation supports future cross-category research.

Implications for Marketers

The results of this study suggest that success in the digital cosmetics category depends on a **precise orchestration** of behavioural mechanisms, information cues, and culturally appropriate trust signals. The implications extend beyond cosmetics to any category where consumers face **high perceived risk** and **identity-relevant outcomes**.

Design For Loops, Not Lines

Traditional funnels assume **linear progression**. The Messy Middle requires marketers to anticipate **re-entry** into exploration and evaluation cycles. Practical implications include planning users to return to comparison pages, surfacing reassurance points repeatedly and maintaining semantic consistency across platforms.

Tactically, this means **mirroring proof signals** on social media posts, product pages and marketplace listings.

Layer a “Proof Ecosystem” and Not Just One Signal

The strongest conversions occurred when **multiple trust signals** were layered as Peer proof (UGC, reviews, comment sections), institutional proof (certifications, lab tests), re-tail proof (pharmacy presence, Douglas), **visual proof** (before/after). Brands should plan their proof signals as a *system* rather than as isolated assets.

Optimize the “Scent” of Valuable Information

To retain users during evaluation loops, brands must strengthen the **information scent** (Pirolli & Card, 1999). This includes ingredient icons instead of long paragraphs, clinical claims early in the page, authentic community commentary, progressive disclosure of details.

Combine Emotion with Evidence

The study reinforces a **dual-process** persuasion model as **emotion** activates (explore) and **evidence** validates (evaluate). Content should reflect the logic social videos to narrate the problem and solution emotionally and product pages and FAQs to substantiate with rational details. This would mirror the System 1 to System 2 progression (Kahneman, 2011).

Use Costly Signals to Accelerate Legitimacy

Emergent evidence suggests that **visible investment** as expositions, awards, CSR etc. acts as a *signal* of longer term commitment by the brand and as a *proxy* for quality. Marketers should **publicly surface** these investments as logos of events, photos from exhibitions and certificates.

Tailor Trust Signals for International Markets

Cross-market differences require **trust localization** – for Bulgaria (local market for the companies it is emphasis on cash on delivery, on relatable storytelling and on social validation. For Germany and Sweden it is emphasis on secure payments, regulatory transparency and return clarity.

Reduce Cognitive Load Through Category Heuristics

Heuristics should be surfaced early and visually “dermatologically tested”, “paraben-free”, “pharmacy grade” and “Made in EU”. These signal are expected to accelerate evaluation, reduce abandonment, increase conversion intent.

Reinforce Loyalty Through Micro-Gestures

Post-purchase behaviour, often ignored in Messy Middle diagrams, proved crucial. Recommended tactics include small gifts in packaging, milestone discounts, personalized email nudges, “routine-building” product bundles.

These gestures trigger reciprocity bias, strengthen identity alignment, increase repeat order velocity.

Synchronize Proof Across Owned, Earned, and Paid Media

Because consumers cross-check information product detail pages (PDP) content shall match influencer claims, certifications must match packaging visuals, testimonials must match comment sentiment.

Ethical Persuasion in the Messy Middle

Finally, marketers must recognize that behavioural techniques carry **ethical responsibility** – avoid false scarcity pressure, ensure verifiable claims, respect attention.

This aligns with emerging EU regulations on greenwashing, claims substantiation, influencer transparency.

FUTURE RESEARCH DIRECTIONS

This study opens several promising avenues for future exploration. As the Messy Middle becomes increasingly central to understanding digital behaviour, opportunities arise to expand its application both methodologically and contextually. Future work could cover these key areas based on the research, findings and limitations of this paper – **quantify** behavioural lift, **simulate** journeys with AI, **compare** high-engagement categories, **map** international trust signatures, **codify** ethical boundaries.

Behavioural Science Meets AI

The next frontier involves integrating **behavioural frameworks** with **AI-driven analytics**.

Natural Language Processing (NLP), vector similarity models, and clustering techniques can classify review sentiment, detect dominant heuristics, identify repeating trust signals, predict drop points in evaluation loops. Large-scale data can reveal **latent behavioural patterns** that interviews alone cannot surface.

Quantifying Cognitive Bias Lift

While qualitative evidence highlights bias influence, future research should quantify how much social proof increases conversion, how authority compresses evaluation time and how scarcity affects cart completion. Controlled A/B testing and attribution modeling could isolate effect sizes across demographics, purchase contexts, geography.

Cross-Category Comparative Studies

Cosmetics act as valid testing grounds because results are visible, identity is involved, disappointment risk is high. Comparative studies could examine supplements, dermatology, eco-cleaning, baby products. These categories share sensitivity and trust dependency. Findings could reveal a universal behavioural pattern of emotional urgency moved to proof stacking and to identity reinforcement.

Micro-Moments & Temporal Context

User behaviour fluctuates depending on time of day, emotional state and situational context. Future research could explore when users are more susceptible to scarcity, when peer validation matters most and which micro-moments trigger return loops.

Ethical Behavioural Design

As behavioural techniques intensify, new ethical questions emerge:

- When does scarcity become pressure?
- How transparent should influencers be?
- Which claims require clinical substantiation?

Future research should explore **responsible persuasion**, aligning with EU Green Claims Directive, influencer compliance guidelines and sustainability claims enforcement.

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PROFESSIONALIZING NGOS TO SUPPORT BULGARIA'S EUROPEAN INTEGRATION: GOVERNANCE AND MANAGERIAL INSIGHTS

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1. INTRODUCTION

Since joining the European Union in 2007, Bulgaria has undergone profound institutional transformations linked to democratic consolidation, regulatory compliance, and adaptation to European standards (Kutter & Trappmann, 2010). In this process, non-governmental organizations (NGOs) have emerged as key players, capable of combining technical expertise, social action, and advocacy with European institutions (Micheletti, 2021).

Recent literature shows that NGOs play a dual role: they both adapt to European frameworks and act as mediators of local needs and civic participation (Carmin & Vandever, 2004; Fagan & Sircar, 2010). This research focuses specifically on how Bulgarian NGOs have adapted their management, human resources, and governance to contribute to European integration, while maintaining their social effectiveness and ethical legitimacy (Stefek. J, 2021).

The challenge for Bulgarian NGOs was therefore to strengthen their organizational sustainability by reconciling professionalization and civic engagement². As argued by Kramar (2021) and De Beer, Tims, & Bakker (2016), sustainability and performance are inseparable from the quality of human resource management, particularly in hybrid organizations such as NGOs. Diversifying funding, balancing employees and volunteers, and developing European and international partnerships remain essential (Benevene, Buonomo, & West, 2020). Furthermore, to improve access to funding from European and international donors, it is crucial that they comply with European norms and standards, ensuring transparency and credibility (Valéau, 2004). This alignment promotes integration into transnational networks, strengthens governance, and supports managerial innovation (Ehnert, Harry, & Zink, 2014). Thus, NGOs can consolidate their strategic role and fully contribute to the dissemination of European values and standards³.

We therefore attempt to explore the relationship between NGO management and their organizational sustainability, which guarantees a strengthening of their strategic role in European integration. Our question is as follows: How do NGOs adapt their management to reconcile professionalization, civic engagement, and European integration?

To address our research question, we propose a three-step approach. First, we will analyze the specificities of NGO management and their role in the European integration process. Second, we will examine fifteen Bulgarian NGOs based on the study of official documents. Finally, in a third step, we will compare the observed managerial practices with

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² Civitillo, Renato. (2021) "Non-profit institutions: professionalism, accountability and civic engagement." *Kybernetes*, vol. 50, no. 7, pp. 2060–2072.

³ Szent-Iványi, B. (2023). *European civil society and international development aid: Organizational incentives and NGO advocacy*. Routledge.

existing theoretical frameworks, in order to highlight the links between NGO management and organizational sustainability, and thus demonstrate the essential role of these organizations in European integration. This gives rise to the following research hypotheses.

- H1: The professionalization of NGOs (use of qualified employees, training, management tools) strengthens their credibility and facilitates access to European funding. (Kearns, 2000, Kramar, 2021, De Beer, Tims, & Bakker, 2016)

- H2: Maintaining a balance between volunteers and employees allows NGOs to preserve their organizational sustainability. (Bayle, Valéau, 2004; Vroom & Yetton, 2010, Benvene, Buonomo, & West, 2020).

- H3: Transparent governance aligned with European standards increases donor confidence and promotes the integration of NGOs into transnational networks (Ebrahim, 2010; De Waal, 2016, Steffek. J, 2021).

- H4: Diversifying funding sources (public, private, European, international partnerships) is a key factor in organizational sustainability (Micheletti, P, 2023; Ehnert, Harry, & Zink, 2014).

I. CONCEPTUAL FRAMEWORK: NGO MANAGEMENT AND EUROPEAN INTEGRATION

I-1 NGO Management

I-1-1 NGO Governance

De Waal (2016) emphasizes the importance of strategic governance and transparency as conditions for the sustainability and credibility of NGOs. He highlights that, in contexts where corruption is pervasive, NGOs must adopt rigorous management practices to maintain their legitimacy and effectiveness.

Furthermore, De Waal emphasizes that the accountability of NGOs must be clear and operational, particularly within the framework of the Responsibility to Protect (R2P), where NGOs play a crucial role as intermediary actors in a "web of responsibility." This requires transparent governance and strategic management to ensure the effective implementation of international standards.

These perspectives highlight that, for NGOs to be effective levers in transition or integration processes, they must not only be professionalized, but also adopt clear, transparent governance aligned with international standards¹.

Ebrahim (2010) emphasizes the importance of accountability and internal control mechanisms for NGOs, particularly to ensure their compliance with donor requirements and European standards. Accountability implies that these organizations must be accountable to their donors (upward accountability), their beneficiaries (downward accountability) and their internal stakeholders (functional accountability).

Regarding internal control mechanisms, the author identifies financial reports and disclosure statements that ensure transparency on the use of funds, performance evaluations

¹ Rozbicka, P., Kamiński, P., Novak, M., & Jankauskaitė, V. (2021). The organizational development of nongovernmental organizations in Central and Eastern Europe. In A. B. Antal & A. Sobczak (Eds.), *Civil society and social responsibility in higher education: International perspectives on curriculum and teaching development* (pp. 77–95). Springer.

and social audits that allow evaluating the effectiveness of programs and strengthening stakeholder confidence and self-regulation, as well as social audit mechanisms that promote a culture of continuous improvement and commitment to beneficiaries. These mechanisms contribute to more transparent governance and better resource management, which are essential elements for maintaining the legitimacy and effectiveness of NGOs¹.

I-1-2 Professionalization and Human Resources Management

Professionalization is expressed through the structuring of teams and the implementation of ongoing training. Miller, Grønbjerg, & Salamon (2008) emphasize that the balance between employees and volunteers is a key performance factor. Kearns (2000) shows that professionalization promotes the management of complex projects and dialogue with donors. However, this professionalization of NGOs must not encroach on the primacy of volunteering, as this would deviate from the very ethics of these organizations (Hattab.O, 2025).

The approaches of Tocqueville and Batifoulier (2000) have shown that human resources management within the NGO is quite different from the moment when the organization calls upon quite heterogeneous actors (volunteers, employees); this HRM will therefore be overlapped between the theory of commitment (pure involvement; Etzioni, 1961; Meyer, J. P., & Herscovitch, L, 2001) and the theory of expectation (calculative involvement; Vroom & Yetton, 2010) with the issue of social cohesion based on complementarity and not competition of actors (Salignat, 2019). It is an HRM which involves integration factors and differentiation factors (BAYLE, VALÉAU 2004) guaranteeing sustainable performance of the organization (VALÉAU, 2004, Ari, E., Karatepe, O. M., Rezapouraghdam, H., & Avci, T. 2020). (GARFIELD, 1991) confirms that to properly achieve performance, it is necessary to focus on the expectations of the different actors and ensure their involvement and commitment.

I-2- Stakeholder Theory and the Role of NGOs

I-2-1 Stakeholder Theory

Freeman (1984) founded stakeholder theory. Salamon & Anheier (1996, 2020) highlight the diversity of organizational models and their adaptation to political contexts.

Stakeholder theory, popularized by Freeman (1984), proposes that organizations must consider all actors with a direct or indirect interest in their activities, not just shareholders or funders. For NGOs, stakeholders include the beneficiaries of programs and services, national and international funders and donors, volunteers and employees, institutional partners, such as public authorities, the EU or other NGOs, civil society, and the general public, who legitimize the NGO's action². The objective is therefore to manage the expectations, needs, and pressures of these actors to ensure legitimacy, credibility, and sustainability.

I-2-2 Role of NGOs through Stakeholder Theory

¹ Michael Edwards & David Hulme (1996). *Beyond the Magic Bullet: NGO Performance and Accountability in the Post-Cold War World*. Kumaran Press.

² Zhao, B. (2024). Influential factors and trajectories of NGO advancement. *Journal of Nonprofit & Public Sector Marketing*, 36(1), 1–21.

Stakeholder theory sheds light on several essential aspects of the role of NGOs, which can be summarized in four areas: accountability and transparency (NGOs must be accountable to their stakeholders), balancing multiple interests (NGOs often navigate between donor demands, beneficiary needs, and legal constraints), partnerships and collaboration (NGOs interact with other organizations, European networks, and international institutions to pool resources and skills, which strengthens their strategic role), and adaptation with professionalization. Indeed, NGOs must professionalize their management practices to meet stakeholder expectations and European standards, while maintaining their civic roots and volunteer commitment (Yuesti, A., Novitasari, L. G., & Rustiarini, N. W, 2016).

I-3 Institutional Impact of NGOs on European Integration

In the context of European integration, Bulgarian NGOs serve as bridges between the state, citizens, and European institutions, contributing to the dissemination of European standards. Stakeholder theory helps us understand how NGOs can align their internal practices (governance, HR management, funding) with the EU's external requirements¹. NGOs thus become strategic actors in institutional convergence, democratic consolidation, and the dissemination of European standards, while remaining accountable to their local beneficiaries and partners (Todorov, I., & Dimitrova, R. 2023).

I-3-1 European Integration and Non-State Actors

Vachudova (2010) emphasizes the role of non-state actors, particularly NGOs, pressure groups, and civic networks, in democratic consolidation processes in Central and Eastern European countries. This role is defined through three dimensions: strengthening democratic institutions, monitoring public action to influence and act as a counterweight, and mediating political transitions (in post-communist countries such as Bulgaria, NGOs facilitate the transition by acting as interfaces between citizens, government, and international actors)².

The author shows that non-state actors are not only service providers or funding recipients, but also active agents of political and institutional change, capable of supporting convergence with European standards.

I-3-2 Transnational Actors and the Europeanization of Local Policies

Ladrech (2000) analyzes Europeanization, that is, the way in which EU membership and European policies influence local and national practices. The author identifies the role of transnational actors (NGOs, professional networks, and international institutions) in the dissemination of European norms and standards. These actors participate in the formation of local policies through the transmission of know-how and governance practices, monitoring and evaluation of public policies, and the facilitation of transnational partnerships and pilot projects³.

¹ Todorov, I., & Dimitrova, R. (2023). Stakeholder Engagement in Bulgarian NGOs: Aligning Practices with EU Standards. *Journal of Nonprofit & Public Sector Marketing*, 35(2), 123–145.

² Vachudova, M. A. (2010). Democratic consolidation in the Czech Republic. *East European Politics & Societies*, 24(2), 261–290.

³ Ladrech, R. (2000). Social democracy and the challenge of European Union. Lynne Rienner.

Thanks to these interactions, local policies and organizational practices of NGOs are gradually aligning with European standards, contributing to institutional and democratic harmonization, hence their impact on European integration.

1-3-3 Summary and Links with Bulgarian NGOs

Vachudova (2010) highlights the contribution of non-state actors to democratic consolidation. Ladrech (2000) analyzes the influence of transnational actors in the Europeanization of local policies. Combined, the contributions of Vachudova and Ladrech allow us to understand the institutional impact of NGOs by confirming that:

- Bulgarian NGOs are strategic actors in European integration, not only through the provision of services, but also through their influence on local governance and the dissemination of standards.

- Their role is exercised at two levels: national/local (democratic consolidation, participatory governance, citizen engagement (Vachudova)) and transnational/European (dissemination of European standards, partnerships, and organizational learning (Ladrech)).

Based on these developments, we can propose the following conceptual model

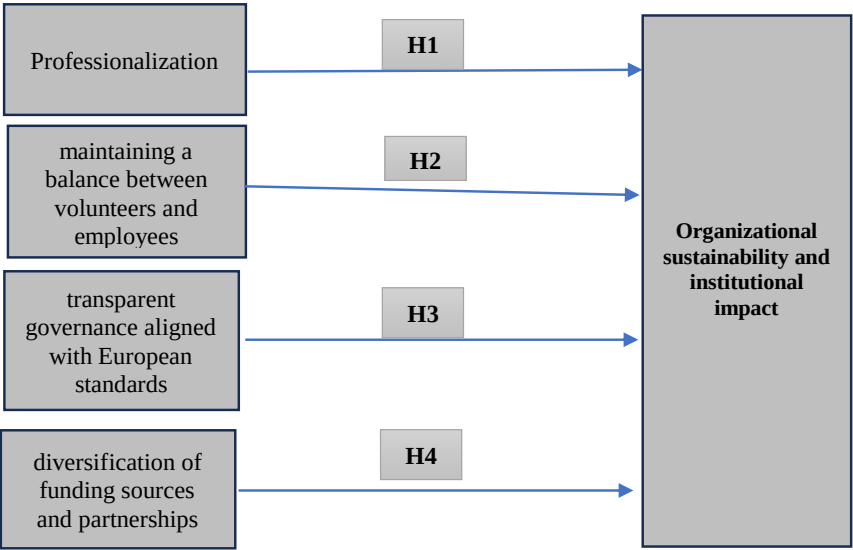


Fig. 1. Professionalization and international management of NGOs as levers of organizational sustainability and institutional impact

Theoretical constructs assume that the professionalization and international management of NGOs strengthen their capacity to respond to multiple expectations, both local and European, and to play this strategic role of mediation and diffusion by ensuring their organizational sustainability (access to funding, donor confidence and integration of NGOs in transnational networks) and their institutional impact. It is therefore our responsibility to examine whether Bulgarian NGOs have resorted to these managerial adaptations and to study the consequent impacts.

II. STUDY OF THE RELATIONSHIP BETWEEN PROFESSIONAL BULGARIAN NGOS AND EUROPEAN INTEGRATION: MAIN RESULTS

II-1 Sample and results

II-1-1 Sample

This study is based on a documentary analysis conducted among fifteen Bulgarian NGOs that were selected for their strategic role in democratic consolidation and European integration since 2007. The documentary analysis is based exclusively on reliable and recognized institutional documents and reports. This methodological choice is based on the quality, rigor and exhaustiveness of these sources, which allow for a solid and documented examination of the hypotheses formulated. The information collected was systematically compared and confronted with existing theoretical frameworks. The limitations inherent in the exclusive use of secondary sources were taken into account in the interpretation of the results, ensuring a critical and balanced analysis.

Our sample selection is based on three criteria:

- Duration and continuity of action (active since at least 2007).
- Diversity of missions (human rights, environment, education, local development, health, etc.).
- National and international reach (European partnerships and cross-border projects).

The indicators studied include the following:

- Funding trends (European Union, international donors, national funds).
- Human resource structure (employees vs. volunteers).
- Compliance and reporting mechanisms (audits, internal charters, financial reporting).
- International partnerships (participation in European and global networks).
- Governance practices (consultative bodies, transparency, accountability).

The data was codified in an Excel spreadsheet, then synthesized in the form of graphs illustrating: Dependence on European funding, the distribution of employees/volunteers by NGO. And the intensity of international partnerships.

II-1-2 Main Results

a- Distribution of NGO Funding

Approximately 80% of the NGOs studied receive a significant portion of their budget from the European Union or international donors (figure 2).

This proportion (80%) shows that the majority of Bulgarian NGOs rely heavily on external funding (figure 2), which can make them vulnerable to changing donor priorities. This underscores the importance of diversifying funding sources (local sponsorship, private partnerships, own initiatives) to reduce dependence on external funds.

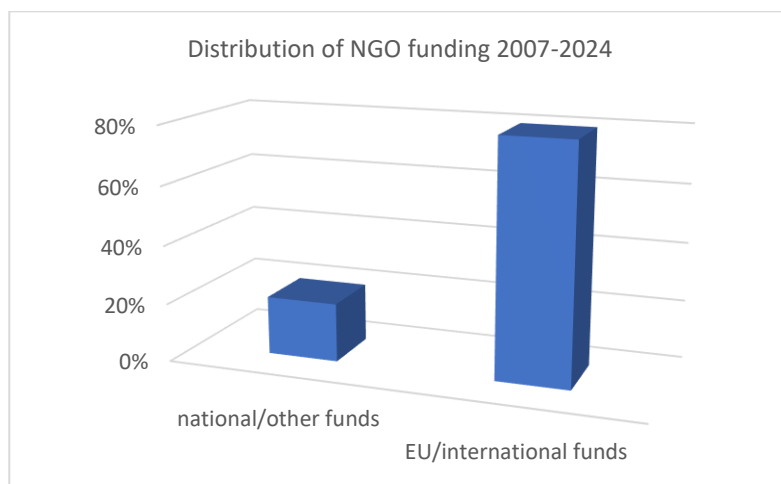


Fig. 2. Distribution of NGO Funding

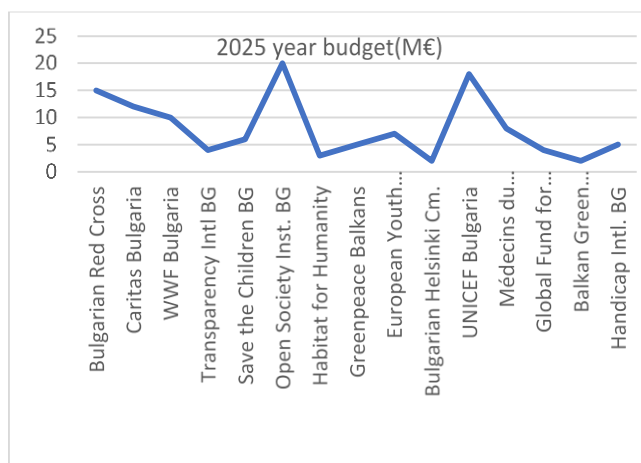


Fig. 3. Year budget

The fact that NGOs receive European funding implies that they must comply with strict standards of governance, transparency, and reporting, strengthening professionalization and accountability. This requirement of alignment with European standards promotes their integration into European networks and the dissemination of good managerial and organizational practices, thus strengthening their strategic role in institutional and civic processes.

Managing international funding requires international management skills, particularly in planning, project monitoring, reporting, and regulatory compliance. This illustrates that professionalization and international management are not only organizational choices, but also requirements related to their funding and their role in European integration.

Indeed, the study of the annual budget of the NGOs in our sample (figure 3) and the analysis of the compliance of the NGOs with the European standards prescribed by the donors (Table 1), shows that the more the NGO complies, the larger its budget.

b- Human Resources: Professionalization (employees vs volunteer)

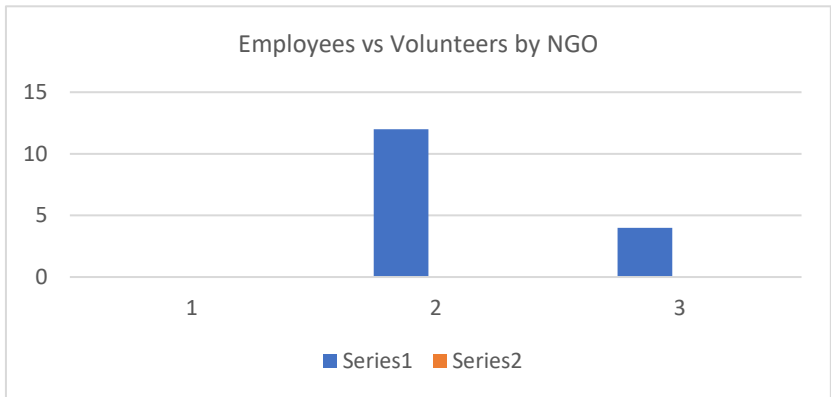


Fig. 4. Employees vs Volunteers by NGO

This mixed model combines technical expertise (employees) and social roots (volunteers), ensuring efficiency and legitimacy but also reflecting a high rate of professionalization (75%, figure 4). Indeed, the employee and expert component is much more present within NGOs, due to donor requirements. Unlike very community-based or humanitarian NGOs (such as the Red Cross), Bulgarian "professionalized" NGOs are focused on permanent employees rather than volunteers (figure 5).



Fig. 5. Majority employees

c- Partnerships and Governance

70% of NGOs actively collaborate with European or international networks (figure 6). The governance mechanisms observed include advisory boards, regular audits (internal and external), and internal transparency charters (codes of ethics, annual public reports, etc.).



Fig. 6. International NGO Partnerships

d- Comparative analysis of NGOs

Table 1. Comparative analysis of NGOs

NGO	Governance	Professionalization	Partnerships	HR Management	Funding	Compliance with European standards	Impact sustainability
CSD (Center for the Study of Democracy)	Founded in 1989, independent public institute, EU member, 30+ years of experience	Research, policy analysis, advocacy, training	Partnerships with national and international public and private institutions	Team of researchers, analysts, trainers	Public funding, EU grants, research contracts	Compliance with EU standards for research and public policy	Sustainable impact through research and policy analysis
Animus	Founded in 1994, public utility status, professional management	Professional services: psychotherapy, psychoanalytic analysis, social services	Collaboration with public and private institutions in Bulgaria and abroad	Psychologists, social workers, continuing education	Private donations, public grants, international partnerships	Participates in EU-funded projects, respects management and transparency standards	Violence prevention, victim support, lasting impact on communities
Bulgarian Helsinki Committee	Independent organization, active since 1992, focused on human rights	Human rights monitoring, advocacy, education	Partnerships with national and international human rights organizations	Lawyers, researchers, human rights activists	Private funding, EU grants, donations	Compliance with EU human rights standards	Sustainable impact through the promotion and protection of human rights
OSIS	Independent organization,	Investigative journalism,	Partnerships with media,	Journalists, researchers,	Private funding,	Compliance with EU	Sustainable impact through the

NGO	Governance	Professionalization	Partnerships	HR Management	Funding	Compliance with European standards	Impact sustainability
	active in the fight against disinformation	media literacy, using AI to monitor online disinformation	educational institutions and international organizations	technology experts	EU grants, donations	standards on media and freedom of expression	promotion and protection of human rights
WCIF (Women's Centre for Information and Development)	Independent organization focused on women's rights and development	Training programs, advocacy, support services for women	Partnerships with women's organizations, educational institutions and local authorities	Social workers, counselors, trainers	Private funding, EU grants, donations	Compliance with EU standards on gender equality and women's rights	Sustainable impact through women's empowerment and the promotion of gender equality
NNC (National Network for Children)	National network, collaborative governance, member of the European Platform for the Rights of the Child	Coordination of children's programs, advocacy, training	Partnerships with national and international children's rights organizations	Program coordinators, trainers, child rights advocates	Public funding, EU grants, donations	Compliance with EU standards on children's rights	Sustainable impact through the promotion of children's rights and the improvement of their well-being
BBF (Bulgarian Biodiversity Foundation)	Independent organization focused on biodiversity conservation	Research, conservation, environmental education	Partnerships with environmental organizations, educational institutions and local authorities	Researchers, environmental educators, project managers	Private funding, EU grants, donations	Compliance with EU standards for biodiversity conservation	Sustainable impact through biodiversity conservation and environmental awareness
BEPF (Bulgarian Environmental Partnership Foundation)	Independent organization focused on environmental protection	Funding programs for environmental projects, advocacy	Partnerships with environmental organizations, local authorities and businesses	Project managers, environmental experts	Private funding, EU grants, donations	Compliance with EU environmental protection standards	Sustainable impact through financing environmental projects and promoting sustainability
PULSE	Founded in 1999, professionally managed, name changed in 2002	19 employees, more than 40 volunteers, youth clubs, training programs	Partnerships with NNC, KOK (Germany), European Platform against Human Trafficking	Team of professionals and volunteers	Private donors, government agencies, EU projects	EU-funded projects, comply with European standards	Drug, violence and HIV/AIDS prevention programs have a lasting impact on young people

NGO	Governance	Professionalization	Partnerships	HR Management	Funding	Compliance with European standards	Impact sustainability
Open Forum	Platform for cooperation between NGOs, focused on capacity building	Training, networking, exchange of best practices	Partnerships with national and international NGOs, local authorities	Program coordinators, trainers	Private funding, EU grants, membership fees	Compliance with EU standards on cooperation between NGOs	Sustainable impact through capacity building of NGOs and promotion of cooperation
Foundation for Social Change	Independent organization focused on social change and development	Community development programs, advocacy	Partnerships with community organizations, local authorities and educational institutions	Social workers, trainers, social change advocates	Private funding, EU grants, donations	Compliance with EU standards on community development	Sustainable impact through community development and social change
EcoObshtnost	Independent organization, focused on environmental and social sustainability	Awareness programs, sustainability education, advocacy	Partnerships with environmental organizations, educational institutions and local authorities	Sustainability educators, environmental advocates	Private funding, EU grants, donations	Compliance with EU standards for environmental and social sustainability	Sustainable impact through the promotion of sustainability and social responsibility
Bulgarian Donors Forum (BDF)	Founded in 2004, representing major donors, member of WINGS	Coordination and support for donors, promotion of philanthropy	Partnerships with financial institutions, businesses and NGOs	Administrative staff, program coordinators	Membership fees, partnerships with financial institutions	Compliance with WINGS and CEEN-ERGI standards	Support for philanthropy, lasting impact on the associative environment
Foundation for Local Development	Independent organization, focused on local development	Community development programs, advocacy	Partnerships with local authorities, community organizations and educational institutions	Social workers, trainers, local development advocates	Private funding, EU grants, donations	Compliance with EU standards on local development	Sustainable impact through local development and community capacity building
Bulgarian Red Cross	National organization, classic governance International NGO	Significant professionalization, social services and relief	Partnerships with the international and local Red Cross	Professionals and volunteers	Private donations, government and EU grants	Compliance with International Red Cross and EU standards	Relief, health, social programs, lasting impact

Source: source: own development based on official NGO reports and documents.

III. DISCUSSION

The comparative analysis of NGOs, taking into account their governance, professionalization, partnerships, human resources management, funding, compliance with European standards, and sustainability of impact, as well as the figures found, show that the Bulgarian model illustrates organizational hybridization: strong professionalization (employees, expertise, reporting), continued volunteer commitment (citizen participation, social anchoring), governance inspired by European standards, and transnational partnerships strengthening legitimacy, sustainability, and impact. The results of this study show that 80% of the NGOs studied depend partly on European funding, most adopt a mixed model combining employees and volunteers, with priority given to employees (75%), and 70% participate in international networks, confirming their role as vectors of European standards. These results allow us to verify our research hypotheses.

H1: The professionalization of Bulgarian NGOs (use of qualified employees, training, management tools) strengthens their credibility and facilitates access to European funding.

This hypothesis is confirmed. NGOs such as the CSD, Animus, and the BHC demonstrate that the use of qualified salaried teams and modern management tools constitute a guarantee of seriousness in the eyes of donors. This professionalization gives them privileged access to European funding and transnational partnerships.

H2: Maintaining a balance between volunteers and employees allows NGOs to preserve their organizational sustainability. This hypothesis is not validated. Indeed, for NGOs such as the Bulgarian Red Cross, PULSE, or the NNC, the involvement of volunteers strengthens civic legitimacy and social ties without having a direct institutional impact or guaranteeing sustainability. The strong primacy of volunteerism sometimes limits their access to funding, their transnational visibility, and their ability to influence.

H3: Transparent governance aligned with European standards increases donor trust and promotes the integration of NGOs into transnational networks.

This hypothesis is confirmed. NGOs that have adopted clear and transparent governance mechanisms, such as the Donors Forum or the Open Forum, are better integrated into European networks and enjoy greater donor trust.

H4: Diversification of funding sources (public, private, European, international partnerships) is a key factor in organizational sustainability. This hypothesis is confirmed. NGOs that successfully combine multiple funding sources, such as the Bulgarian Biodiversity Foundation or Animus, demonstrate a greater ability to stabilize their activities and ensure their continuity.

We can then operationalize our model as follows:

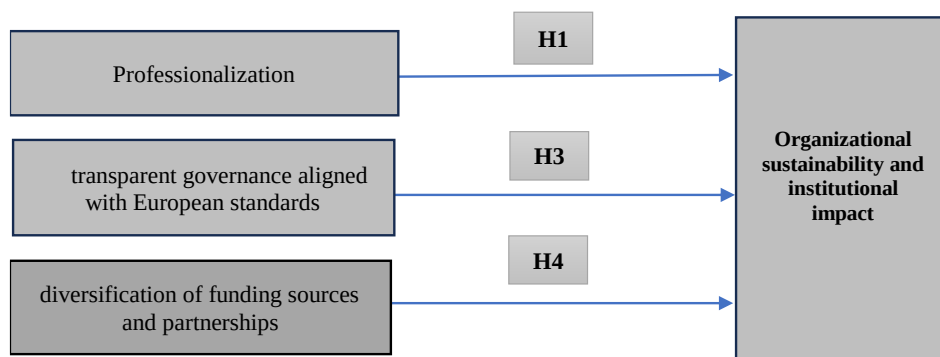


Fig. 7. Professionalization and international management of NGOs as levers of organizational sustainability and institutional impact: Case of Bulgarian NGOs

CONCLUSION

The analysis of the fifteen Bulgarian NGOs studied shows that their management operates in a constant tension between professionalization and civic engagement. The establishment of professional structures, qualified employees, and modern management tools strengthens their credibility and facilitates access to European funding, thus confirming the importance of professionalization for institutional legitimacy. At the same time, the involvement of volunteers and maintaining proximity to citizens remain essential to preserve the social legitimacy of NGOs and their ability to respond to local needs, but reduces their access to funding, which minimizes their organizational sustainability and limits their impact.

Transparent governance aligned with European standards is a key factor in building trust among donors and allows NGOs to integrate into transnational networks, thus strengthening their role as institutional actors in Bulgaria's integration process into the European Union. Diversifying funding sources contributes to organizational sustainability, even if dependence on European funds remains a structural vulnerability. Thus, Bulgarian NGOs emerge as strategic mediators and institutional catalysts, capable of reconciling performance requirements, social mission, and European integration. Their management reflects a differentiated adaptation depending on the sector and internal capacities. NGOs aspiring to fulfill their institutional role prioritize professionalization and access to international funding; others with a social vocation maintain strong local roots, with significant reliance on volunteers. The sustainability and lasting impact of these organizations will depend on their ability to manage this dual balance and strengthen their professionalization within the European framework. Recommendations to maintain the balance between volunteers and employees, strengthen governance and transparency, develop strategic partners, and diversify funding sources, while investing in ongoing professionalization, may be useful for these NGOs, which are increasingly establishing themselves as strategic actors in European integration. Although the study is based on a documentary analysis, its limitations call for

continuing the research through qualitative interviews with NGO leaders, in order to deepen the understanding of internal dynamics and contemporary managerial challenges.

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COMPREHENSIVE ANALYSIS OF THE BANKING CREDIT POLICY: STRATEGIC FRAMEWORK AND OPTIMIZATION IN THE CASE OF AZERBAIJAN

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Abstract

This paper provides a comprehensive analysis of the key parameters shaping the credit system within banking institutions. By exploring the theoretical foundations of system concepts and applying them to the banking credit framework, the study examines the structural, functional, and strategic aspects of credit systems. It highlights the dynamic interrelations between credit resources and allocations, the integration of credit policy and credit technologies, and the importance of aligning credit operations with macro- and microeconomic factors. Emphasizing the critical role of effective management and regulatory compliance, the paper underscores how a well-organized credit system contributes to economic stability, sustainable growth, and financial sector resilience. The findings also reflect on the specific features of Azerbaijan's banking sector and offer insights for optimizing credit systems in similar emerging economies.

Keywords: Credit system, banking sector, credit resources, credit policy, credit technology, risk management, economic development, Azerbaijan banking, financial stability, credit allocation

INTRADACTION

The banking sector plays a pivotal role in the economic development of any country by facilitating the efficient allocation of financial resources. Among the various functions of banks, the credit system stands out as one of the most critical components, as it directly influences investment activities, production cycles, and overall economic stability. In modern economies, the concept of a "system" has been widely used to describe complex inter-related structures that function cohesively to achieve specific goals. The credit system within banks is no exception; it is an organized and dynamic set of elements working collectively to provide credit resources, regulate their distribution, and manage risks effectively.

The term „system“ originates from the Greek word „sisteme“, meaning a unified whole composed of interconnected parts. In the context of banking, the credit system integrates diverse elements such as credit policy, credit technologies, risk assessment procedures, and regulatory frameworks. These components are not randomly assembled but are carefully coordinated to maintain the stability and efficiency of credit operations. The credit system's unique characteristics arise from the interactions among its elements, the economic environment it operates within, and the strategic objectives set by financial institutions.

Credit, as a financial instrument, serves multiple functions. It not only facilitates the circulation of capital and goods but also acts as a mechanism for redistributing financial resources across various sectors of the economy. This redistribution ensures that

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enterprises, especially small and medium-sized businesses, receive timely funding to support their operational and expansion needs. Therefore, the credit system acts as a catalyst for economic growth by bridging the gap between surplus and deficit financial agents, optimizing liquidity, and fostering productive investment.

The efficient functioning of the credit system depends heavily on the alignment between credit resources (liabilities) and credit placements (assets) in terms of volume and maturity. Misalignment can lead to liquidity shortages, increased credit risks, and potential financial instability. Thus, banks must carefully manage their credit portfolios, ensuring that credits extended correspond with the available resources and market demands. This requirement highlights the significance of strategic planning and tactical execution within the credit system, encompassing credit policies and technologies designed to optimize lending processes.

Moreover, the credit system's design and operation are influenced by various macroeconomic and microeconomic factors, including regulatory standards, market conditions, and institutional capabilities. For example, the regulatory framework imposed by central banks, such as minimum capital requirements and risk limits, directly affects credit allocation and risk management strategies. Simultaneously, banks' internal factors like organizational structure, personnel expertise, and technological infrastructure shape how effectively credit systems respond to changing economic landscapes.

In the case of emerging economies, such as Azerbaijan, the credit system faces additional challenges and opportunities. The banking sector must adapt to evolving market needs, support the development of small and medium-sized enterprises (SMEs), and contribute to the country's overall financial stability and economic diversification. Understanding the complex parameters governing the credit system is essential for policymakers, banking professionals, and researchers to enhance credit accessibility, minimize risks, and promote sustainable economic growth.

This paper aims to provide an in-depth examination of the essential parameters defining the credit system in banking institutions, with particular emphasis on the strategic and tactical components that govern credit operations. By analyzing theoretical perspectives and empirical insights, the study seeks to illuminate the intricate relationships within the credit system, identify key challenges, and propose approaches for optimizing credit processes in alignment with global best practices and local economic realities.

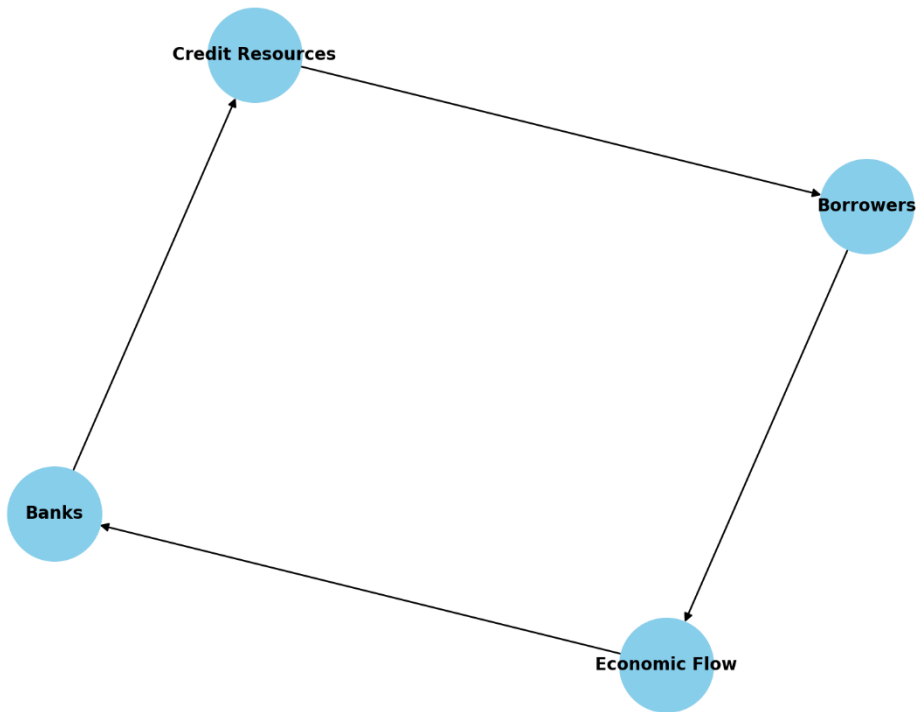
ANALIZ

The concept of a "system" is integral to understanding the banking credit framework. Originating from the Greek word *sisteme*, meaning an integrated whole of interconnected parts, the system approach allows for a comprehensive analysis of the multifaceted credit relationships within a bank (Checkland, 1981). The credit system in banking is not merely a random assembly of independent elements but a coherent structure that ensures the smooth flow of financial resources across economic agents.

The credit system is characterized by its unique set of elements – credit policy, credit technology, credit risk management, regulatory compliance, and market interactions – all operating under a unified objective: facilitating efficient credit allocation to support

economic growth. This system is dynamic, adapting to changing internal and external conditions, such as economic cycles, regulatory reforms, and technological advances (Brealey, Myers & Allen, 2011).

At its core, the credit system comprises a network of relationships between credit providers (banks) and credit users (borrowers).



The system ensures the transformation of liabilities (deposits and other resources) into assets (credits) while maintaining liquidity and solvency. The ratio of credit resources (passives) to credit placements (actives) is crucial; imbalances can precipitate financial distress or reduce lending capacity (Diamond & Rajan, 2001).

Indicator	Definition	Target Value
Liquidity Ratio	Measures the ability to cover short-term obligations.	> 100%
Maturity Matching Index	Degree to which asset maturities match liability maturities.	~1
Risk-Weighted Asset Ratio	Ratio of risk-weighted assets to capital.	< 100%

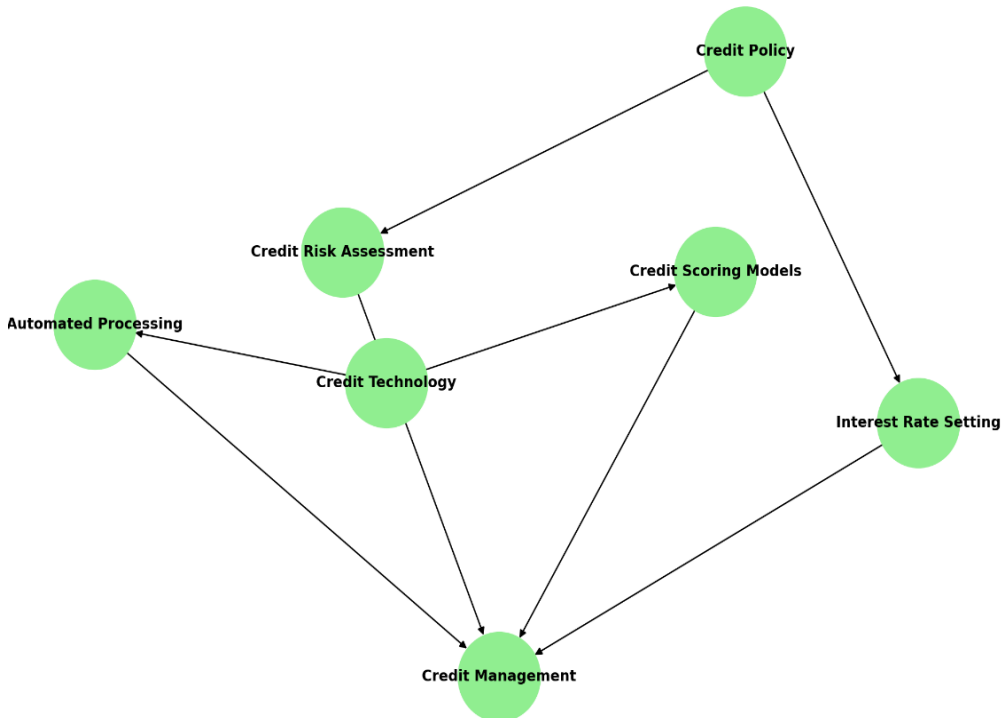
This necessitates a careful calibration of maturity and volume between incoming resources and outgoing loans. Credit resources should be mobilized promptly and fully utilized in lending to avoid idle funds, which could erode profitability. Conversely, overextension of credit beyond resource capacity risks default and capital erosion.

Moreover, the credit system performs essential economic functions, such as:

- Provision of working capital and fixed assets financing to enterprises, especially SMEs.

- Allocation and redistribution of financial resources across sectors, promoting efficiency.
- Risk sharing and mitigation through diversification and assessment techniques.
- Economic stabilization by moderating liquidity fluctuations and credit availability.

The credit system's effectiveness depends on the integration of credit policy (strategic framework) and credit technology (tactical implementation tools).



- Credit policy establishes the bank's strategic objectives concerning credit operations, such as target sectors, risk appetite, pricing, and portfolio diversification. It reflects regulatory mandates, economic forecasts, and the institution's competitive positioning (Hull, 2018).
- Credit technology encompasses the methodologies and procedures for credit appraisal, approval, monitoring, and risk assessment. This includes business plan evaluation, collateral valuation, credit scoring models, and delinquency management (Saunders & Allen, 2020).

For example, credit technology includes a wide array of instruments and platforms that support credit assessment and decision-making. One of the most commonly used tools is credit scoring systems, which use statistical models to evaluate the creditworthiness of applicants based on their financial history, income levels, repayment behavior, and other risk indicators. In many modern banks, automated loan approval systems are employed to streamline the lending process – these systems analyze applicant data and approve or reject

loans within minutes, reducing operational costs and human bias. Additionally, the integration of artificial intelligence (AI) and machine learning algorithms allows for dynamic risk profiling, enabling banks to detect potential defaults or fraud by analyzing non-traditional data sources such as online behavior, transaction patterns, and real-time market signals. Digital credit platforms and mobile lending applications are also part of credit technology, especially vital in increasing financial inclusion in rural or underserved areas.

These platforms allow borrowers to submit applications, track loan status, and make repayments electronically, thus minimizing physical paperwork and increasing accessibility.

Furthermore, banks in countries like Azerbaijan are gradually adopting electronic document verification, remote customer identification (e-KYC), and blockchain-based loan contracts, which contribute to transparency, data security, and efficiency in credit operations. Collectively, these technologies not only enhance the speed and accuracy of credit processes but also support compliance with regulatory standards and improve the overall customer experience.

Their symbiotic relationship ensures that strategic goals translate into operational efficiency and risk-controlled lending practices. For instance, the policy defines acceptable credit risk levels, while technology provides the tools to assess and manage these risks effectively.

Credit risk – the possibility of borrower default – remains the primary concern of credit systems. Effective risk management involves identifying, measuring, monitoring, and controlling credit exposures. Techniques such as credit scoring, risk-based pricing, and portfolio diversification are essential tools (Jorion, 2007).

Regulatory frameworks, such as Basel Accords, impose capital adequacy standards, risk limits, and disclosure requirements to safeguard the banking system's stability. In Azerbaijan, the Central Bank sets prudential norms, including maximum exposure limits per borrower, insider lending restrictions, and risk concentration thresholds (Central Bank of Azerbaijan, 2023).

Banks must navigate these regulations while balancing profitability and risk. This regulatory compliance shapes credit policies and operational practices significantly.

The credit system does not operate in isolation; it is heavily influenced by macroeconomic factors such as GDP growth, inflation, monetary policy, and interest rates. Expansionary monetary policy, for example, can increase credit availability but may also raise inflation risks (Mishkin, 2015).

Microeconomic factors include the bank's size, capital base, technological capacity, personnel expertise, and customer base quality. Larger banks with diversified portfolios and advanced credit technologies tend to have more resilient credit systems (Berger & Udell, 2006).

In emerging economies, like Azerbaijan, credit systems face unique challenges:

- Limited access to credit by SMEs due to perceived higher risks and lack of collateral.
- Underdeveloped credit information infrastructure.
- Volatile economic conditions and regulatory changes.
- Need for tailored credit products and flexible risk assessment models.

Supporting SME financing requires the credit system to adapt through innovative credit products, government-backed guarantees, and enhanced credit monitoring to mitigate asymmetric information problems (Beck, Demirgüç-Kunt & Maksimovic, 2008).

The credit system acts as a transmission mechanism of monetary policy and a driver of economic growth by mobilizing savings and channeling them into productive investments. Balanced credit expansion supports employment, technological innovation, and sectoral diversification.

Conversely, credit system failures can trigger financial crises, underscoring the importance of sound credit policies and robust operational frameworks (Kindleberger & Aliber, 2011).

Empirical studies indicate that well-structured credit systems correlate positively with economic growth rates and financial market development (Levine, 2005). Azerbaijan's banking reforms and credit policy improvements in recent years have contributed to enhanced credit penetration, particularly in the SME sector, albeit challenges remain (World Bank, 2022).

CONCLUSION

In conclusion, the credit system serves as a vital mechanism for channeling financial resources from surplus units to deficit units, thus promoting investment, production, and economic growth. Its dual structure – comprising credit resources (liabilities) and credit placements (assets) – requires a balanced and efficient allocation to ensure profitability, stability, and sustainability. Effective credit policy and credit technology integration are essential for minimizing risk, managing liquidity, and optimizing loan portfolios.

Empirical analysis of the Azerbaijani banking sector shows that the volume of credit allocation has steadily increased, especially in the non-governmental sector, indicating a positive trend in financial intermediation. However, maintaining an adequate ratio between deposits and credits remains critical. An overreliance on short-term liabilities to fund long-term loans can lead to liquidity crises and systemic vulnerabilities.

To enhance the credit system's resilience and effectiveness, policymakers and financial institutions must prioritize:

- Risk-adjusted credit allocation strategies,
- Strengthened regulatory frameworks,
- Digital transformation of credit processes,
- Increased access to finance for SMEs and rural sectors.

A robust and well-regulated credit system not only supports economic development but also acts as a buffer against macroeconomic shocks, ensuring long-term financial stability.

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BULGARIA'S EUROZONE ENTRY: OPPORTUNITIES, CHALLENGES AND ADAPTIVE STRATEGIES FOR SMALL AND MEDIUM-SIZED HOTELS

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Abstract

Small and Medium-sized Hotel Operators (SMHOs) are a major component of the Bulgaria's hospitality industry and are a key driver of national development. Given Bulgaria's planned entry into the Eurozone in early 2026, the transition to the common currency, the euro, is anticipated to bring both opportunities and challenges for these operators, particularly those operating under low profit margins. Using a narrative review approach, this study examines the opportunities that Eurozone adoption may create for such hotels, while also analyzing the challenges that could influence their competitiveness, drawing on insights from peer-reviewed academic literature, government reports, and industry publications. The study finds that Bulgaria's accession to the Eurozone would be advantageous to SMHOs in terms of more business opportunities, the removal of currency exchange risks, more investment opportunities, and access to European Union-funded financial assistance. It may also bring challenges such as increased payroll cost, lower access to credit, decline in domestic tourism, and the requirement of investment for sustainability, which can raise operating expenses. The proposed solutions in the study are able to meet such challenges and realize the benefits of Eurozone membership. The study's significance is that it provides SMHOs with a more comprehensive understanding of the potential opportunities and challenges that are likely to be confronted in the adoption of the Eurozone, highlighting the need for strategic and timely interventions to maintain their competitiveness.

Keywords: Bulgaria, euro adoption, Eurozone entry, small and medium-sized hotels, tourism industry

JEL: L2, L8, M1

BACKGROUND

Bulgaria's tourism industry is a significant contributor to the national development, accounting for about 10% of the country's Gross Domestic Product (GDP) (Varadzhakova, et al., 2025). Small and Medium-sized Hotel Operators (SMHOs), who often manage individual domestic hotels or small chains with a maximum capacity of 150 rooms, represent a significant segment of the business and are especially noteworthy for their economic and social impact. As Bulgaria adopts the euro on January 1, 2026, the economic climate for these SMHOs will drastically shift with the Bulgarian lev (BGN) currency being replaced by the euro (EUR) at a fixed exchange

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rate (Fisayo-Bambi, 2025). The process is anticipated to bring several benefits to SMHOs.¹

The euro as circulating currency will take away a lot of hassle of traveling from foreign tourists, thus opening new sales channels to hoteliers. There was also a similar phenomenon that was seen when the euro entered Croatia in 2023 and saw Eurozone tourists rising by 8% in the first eight months, which significantly helped the tourism industry (Croatian Bureau of Statistics, 2023). Bulgaria is already witnessing robust growth in its tourism industry. Ever since the post-pandemic era, tourism income has risen annually, and it touches almost €4 billion in 2024 (Figure 1) (Bulgarian Chamber of Commerce and Industry, 2025). Such a trend decisively indicates Bulgaria's robust and increasing popularity as a key destination for tourism. With the transition to the euro, advantages such as simplified currency exchange and increased tourist confidence are bound to further develop this popularity and open up new horizons for the tourism sector.



Source: (Bulgarian Chamber of Commerce and Industry, 2025)

Fig. 1. Revenue from International Tourism

While the transition is anticipated to result in uncompromising opportunities, it also anticipated to pose operational challenges to SMHOs. Since such operators have thin margins, euro introduction is anticipated to raise operating expenses that can cut their profit margins (Hristova, 2024) & (Zlatinov, et al., 2023). To avoid the risk of losing profitability, it will be critical that SMHOs take strategic measures that will allow them

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to capitalize on opportunities while taking effective action in dealing with euro-induced operational challenges.

REVIEW OF LITERATURE AND METHODOLOGY

Most studies related to the adoption of the euro by Bulgaria have focused either on its impacts at the national economic level, affecting sectors such as SMEs (Small and Medium-sized Enterprises) and tourism, or on the tourism sector in the broader European context, encompassing other EU (European Union) countries. Studies have investigated the euro's far-reaching implications for Eurozone intra-tourism, foreign tourism, and the overall tourism sector for European nations. These do not necessarily delve into far-reaching implications for SMHOs or Bulgaria's SMEs. Few studies take the Eurozone experience elsewhere as a point of reference; these are a general model and evidence applicable to the Bulgarian case. They support the principle, though not stated explicitly. In light of these helpful studies, valid conclusions can be drawn about the likely impact of euro adoption on Bulgaria's SMHOs, which is a critical tourism SME segment. Certain studies cited, provide a general framework and evidence, as well as insights from other nations' Eurozone experiences, which can be extrapolated to the Bulgarian context. They support the principle, even if it is not stated explicitly.

One of the studies analyzed potential macroeconomic advantages and disadvantages to Bulgaria, for example, trade liberalization, investor confidence, and impact on inflation (Zhelev, 2025). Another study investigated the economic implications and possible costs and benefits of euro adoption in Bulgaria, citing greater trade, capital inflows, and policy credibility but warning that loss of national monetary policy may hamper SMEs' development under financing constraints (Ganev, 2009). A subsequent study provided economic facts on five ex-socialist Eurozone economies and analyzed the impact on inflation and real convergence of adopting the euro (Stateva, 2021). In tourism, a study tested the economic implications and costs of the euro, citing that although tourism-related transaction costs will be reduced, some expenses are likely to stay the same (Socher, 1999). Another study examined developed nations and revealed that the adoption of the euro heightened intra-Eurozone tourist flows considerably (Santana-Gallego, Ledesma-Rodríguez, & Pérez-Rodríguez). Additional assessment of Economic and Monetary Union (EMU) member states found that the euro positively influenced inbound tourism, increasing both international tourist arrivals and tourism receipts (Xie, et al., 2024).

While these studies provide useful insights at the macroeconomic and tourism sector levels, no studies zoom in on the operational, strategic, or competitive challenges faced by SMHOs, leaving the opportunities, risks, and potential solutions for this segment fragmented and underexplored. This gap leaves SMHOs without evidence-based direction for planning for Bulgaria's adoption of the euro, and thus a full analysis that

brings together sectoral knowledge to offer practical strategies for competitiveness and operational effectiveness throughout this major economic shift is called for.

This study attempts to answer the question, “What opportunities might Eurozone adoption bring for SMHOs in Bulgaria, what challenges might it pose, and how could these operators address such challenges to maintain competitiveness and operational efficiency?” To answer this question, this qualitative study uses a narrative approach, synthesizing insights from peer-reviewed academic literature, government reports, and industry publications. This review is based on secondary data obtained from credible academic databases such as Scopus, Web of Science, and Google Scholar. In regard to credibility and appropriateness of selected literature, they were evaluated for status regarding peer-reviewed, institutional, or industry authorship, and matching themes of euro adoption, benefits, challenges, and proposed solutions for Bulgaria’s SMHOs. A mix of keywords such as Euro adoption in Bulgaria, Bulgaria’s tourism euro transition challenges, tourism SMEs and euro adoption, operational challenges and opportunities for Bulgaria’s SMHOs, adaptive strategies of SMHOs under euro adoption, competitiveness and risk management of SMHOs, and tourism SMEs’ operational and strategic responses to euro transition, was employed to frame the search and address the topic in a holistic manner.

The necessity of this study stems from the fact that adoption of the euro currency, as a structural economic change, will entail opportunities and challenges for small and medium hotel operators, and it is important to realize how these operators can overcome challenges while seizing opportunities in order to be competitive, and operationally efficient along with fulfilling the need for the development of the overall tourism sector of Bulgaria. Against this backdrop, this review is significant as it integrates findings from peer-reviewed scholarly articles, government documents, and industry journals to elicit realistic steps SMHOs can take to capitalize on the opportunities, counter the challenges, and apply potential solutions in view of Bulgaria's accession into the Eurozone.

The next part of the discussion is on opportunities euro adoption can offer, the challenges it presents, and possible means of overcoming these challenges in an attempt to enable SMHOs to compete and be effective in operations.

OPPORTUNITIES FOR SMALL AND MEDIUM-SIZED HOTELS

Drive Tourist Influx

Euro adoption is expected to significantly boost the influx of tourists (Santana-Gallego, et al., 2015). There are many contributing factors behind this. First, once the euro becomes the legal tender, international tourists planning to visit Schengen countries will be able to include Bulgaria in their itinerary along with other Schengen destinations. Not only because it is a comparatively cheaper destination, but also because currency conversion-related challenges will be eliminated. Cross-border and international travellers to the Schengen region will no longer have to purchase local currency for traveling within Bulgaria, thus not incurring exchange rate losses. The resulting savings may be used to stay longer or participate in other tourism-oriented activities, offering revenue streams for SMHOs and

other tourism-oriented businesses (Litkova, et al., 2025). Potential international tourists would also be able to compare prices more effectively across Schengen countries, and since Bulgaria, as noted earlier, remains a low-cost zone, it will gain preference among travellers (Popescu, et al., 2023) & (Costea, et al., 2016). Altogether, these factors could encourage more tourist inflows and increase business prospects for SMHOs.

Reduced Currency Exchange Risks

After adopting the euro, all business transactions will be in euro. Hotel operators will no longer be vulnerable to exchange rate losses as customer payments would be received in euro, unlike earlier when the local currency, the lev, was used. Without exchange rate losses eating into revenue, what hotels charge is exactly what they keep. This could help stabilize profitability, especially for SMHOs having tight margins. Another benefit will be the elimination of losses arising from currency volatility. SMHOs would no longer be vulnerable to such losses when planning for peak and off-season demand. Likewise, when billing in euro, operators will not have to pay conversion fees to banks and payment gateways for cross-currency transactions (Ganev, 2009) & (Xie, et al., 2024).

Hotel operators could also avoid exchange rate losses in advance bookings. Operators often face the risk of losing money during currency exchange in events where, guests have prepaid in euro long before their arrival, if there is a major downward fluctuation between the euro and the lev. Hotels often source equipment, supplies, or tech services from EU suppliers. Operators are required to convert the local currency into euro in order to pay these suppliers, who issue invoices in euro. This process involves exchange rate risk and conversion costs. By paying directly in euro, operators can earn avoidance of such additional risks and charges. Also, being legal tender, the euro would protect the operators from exchange rate risks when paying back EU loans or paying co-owners or investors in other European countries (Benguria & Wagner, 2022).

Enhanced Effectiveness of EU Financial Support

Euro adoption would also benefit SMHOs when engaging in EU co-financing project. Beneficiaries of EU co-financing projects need to maintain funds for several practical and regulatory reasons such as to demonstrate their own contribution, cover local expenses, comply with regulatory requirements, and effectively manage cash flow (Horrocks, et al., 2025). Another benefit of participating in these program is that income and expense reporting by hotel operators becomes not only easier but also carry less audit risk. With the euro as a common currency, hotel operators will not have to convert their local currency into euro to demonstrate funds. This will help them avoid conversion losses and protect them from the risks that occur if the local currency weakens during the course of the project

Higher Investor Confidence and FDI in Tourism

After euro adoption, foreign investors are likely to find investing in Bulgaria largely free of currency and financial risks, allowing them to buy or sell assets without exchange

risk and thereby increase their liquidity (Yorgova, 2011) & (AMR – Property BG, 2025). Moreover, with a stable currency, Bulgaria's sovereign and sectoral credit ratings are expected to improve. This could make the country a secure and low-risk destination for investment (Gechev, et al., 2020) & (Marly & Lennkh-Yunus, 2025). As highlighted earlier, after joining the Eurozone, Bulgaria will also need to meet Eurozone's economic and fiscal convergence criteria, which will further reinforce its image as a safe country for investment (Bilyanski & Kirova, 2020). Given this, the country is expected to attract increased investment in franchises, Joint Ventures (JVs), and Foreign Direct Investment (FDI) (Bruno & Estrin, 2021). The greatest advantage for SMHOs is that, with the assistance of investors, expansions and improvements could be done, which will improve operational effectiveness and, consequently, further enhance the tourism industry. The tourist arrivals are also set to increase with the euro's adoption, providing operators with additional revenue possibilities, which further attracts investors.

Improved Cross Border Tourism Collaboration

Tour operators have a strong customer base and for that reason are major drivers of hotel sales (O'Connor, et al., n.d.). Adopting the euro could make cross-border collaboration in tourism easier, and this could make hotels collaborate with international tour operators in joint marketing without concerns about currency exchange obstacles (Timothy & Saarinen, 2013) & (Nicula, 2008). SMHOs can take advantage of this opportunity by developing competitive and appealing packages for foreign tourists, including those from neighbouring countries. Hotels can also collaborate with cross-border event management companies, creating new opportunities to host corporate events and conferences. With a common currency in place, tour operators and event management companies can firmly organize group tours or conferences in Bulgaria, thereby helping hotels improve occupancy levels. Hotel operators can initiate marketing campaigns that highlight euro-denominated rates, making it easier for travellers to compare prices, a common behaviour among them, which could help perceive Bulgaria as a good-value destination (Gallego, et al., 2015). Improving a hotel's service quality alongside marketing initiatives is also crucial to help achieve desired marketing outcomes (Cheraghalizadeh & Dědková, n.d.). Concurrently, hotels can capitalize on their own products and services, including dining and cultural tours, personalized customer service, heritage and cultural immersion, in order to provide a value-added guest experience. Having the chance to cater to new overseas tourists would also be able to increase the customer base and achieve a greater market share. Such collaboration could position hotel operators to better weather market fluctuations and enhance its competitiveness within the Schengen zone and the wider EU tourism market.

CHALLENGES AND ADAPTIVE STRATEGIES FOR SMALL AND MEDIUM-SIZED HOTELS

Increased Payroll Cost

Rising payroll expenses could be one of the challenges SMHOs encounter. While large business can sustain cost expansion, SMEs could be impacted since they have narrow budgets, limited resources and thin margins (Masroor & Asim, 2019). With the adoption of the euro, the cost of living may adjust to Eurozone standards (Kovpak, 2024). Employees may ask for pay increases to keep pace with a rising cost of living, which would increase payroll expenses. Employee wages, as well as benefits and incentives, will also have to be remitted in euro, and rounding discrepancies will further contribute to payroll cost, particularly in mid-sized organizations with 50-100 employees. While large hotel chains may be able to withstand this increase, small and medium-sized hotels may be affected by the burden, as they are subject to strict payroll structures and have slender profit margins. Operators may be impacted by attrition in case their compensation requirements are not being met, and this would negatively impact the quality of service along with the overall customer experience.

To alleviate wage pressure, selective automation and process consolidation is an effective strategy for reducing payroll costs (Ivanov, et al., 2020) & (Dobbelaere, et al., 2025). Hotel operators should identify departmental processes that can be automated. Process automation cuts down on manpower required for the work, and therefore on payroll costs (e.g., utilization of self-check-in/ordering machines). during the period of transition to automation, personnel released from some of the jobs can be reassigned to other tasks instead of recruiting new staff, but this might be feasible in some departments. The payroll challenge can also be resolved by consolidating the processes. It is necessary to identify processes that can be consolidated and administered as a single entity. These processes can be managed by a smaller number of employees once they are merged, which reduces the personnel requirements associated with distinct functions (Puri, 2018) & (Insperty, 2020). Top management can also consider giving salary hike to justify the increase in job responsibilities stemming from process consolidation. When this approach is used, it should be ensured that productivity goals match the actual job roles and that labour laws are followed. Any tasks that might require extra staff should be reviewed to check if they can be managed by the current team. This helps keep staffing costs under control and allows SMHOs to remain flexible as wages change. Offering in-house training, practical experience with hospitality schools, or sponsoring staff for EU-recognised programs can help boost morale to some extent. Non-monetary incentives like learning opportunities, appreciation, and career growth may not replace financial rewards but still make a positive difference in keeping employees motivated and loyal (Qader, 2021), (Arora & Arora, 2024) & (Kooimen, 2025).

Difficult Access to Credit

After the adoption of the euro, access to credit may become more difficult, as banks will have to align their lending behavior with European Central Bank (ECB) policies and monetary management, leading them to tighten lending standards and exercise stricter control over credit risk (Zlatinov, et al., 2023). This could specifically impact small and

medium hotel operators who are seen to have higher credit risk and use flexible financing, hence are likely to be subjected to tight lending standards. Pandemics and seasonal fluctuations are sector-specific risks that endow small and medium-sized hotels with a risky profile and render them visible as a high-risk group to banks (Vivel-Búa, et al., 2018). Therefore, banks may charge a risk premium over the ECB rate when they lend, and that would raise interest rates and would make borrowing harder for those operators with thin margins. Hotel operators may be required to show higher capital adequacy and provide additional collateral, such as audited financial statements or property collaterals valued in euro. Also, Bulgaria will no longer control its own monetary policy and will follow the European Central Bank's decisions, including interest rate changes. As a result, Bulgarian banks must adjust their loan rates in line with ECB decisions, which means interest rates in Bulgaria will also rise, especially for variable-rate loans (Popescu, 2014). Local banks will need to upgrade their systems during the Eurozone transition, which will increase their costs. To finance the cost of implementation or transition, interest rates can be raised further. Once Bulgaria joins the Eurozone, the big global banking giants will move in, but little and medium hotel operators will not get access to them. As a result, they will remain dependent only on local banks, and this situation may allow local banks to capitalize and further increase interest rates. Monopoly or limited competition could allow banks to charge higher rates than in a fully competitive market (Berger, et al., 2017). Because of all these factors, financing will not remain easily accessible for small and medium hotel operators.

Small and medium hotel operators can take various strategic steps to overcome banks' financing challenges. First is to prove consistent cash flow that could assist in minimizing banks' sense of vulnerability. The Statement of Cash Flows is useful for evaluating credit risk because it shows a company's ability to generate cash to meet its financial obligations (Atanasov, et al., 2025). To ensure cash flow level, hotels can run revenue management based promotions, especially during off seasons, that encourage repeat business reservations. Flexible options such as "Book Now, Pay Later," "Pay for Three Nights, Stay for Four Nights," "Book Now, Change Later", "No-fee cancellation" and simple rescheduling, are guaranteed to attract more visitors. Working with event planners and online tour operators can further increase booking opportunities (Graham, 2025), (D-EDGE Hospitality Solutions, 2024), (Tran, 2024) & (expedia group, 2023).

At the same time, operators must focus on improving internal operations and removing customer pain points, since higher service quality generates word of mouth, causing higher footfalls (Candra, et al., 2023), (Laksana & Ekawati, 2020) & (Hunter-Jones, 2016).

Membership of hotel associations is also an extremely effective step, and specifically for new entrants. Associations are generally affiliated with banks, and the loan application and processing can be done speedily. They represent their members and negotiate with the government to implement sector-specific loan schemes that are favorable to their members (Bulgarian Hotel and Restaurant Association, 2023), (Plovdiv hotels union, 2024). Hotel operators can also consider EU financing schemes aimed at small and medium-sized tourism businesses. The EU often rolls out such schemes to help operators overcome capital-related challenges (Ministry of Regional Development and Public Works, 2020). To lower banks' risk concerns, operators can opt for business interruption insurance coverage.

Seasonal business insurance, commercial general liability or product liability insurance can protect businesses from unforeseen liabilities, making them more creditworthy with lenders (RMS Hospitality Group, 2024) & (Allianz, 2024).

Another successful approach would be to take small loans for incremental upgrades and repay them as per schedule. This would build the banking confidence in the company and would increase the probability of taking future top-up loans (Suryani, 2018). Moreover, operators can take finance from foreign institutions such as the European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB), and European Investment Fund (EIF). Though finance is usually released through domestic financial intermediaries or banks, such programs typically involve lower collateral costs, concessionary interest rates, longer maturities, and, in a few cases, subsidization (EBRD, 2025), (European Investment Bank, 2023) & (Kraemer-Eis, et al., 2023).

Higher Implementation Cost

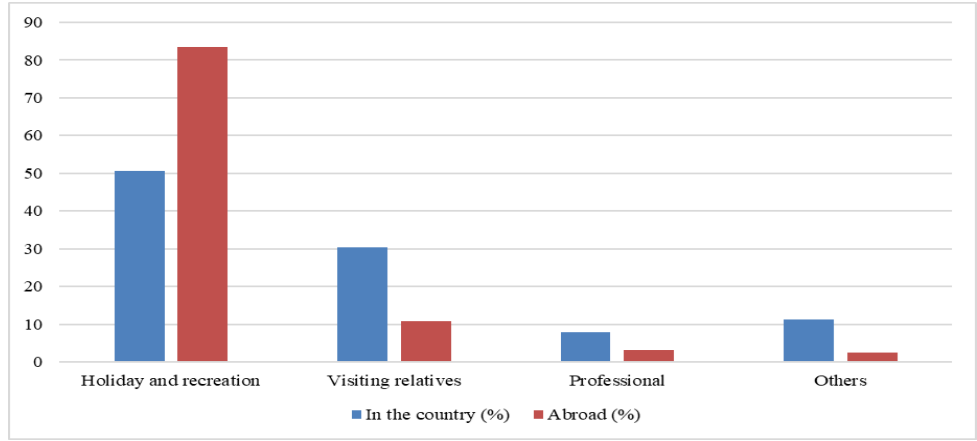
During the stage of adoption, invoices, point-of-sale receipts, booking systems and taxes will also need to be translated into euro-based prices. Machines like cash registers, vending machines, and parking meters will need to be altered in order to accept the euro currency. In the realm of law, supplier contracts, leases, franchise agreements, and service contracts will have to be converted to euro, and values of properties used in collateral obtaining, insurance, or accounting will also have to go through the process of conversion to euro. During the transition phase, financial statements and accounting records will need to be prepared in both lev and euro for audit trails, with all records-including tax reports, carried-forward losses, depreciation schedules, and reserves-shown in euro at the official conversion date. Payroll systems will also need to be adjusted as pay will be impacted by the euro transition. To meet the requirements, software patches and system changes will be required, including updating property management systems to process both local and euro currencies, reforming websites, central reservation systems, and online advertisements. In addition, existing loans will be redenominated to euro (Koleva, 2025) & (Anastasova, 2025). All of these factors together will add substantial implementation costs for hotel operators. Because of heightened government oversight under the lev-to-euro exchange, and increased workload, accounting firms and professional advisors may negotiate higher fees which will contribute to higher operating cost during the transition (Yordanova, 2025) & (tgs BULGARIA, 2025). While some of these expenses will be one-time upfront investments, others will be recurring, creating a financial burden for operators already working on slim profit margins.

In order to overcome this challenge, small and medium hotel owners are able to utilize the services of hotel associations in negotiating with service providers. Update fees for property management systems (PMS) and reservation systems can be reduced when the association offers updates to multiple hotels. The same strategy can be applied to updating contracts and property valuations. This shared approach prevents small operators from bearing high individual consultancy costs. Another sound strategy to reduce the implementation cost is to consider phased hardware upgrade (Nah & Delgado, 2006). The operators could first focus on priority items like reservation and POS systems in order to offset the financial burden. For discretionary hardware, i.e., parking booths or vending

machines, hotels could use plain stickers or temporary price boards with euro translations until full machine upgrade becomes financially feasible. An additional alternative is to negotiate with vendors to include euro-compliance patches as part of annual maintenance contract. This could help avoid separate upgrade fees (Worthen, 2003). Switching to SaaS (software-as-a-service) platforms rather than investing in costly upgrades can also spare upfront IT expenditure (Rrucaj, 2023). Hotel operators should also keep an eye on subsidies, soft loans, or tax allowances offered by the national ministry of tourism for euro conversion fees.

Reduction in Domestic Tourism

In the second quarter of 2025, 50.6% of Bulgarians undertook domestic tourism for various reasons, which was higher than earlier periods (Figure 2) (National Statistical Institute, 2025). The most common reason for travel were holiday and leisure, visiting family (30.3%), business (7.8%), and other reasons (11.3%). Evidence from past euro changeovers, including in Croatia, indicates that although the attendant actual price rises may be relatively small, consumers tend to notice a significant rise in living expenses because prices of commonly bought and service-related items may tend to rise relatively more. Such increases are likely to reduce consumer confidence and prompt households to re-spend, affecting both every day and tourist-related consumption. This can prompt them to seek greater value for money (croatiaweek, 2024), (Mastrobuoni, 2004), (Sturm, et al., 2009), & (Pufnik, 2017). In the transition phase, employees may receive wages in lev while paying for goods and services, including hotel stays, in euro. Moreover, there could be a slight delay in paying salaries in euro, which is common during the transition phase. Due to this change, Bulgarians may reduce their spending on tourism-related activities. Domestic tourists may postpone or cut down on leisure trips, feeling that everyday expenses, including travel and accommodation have increased. This may lead to a decline in domestic tourism, curbing the earning capacity of local hotels.



Source: (National Statistical Institute, 2025)

Fig. 2. Tourist Trips by purposes in the country and abroad, 2025.

In addition, if wages fail to increase in proportion to euro prices, domestic travel demand might be adversely affected in the long run, further impacting the earning capacity of domestic SMHOs. There is also a risk that domestic tourists might prefer to travel to low-cost neighboring countries that continue to use their domestic currency for tourism, which could suppress domestic demand for travel.

The most effective way to retain and attract local travellers is by enhancing the value of their experience through better service quality, flexible pricing, and added benefits such as local discounts or bundled offers. These value-oriented strategies can sustain demand as well as promote domestic travel even if the daily costs seem to be increasing (Dekimpe & Heerde, 2023). This value can be delivered by hotel managers in the form of packaged offers, as discussed earlier. They can also offer room upgrades to domestic travellers based on occupancy, which is a good value-for-money strategy. Membership programs can be initiated for new as well as repeat guests, and they are provided with additional benefits and loyalty. Corporate houses can be approached for tie-ups, both for incentive functions as well as for employee incentive-based stays. Wellness packages, such as spa and relaxation packages, which appeal to both leisure as well as corporate segments, can be marketed as an added attraction. Targeting hotels as wellness centers addresses short-term domestic leisure demand. This not only supports conference packages but also enhances the likelihood for higher accommodation and food and beverage sales. The operators of the hotel can also vary weekday and weekend rates in order to provide a feeling of value to the guests in their reservations. Meanwhile, the employees need to be trained and motivated for providing higher quality services to in-house visitors. Effective leadership and non-monetary rewards, including allowance for meals, flexible work schedules, and recognition of work, will improve morale among employees to deliver excellent customer service (Figueiredo, et al., 2025) & (Rabiul, et al., 2021). In this respect, the hotel manager is at the center, since he or she has ultimate responsibility and accountability for operation efficiency. Superior service and positive guest interactions can create repeat stays and word-of-mouth, further enhancing hotel revenues. Moreover, hotel operators are also able to enhance their profile within the community locally, since guests from within the area also represent an important source of business, especially for food and beverage businesses through restaurants and banquets. To take the community engagement a step further, hotel can invite guests for cake-making or cooking classes with their chefs, which not only draw locals but also increase the property's brand visibility. Intra-province tourism exchange campaigns could help hotel operators increase their visibility. Collaborations between state tourism agencies and other provinces can support local hotels by taking part in or sponsoring such events, putting their hotels in front of more domestic tourists (Timothy & Saarinen, 2013), (Stoffelen & Vanneste, 2017) & (Nowak, et al., 2012). From a business point of view, hotels need to actively promote even small environmental initiatives to their visitors, be it less single-use plastic, locally sourced food, or energy-saving systems. Promotion of these initiatives in marketing campaigns and on-line listings enables them to target sustainability-aware european tourists, thereby enhancing revenue prospects (Kapoor, et al., 2021).

Ensuring Sustainability Amid a Surge in Tourists

Hotel operators expecting a surge in tourists after euro adoption must also focus on catering to today's sustainability-minded travellers, who form an increasingly important segment of the tourism market. Sustainability-minded European and international travellers increasingly prefer to stay in hotels that demonstrate green practices (Fogel, 2022). While SMHOs may have already considered environmental and safety standards when joining the Schengen area or the EU, the expected large influx of tourists encourages them to pay special attention and ensure they meet all sustainability requirements to attract these travellers. SMHOs will need to enhance their infrastructure to the standards of environmental and safety standards and require audits for obtaining certifications, thereby attracting nature-friendly travellers. They will need to ensure Environmental, Social, and Governance (ESG) compliance, perhaps through the hiring of third-party agencies or consultants at potentially increased costs. Without their promotion of sustainability, they will lose market share and cannot expand their customer base, thereby limiting their possible revenues (Khatter, et al., 2019).

In order to counter this challenge, SMHOs must implement compliance on a phased basis so that the cost does not come at one stroke. Operators may start with low-cost yet impactful initiatives to reduce the implementation cost (Nah & Delgado, 2006) & (Bagur-Femenias, et al., 2016). This could include converting to LED lights, fitting water-efficient fixtures, and applying simple waste management systems. All these measures decrease economic burden as well as reflect a true commitment to sustainability. SMHOs can leverage hotel associations to negotiate better rates with suppliers. Trade associations are known to collect the buying power of members, thus allowing small operators access to discounts and good terms that they would not otherwise be able to get were they to buy individually (HOTREC, 2019), (HOTREC, n.d) & (Bhatnagar, 2025). Operators are also able to benefit from EU funding and national grant schemes specifically geared to finance small businesses in the development of environmental and security facilities. Most such programs offer subsidy or low-interest loans on investment in waste disposal systems, renewable energy, or green technology, which can lower the cost (Carlisle, et al., n.d.), (European Investment Bank, 2024) & (Todorović, 2022).

DISCUSSION

Bulgaria's transition to euro is expected to bring a number of benefits for SMHOs but at the same time, it will also introduce certain challenges. On the benefit side, the use of the euro will remove the barrier of currency conversion for international travellers, which can encourage more tourist arrivals in the country. Comparisons across countries will also become easier, and since Bulgaria has traditionally been seen as a low-cost destination, it will be able to use this status to its advantage in attracting visitors. For hotel operators, the shift to the euro will reduce currency conversion risks, which directly affect profitability. Moreover, the potential for enhanced investor confidence is regarded as an additional avenue that will enable the hotels to grow and improve their facilities and services. With these benefits come challenges as well. Payroll costs are expected to increase with

employees demanding more salaries in order to keep pace with Eurozone standards of living. Credit will be harder to access as lenders set stricter terms of lending, and the switching cost such as re-allocating IT infrastructure, re-negotiating contracts, and buying hardware will fall heavier on the operators' shoulders. There is also the possibility of lower domestic demand if domestic tourists see euro-based pricing as being high relative to their earnings. Furthermore, meeting sustainability expectations of sustainability-minded international travellers may necessitate additional investment which could add another layer of pressure for operators. To cope with these challenges, several measures have been identified. A phased introduction of system and financial reforms can facilitate cost diffusion over time, while selective automation can reduce operating costs. The judicious use of EU funds and banking on the collective strength of hotel associations can also provide added strength to operators. The value-added packages and reward schemes can be made available by hotels to safeguard domestic demand. In the meantime, adopting low-cost sustainability measures will help meet expectations of international sustainability-minded travellers without exerting too much financial strain. Overall, that acceptance of the euro involves both challenges and opportunities.

CONCLUSION

Bulgaria is set to adopt the euro, which will be a major milestone for the country. This transition will certainly bring an opportunity for hotel operators to boost their business. With euro adoption, international tourists will be able to enjoy many benefits, and in some way, this will also benefit hotel operators in the form of increased business opportunities, while at the national level the government will benefit through a boost in tourism. However, along with these opportunities, the transition will also bring challenges (Zlatinov, et al., 2023). To address these challenges, SMHOs will have to adopt strategic approaches. The approaches highlighted in this study can potentially help hotel operators in overcoming euro-induced challenges. It is also important to emphasize that the role of local and national hotel associations will be both supportive and significant in helping SMHOs during this phase of transition. In this transition period, some investments required from operators will be one-time in nature, while in the recurring years those investments will gradually reduce. In the very first year of transition, hotel operators may have to make significant financial investments. At the same time, in terms of process changes and improvements, some financial pressure could also be experienced by hotel operators in the area of human resources. Yet, with the right approaches, SMHOs will be able to leverage the advantages of Eurozone membership while at the same time mitigating the drawbacks that come with it. The prospects for SMHOs will depend on how effectively they will be able to withstand the transition and adapt to the new business environment. The overall success of this transition will depend on strong governance, active involvement of local and national hotel associations, and the strategic measures taken by SMHOs to handle financial, operational, and human resource challenges while making the most of the opportunities created by euro adoption environment.

LIMITATIONS AND FUTURE WORK

Though the study provides actionable insights, it has certain limitations. The findings are based on published sources rather than direct field data, and as Eurozone entry is planned for 2026, secondary sources might not accurately capture the full range of future impacts. In addition, ongoing political, economic, and EU policy shifts may affect the long-term outcomes. Future studies may look at the economic, social, and competitive impacts of Eurozone adoption on Bulgaria's SMHOs. Studies examining long-term industry transformation, traveller behaviour, demand trends, and the competitive landscape could also add value.

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THE CONSOLIDATION OF SCHENGEN INTEGRATION THROUGH ADHERENCE TO THE RULE OF LAW

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Abstract

Over 17 years since its accession, Bulgaria's full incorporation into the European Union remains unfinished, notably regarding the Schengen Area. This paper examines the critical link between Bulgaria's domestic institutional reforms and analyses the prospects for its continued development and for deeper EU integration. It argues that persistent challenges in upholding the rule of law and combating corruption have created a trust deficit, acting as the primary political obstacle to full Schengen membership and deeper convergence. The analysis concludes that Bulgaria's future development within the Union is contingent on a renewed domestic commitment to strengthening democratic institutions.

Keywords: EU integration, Schengen Area, institutional reforms, rule of law, corruption, convergence

1. INTRODUCTION

The EU “*sui generis*” has developed an internal single market through a standardised system of laws that apply in all member states in those matters, and only those matters in which members have agreed to act as one. EU policies aim to ensure the free movement of people, goods, services, and capital within the internal market, enact legislation in justice and home affairs, and maintain common trade, agriculture, fisheries, and regional development policies. Passport controls for the Schengen Area have been abolished. A monetary union was established in 1999 and came into full force in 2002. It is composed of 20 EU member states that use the euro.

Bulgaria's accession to the European Union in 2007 was a landmark event, symbolising the country's commitment to democratic values and its integration into the European family. Decades later, Bulgaria's journey towards full integration is finally complete. In January 2025, it was no longer excluded from the Schengen Area. The Schengen Area represents one of the most tangible achievements of European integration, allowing for the free movement of people across participating countries' internal borders. Bulgaria's full membership in Schengen signifies a final seal of approval of its integration process, bringing significant economic and social benefits. The path to Schengen has been fraught with obstacles. Although Bulgaria has technically met the formal criteria for membership for several years, several EU member states have consistently vetoed its accession, citing concerns over the country's progress in upholding the rule of law and combating corruption.

Moreover, the rule of law is crucial in consolidating Schengen integration by ensuring a consistent and fair application of regulations, which fosters stability and predictability in cross-border interactions. The Schengen Agreement, a cornerstone of European integration,

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is deeply embedded in a robust legal framework that is essential for abolition of internal border controls and efficient management of external borders (Felbermayr et al., 2017). This legal foundation safeguards individual rights, particularly regarding free movement, thus reinforcing trust among European citizens and enhancing their sense of a shared European identity (Salomon and Rijpma, 2021).

The role of the rule of law within the Schengen framework in conflict resolution and accountability is a key aspect. Conflicts arising from border control measures, such as those temporarily reintroduced during crises, are addressed by providing dispute settlement mechanisms (Evrard et al., 2018). Such accountability ensures that member states adhere to the commitments of the Schengen framework, which is vital for maintaining compliance and resolving violations (Woude, 2019).

A strong rule of law also bolsters public confidence in the Schengen Area, as citizens are more likely to support integration efforts when a transparent legal system protects and upholds their rights. This confidence is crucial for promoting collaboration among member states, facilitating joint actions, and enhancing overall EU integration (Knippschild, 2011).

Furthermore, adherence to the rule of law during crises, such as the COVID-19 pandemic, has revealed the importance of maintaining integration efforts even when border controls reemerge. Cross-border regions, such as SaarLorLux, underscore the advanced state of European integration and the critical need for a return to normalcy post-crisis (Weber, 2022). However, despite the challenges of the pandemic, the crisis has also demonstrated the potential for positive developments in cross-border cooperation and integration (Weber, 2022).

This paper examined the critical link between Bulgaria's domestic institutional reforms and its prospects for deeper EU integration, with a particular focus on the Schengen Area. It analysed the nature of the challenges that Bulgaria faced "ongoing" in upholding the rule of law and combating corruption and how these challenges have impacted its relationship with the EU. The paper also explores the broader implications of Bulgaria's experience for the EU's enlargement policy and its efforts to promote democratic values in its neighbourhood. The analysis concludes that Bulgaria's future development within the Union is contingent on a renewed domestic commitment to strengthening democratic institutions and rebuilding trust with its European partners.

2. LITERATURE REVIEW

The literature on EU enlargement and post-accession compliance has widely debated the effectiveness of the EU's transformative power. While the pre-accession process is often seen as a powerful tool for promoting domestic reforms, the post-accession period has proven to be more challenging. As Spendzharova and Vachudova (2012) argue in their study of Bulgaria and Romania, the "golden carrot" of EU membership loses its power once a country has joined the club. In the post-accession period, domestic political actors are more likely to backslide on reforms, particularly in areas such as corruption and judicial independence, where they face strong vested interests. This is particularly relevant to Bulgaria's case, where the momentum for reform seems to have paused after 2007.

The concept of "stateness" is also crucial for understanding the challenges faced by Bulgaria. It refers to the state's capacity to effectively govern its territory and population, and to uphold the rule of law. Countries with weak stateness are more likely to struggle with corruption and organised crime, which in turn undermines their ability to meet the EU membership requirements. The EU's own approach to the promotion of the rule of law has also been subject to criticism. Some scholars argue that the conditionality policy of the EU has been inconsistent and has not always been effective in promoting deep and sustainable reforms. The "pathological power" of the EU, as described in the literature, can sometimes lead to superficial reforms that do not address the root causes of the problem. This can create a situation where a country formally complies with EU requirements but fails to internalise the underlying values.

In recent years, the Schengen Area itself has been subject to increasing scrutiny, particularly in the wake of the 2015 migration crisis. As Jabko and Luhman (2019) argued, crises can lead to a reconfiguration of sovereignty in the EU, with member states reasserting their control over their borders. This has made the accession of new members to the Schengen Area even more difficult, as existing members are more cautious about extending the zone of free movement to countries that they perceive as being unable to effectively manage their external borders. The reintroduction of internal border controls by some Schengen members has also raised questions about the future of the Schengen project and the principle of free movement.

The debate over Bulgaria's Schengen accession has been highly politicised. While the European Commission has repeatedly stated that Bulgaria has met the technical criteria for membership, several member states, most notably the Netherlands and Austria, have consistently blocked its accession, citing concerns over corruption and organised crime. This has led to a sense of frustration and disillusionment in Bulgaria, where many feel that the country is being unfairly singled out. However, acknowledging that the concerns raised by other member states are not entirely unfounded is also important. Bulgaria continues to face significant challenges in the areas of rule of law and corruption, which have a direct impact on its ability to contribute to the security of the Schengen Area even though they have now joined the big boys of the Schengen Area.

3. METHODOLOGY

This study employed a qualitative research design, drawing upon a comprehensive review of academic literature, EU policy documents, and reports from international organisations. The primary method of analysis is a critical review of existing literature on EU enlargement, post-accession compliance, the rule of law, and the Schengen Area. The selected articles provided a rich and diverse set of perspectives on Bulgaria's challenges in its path towards full Schengen membership.

The analysis is structured around the central argument that persistent challenges in upholding the rule of law and combating corruption have created a trust deficit, which acts as the primary political obstacle to Bulgaria's full Schengen membership. The paper examined the evidence for this argument by analysing the findings of the selected articles and by relating them to the Bulgarian case. The paper also draws upon a wider body of literature

on democratisation and institutional reform in post-communist Europe to provide a broader context for the analysis.

The research process involved several stages. A systematic search of academic databases was conducted to identify relevant literature. The search terms included "EU integration," "Schengen Area," "institutional reforms," "rule of law," "corruption," "Bulgaria," and "Romania." Second, the selected articles were critically reviewed and analysed in order to identify key themes and arguments. Third, the findings of the literature review were synthesised and organised into a coherent analytical framework. Finally, the paper was written up, with a clear and logical structure, and all sources were properly cited.

4. RESULTS AND DISCUSSION

The rule of law significantly influences the consolidation of Schengen integration by providing a legal and regulatory framework essential for maintaining the core objectives of the Schengen Agreement: the free movement of goods, services, and people. This comprehensive discussion synthesises several retrieved scientific papers that examine the interplay between rule of law, Schengen integration, and the various challenges arising from border control reintroduction.

One of the central themes is the reform attempts within the Schengen Area, which are confronted with constitutional limits. These reforms often arise amid security concerns and tend to reshape Schengen into a predominantly security-cantered project, potentially undermining its foundational role as an identity-creating venture for European integration (Bornemann, 2024). The persistence of temporary border controls since the 2015 refugee crisis challenges the freedom of movement and Union citizenship rights, which are central tenets of the Schengen Area. Such controls contradict the Schengen Borders Code, affecting citizens' perceptions of their European identity and political affiliation to the Union (Salomon and Rijpma, 2021).

The dynamics between national sovereignty and supranational governance present a continuous challenge within the Schengen framework. The Agreement inherently contains a tension between ensuring national security and promoting free movement, leading to a complex "patchwork" of policing strategies. This situation highlights the ongoing struggle between national interests and the broader goals of European integration (Woude, 2019).

The reintroduction of border controls, particularly following crises such as terrorism and the migrant influx, marks a shift towards a "new normal" where these temporary measures become more frequent and extended. Such controls, justified under specific articles of the Schengen Borders Code, simultaneously address security concerns and introduce disruptions to free movement, challenging the foundational principles of the Schengen Area (Evrard et al., 2018; Gülzau, 2021).

The evolving transactional approach of the European Union to the rule of law is evident in its governance strategy, particularly in budgetary spheres. This shift includes conditionalities tied to adherence to the rule of law, which aim to ensure compliance and stability across member states in the face of multiple crises (Thinus, 2024).

5. CONCLUSION

Bulgaria's journey towards Schengen integration, is evident that while significant strides have been made, challenges persist in ensuring compliance with the rule of law across member states. Bulgaria's success in entering the Schengen Area marks a pivotal point in its European integration, reflective of its commitment to aligning with EU standards. However, the path requires continuous enhancement of its institutional capacities and strict adherence to the rule of law. Bulgaria's integration faced hurdles primarily due to the need for robust judicial reforms and improved mechanisms to curb corruption and enhance governance.

The implementation of EU directives necessitates not only legal compliance but practical adherence, where Bulgaria must strengthen its institutional frameworks and administrative capacities. Furthermore, maintaining public confidence and legitimacy in the governance process is crucial for sustaining long-term reforms and compliance.

The analysis in this paper has shown that Bulgaria's future development within the Union is contingent on a renewed domestic commitment to strengthening democratic institutions and rebuilding trust with its European partners. This will require a concerted effort to tackle high-level corruption, reform the judiciary, and to ensure the effective implementation of EU law. It will also require a more proactive and constructive engagement with the EU and its member states will also be required to address their concerns and to build a more positive image of the country.

The EU also plays a role in this process. It needs to develop a more effective and consistent approach to the promotion of the rule of law in its member states, and it needs to ensure that the accession process is fair and transparent. The politicisation of Schengen is a dangerous trend that threatens to undermine the credibility of the European Union and its values. The EU needs to find a way to balance its member states' legitimate security concerns with its commitment to the principle of free movement.

RECOMMENDATIONS

The first and most critical recommendation is the deepening of judicial reforms to ensure the formal independence of the judiciary, but its functional autonomy in practice. This requires moving beyond the establishment of legal frameworks to actively cultivating a judicial culture that is immune to political influence. The key to this is safeguarding the Supreme Judicial Council from covert political pressures in its crucial functions of appointing, promoting, and disciplining judges and prosecutors. This could involve revising its composition to ensure a decisive, non-partisan voice for the professional judiciary and implementing fully transparent, merit-based procedures for all appointments, with published justifications to allow for public scrutiny. Furthermore, robust and independent disciplinary mechanisms must be empowered to effectively investigate corruption within the judiciary, thus building internal accountability.

The second vital area is the enhancement of institutional capacities across the public administration. The primary challenge has shifted from the transposition of EU law into national legislation to its effective implementation and enforcement on the ground. Building a pervasive "culture of implementation" through sustained investment in human capital.

Civil servants, judges, and law enforcement officials require continuous, specialised training on the practical application of complex EU regulations in areas such as environmental protection and financial supervision. Furthermore, accelerating the state's digital transformation is paramount; by reducing bureaucratic discretion and facilitating data interoperability between agencies, digitalisation can foster a "whole-of-government" approach to EU policy. Strengthening internal and external audit bodies is also crucial to ensure that EU funds are not only spent legally but are also effective in delivering tangible developmental results.

Third, combating corruption must evolve from a reactive to a systemic and preventive approach, targeting the very networks that enable it. Public procurement is a key vector for corruption, which should be fully digitalised through a central, transparent platform with open data for civil society monitoring. A reliable system for debarring corrupt companies from future public tenders must be established and enforced. Beyond procurement, integrity systems, particularly those concerning conflicts of interest, need strengthening. This involves moving from a passive system of asset declaration to one of proactive verification, where an independent body has the mandate and resources to scrutinise high-level officials' wealth declarations. Strictly enforcing "cooling-off" periods for public officials moving into the private sector they once regulated is also essential to prevent the capture of the state by special interests.

Fourth, Bulgaria must strategically engage with transnational networks to leverage European synergies for technical and political support. The country should not navigate the complex post-accession landscape in isolation. Active participation in formal networks like the European Judicial Network and the European Network of Councils for the Judiciary, can foster a common European judicial culture and facilitate joint investigations. Similarly, integrating Bulgarian regulatory agencies for energy, finance, and communications into their respective EU counterparts promotes peer-to-peer learning and ensures the consistent application of EU-wide standards. Utilising existing EU instruments like twinning programmes and TAIEX, for long-term partnerships between Bulgarian ministries and those in member states with strong administrative traditions can provide invaluable hands-on expertise and build lasting institutional linkages.

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HOW CONSUMERS PERCEIVE AI-GENERATED VS HUMAN CREATED BRAND VISUALS

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Abstract

Generative Artificial Intelligence is progressively utilized to enhance many functions throughout the business world. Marketing and communication are no exception to this. Technology is improving constantly, which is also raising a question on how the consumer's perceive visual banners created by generative AI compared to the ones created by humans. This paper reports an experimental study that compares two banner advertisements for FMCG brand – one created by the company's creative staff and the other generated using ChatGPT and DALL·E. The study utilizes three recognized measuring scales: perceived authenticity, brand identity clarity, and consumer engagement. The objective is to investigate the impact of algorithmically generated visual advertising on consumer perception and emotional response in B2C brand communication in Bulgaria. The research delivers factual insights into the changing use of AI in advertising. It also presents practical recommendations for marketers and businesses adapting to hybrid creative approaches.

Keywords: Generative AI, advertising, brand banners, brand communication, consumer perception

JEL: M31, M37, O33

INTRODUCTION

With the emergence of more and more innovations, communication strategies are undergoing significant changes. Among them, many marketers need to adapt their message creation methods to be on the “top of the mountain”. Among them – advertising banners remain a key visual tool in brand communication strategies. With their highly impactful visual messages, banners are designed to attract attention, convey key product qualities and strengthen brand associations within seconds. In this digital era, the banners also support the brand's strong involvement in the concept of storytelling. Traditionally, such visual assets were conceived and created by creative professionals – graphic designers and copywriters, who tailored the visual style to the brand's tone and marketing objectives. The development of generative artificial intelligence, including technologies such as ChatGPT and DALL·E, is already beginning to transform this process. Brands are currently using technologies to develop banner content, automating both visual components and messages with increasing complexity. While AI offers benefits it also raises significant questions about end-user perceptions of AI-generated content, as opposed to traditional designs created by humans and design teams.

The current study examines how consumers perceive banner ads, on the one hand, created by AI, and on the other hand, created by humans/design teams. The applied methodology and analysis focus on three key perceptual dimensions: authenticity, clarity of brand identity, and consumer engagement. The following research questions and hypotheses were

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developed to guide the empirical investigation and address the study’s objectives regarding consumer perceptions of AI- and human-generated brand visuals (*Table 1*). In line with standard statistical procedures, all three research hypotheses were tested against corresponding null hypotheses (H0).

Table 1. Research Questions and Hypothesis of the study

Research Question (RQ)	Corresponding Hypothesis (H)
RQ1: <i>Do consumers perceive a difference in authenticity between human- and AI-generated brand visuals?</i>	H1: <i>There is a significant difference in perceived authenticity between AI-generated and human-generated brand visuals.</i>
RQ2: <i>Do consumers perceive a difference in brand identity clarity between the two types of visuals?</i>	H2: <i>There is a significant difference in perceived brand identity clarity between AI-generated and human-generated visuals.</i>
RQ3: <i>Is there a difference in the level of consumer engagement with AI- versus human-generated visuals?</i>	H3: <i>There is a significant difference in consumer engagement between AI-generated and human-generated visuals.</i>

Source: Author’s visualization

LITERATURE REVIEW

Innovation has arrived and is already transforming numerous aspects of our life. The transformation process covers business and its management operations, requiring the adaptation of strategies and techniques in order to maintain competitiveness. In this dynamic digital age, the marketing mix framework has developed from the conventional 4P model (product, price, place, promotion) to include more comprehensive factors in company (Mujiyanti, Malindha, Lestari, & Yulisetiarini, 2019). This shift is particularly evident in banner advertising, where visual identity and promotional clarity must coexist across traditional and digital channels. In the marketing literature, the term “banner” is defined as a composite of graphical and textual advertising elements, presented either in physical formats, such as printed outdoor or event banners, or in digital formats, including web- or application-based banners (Amer, Johnson, & Johnson, 2017). These advertising tools principally seek to attract and hold viewers' attention. In the digital context, banners frequently incorporate hyperlinks that redirect users to the advertiser’s content or website. The primary objectives of banners are to increase brand awareness, drive traffic to physical or online stores, and to stimulate user engagement (Voorveld, van Noort, Muntinga, & Bronner, 2018). While traditional banners relied on physical media and fixed layouts, on the other side – digital visual demand interaction, consistency of brand features, and real-time adaptability. Studies confirm that banners high simplicity are more effective then overly complex designs, which all business nowadays wants (Bocaj & Ahtik, 2023).

Nowadays, when preparing any campaigns, brands also produce banners, with which they additionally inform consumers about their promotions, products, unique campaigns or simply to communicate with them. Their strength lies in the visual clarity, convincing messages (attention) and emotional impact (tone) and the outcoming influence on consumers (Nguyen, Coursaris, Léger, Sénécal, & Fredette, 2020). It is important to note that banner ads are not stand-alone artifacts. They rely heavily on synergistic collaboration between copywriters, designers, and marketers. As Kartisivadze (2022) argues, copywriting is a

strategic and creative tool that determines how quickly a consumer will engage with a visual narrative – especially on dynamic platforms like social media. The textual and visual cohesion in a banner ad determines its memorability, emotional tone, and clarity of the call to action (Kartsivadze, 2022). Copywriting becomes even more powerful when integrated with visuals that reflect the brand's authenticity and contemporary aesthetics.

With the increasing amount of digital content and the decreasing attention span among consumers, especially Generations Z and Alpha, companies demand fast and visually coordinated results from their teams, leading to the widespread use of creative technologies. Platforms such as Adobe Creative Suite, Figma, Sketch, and Canva have allowed both pros and enthusiasts to design banners with efficiency and visual consistency. Such tools represent a new category of "creative enablers" – bridging the gap between professional aesthetics and content production at a fast pace (Ortiz Ospino, González Sarmiento, & Roa Perez, 2025). The tools are used by both professionals and non-designers with the idea of producing visually coherent, brand-aligned banners with increased efficiency. Studies confirm that the use of the design tools significantly improves the perceived quality and diversity of visual content, particularly in marketing and educational contexts (Ibrahim, Chandra, Saari, Prasetyaningrum, & Pratama, 2023).

As this rapid innovation transition continues, creative agencies are no exception. Ceccotti et al. (2024) emphasize that agencies are increasingly expected to deliver flexible and scalable content tailored for media buying, personalization, and omnichannel engagement (Ceccotti, Vernuccio, Mattiacci, & Pastore, 2025). Moreover, creative products themselves are being reshaped through digital lens. With the increasing need for personalization and specific targeting, as well as the need for quick execution, display advertising is evolving from an asset with a static physiology to a dynamic and data-driven design component within the consumer journey (Zwillenberg, et al., 2014). This progress naturally encourages the move towards the use of artificial intelligence in advertising, where the effectiveness relies heavily on context and congruence. An experiment reveals that banners aligned with page content drive longer fixation durations, higher brand awareness, and better product recall – underscoring the strategic role of banners as context-sensitive communication tools (Saowwapak-adisak, Mongkolnavin, & Rattanawicha, 2015).

Artificial intelligence is increasingly being implemented into marketing processes. Technologies such as generative AI and chatbots allow marketers to automate creative tasks and personalize content in real time, making them particularly useful in creating advertising campaigns (Fofana, Vel Sung, & Rani, 2025). In banner advertising, this means faster production of visuals, improved contextual relevance, and enhanced emotional resonance with consumers, turning static ads into dynamic communication tools. Mirwan et al. (2023) emphasize that AI allows brands to optimize marketing strategies by processing data in real time, automating workflows, and personalizing messages based on behavioral and psychographic analyses (Mirwan, Ginny, Darwin, Ghazali, & Lenas, 2023). With such insights, digital banners can be iterated and synchronized with the campaign idea, without wasting time on briefing, conceptualization, and practical implementation of the idea into a final version. Systems powered by AI can now recommend not only the ideal visual format, but also the emotional tone, call to action and the time for maximum impact for a given

campaign. Thus, the technology contributes to more contextually relevant and user-oriented advertising, which saves enormous amounts of resources.

In addition to increasing efficiency and optimization, generative AI is fundamentally transforming the nature of creativity in advertising practice. The technology facilitates the generation of synthetic content across all types of content, like text, image, voice, and video, leading to the emergence of “computational advertising”. This is a concept that is increasingly used today to illustrate how AI is replacing the creative workforce for humans (Sicilia, Palazón, & Acosta, 2025). Banner ads themselves can now be crafted not only with personalized messaging in a fast manner, but also to simulate authenticity and emotional impact through AI-enhanced strategies. Creative work in advertising is no longer limited to traditional idea generation but is increasingly guided by algorithmic interpretation of audience preferences, which can be analyzed with the wealth of data from the internet.

METHODOLOGY

Research design

The current study applies a comparative experimental design to explore how consumers in Bulgaria perceive advertising banners generated by humans versus those created using generative artificial intelligence. The experiment focuses on a single FMCG brand – „Coca-Cola“ in order to maintain consistency across brand familiarity and product category. Two distinct banner ads were used – one was created by the brand's internal creative team, and the other one generated using ChatGPT (text creation) and DALL·E (image creation). The topic of the banners is regarding summer campaign in 2025 (as well as the logic of the selection), so it is used the current for the study summer campaign of the brand, plus one conducted with the following script (input) towards the generative technology: *“Please create a banner with a summer look, along a beach, where the original Coca-Cola and Coca-Cola Zero bottles can be placed. Let it compete with the given banner; which I will place with this prompt, which is the brand's current summer campaign”* – see Figures 1 and 2.



Fig. 1. Banner A – Generated by AI

Source: Instagram banner – July, 2025



Fig. 2. Banner B – Created by the companies’ creative team

Source: Instagram banner – July, 2025

Slogan of Banner A: “Share the moment with your closest” Slogan of Banner B: “Share Coca-Cola”

The study in nature is quantitative, using a structured online survey to collect data from participants, who were randomly assigned to evaluate both banners. The primary goal is to capture differences in perceived authenticity, clarity of brand identity, and consumer engagement, which includes both cognitive and emotional responses.

Survey development and scales for measurements

All responses were collected anonymously with informed consent. Participation was voluntary, and respondents were informed of their rights and the study’s purpose before beginning the survey. The structure of the survey is as follows – 4 sections were created.

The First is a screening section, the answer to which screens out the respondents. It is based on whether the respondents have interest and pay attention to advertising banners.

The following sections – number Two and Three are identical, consisting of 3 groups with 3 questions, each, on the following scales for Banner A and Banner B: authenticity, brand identity clarity, and consumer engagement. The three scales were adapted from previous research to fit the context of digital visual advertising. Responses to those questions were collected on a 7-point Likert scale (1 = Strongly Disagree, 7 = Strongly Agree) – see Table 2 and 3.

Table 2. Overview of Items and Dimensions Across the Three Constructs

Scale	Item Code (Banner A / Banner B)	Item Statement	Dimension
Perceived Authenticity	B2.1 / B5.1	<i>This banner looked natural.</i>	<i>Visual authenticity</i>
	B2.2 / B5.2	<i>The banner's message seemed sincere.</i>	<i>Message sincerity</i>
	B2.3 / B5.3	<i>This banner appeared carefully crafted and de- tail-oriented.</i>	<i>Perceived effort / real- ism</i>
Brand Iden- tity Clarity	B3.1 / B6.1	<i>This banner clearly shows the brand's style.</i>	<i>Style communication</i>
	B3.2 / B6.2	<i>It is easy to understand the mood or feeling the banner is trying to create.</i>	<i>Emotional tone clarity</i>

Scale	Item Code (Banner A / Banner B)	Item Statement	Dimension
	B3.3 / B6.3	<i>I can easily recognize what type of brand stands behind this banner.</i>	<i>Brand category recognizability</i>
Consumer Engagement	B4.1 / B7.1	<i>The banner captured my attention.</i>	<i>Cognitive engagement</i>
	B4.2 / B7.2	<i>This banner triggered an emotional response in me (e.g. smile, joy, nostalgia).</i>	<i>Emotional engagement</i>
	B4.3 / B7.3	<i>This banner is something I would remember.</i>	<i>Combined engagement – memorability</i>

Source: Author's visualization

Table 3. Conceptual Foundations and Contextual Adaptations of the Measurement Scale

Scale	Theoretical Foundation	Key Adaptation in This Study
Perceived Authenticity	<i>(Napoli, Dickinson, Beverland, & Farrelly, 2014) (Coary & Oakley, 2018)</i>	<i>Focus on natural look, sincerity, and perceived effort of the banner</i>
Brand Identity Clarity	<i>(Montecchi, Plangger, West, & de Ruyter, 2024)</i>	<i>Adapted to assess conveyed style, emotional tone, and category recognizability in a visual advertising context</i>
Consumer Engagement	<i>(So, King, Sparks, & Wang, 2016)</i>	<i>Simplified items capturing attention, emotional response, and memorability in the context of banner evaluation</i>

Source: Author's visualization

The last section (Number Four) of the survey consists of two demographic questions.

Participants under the age of 18 were excluded from the analysis due to ethical and representativeness considerations. The final sample consisted of 258 respondents aged over 18. The data was analyzed with the statistical software by IBM – SPSS.

RESULTS AND ANALYSIS

To begin the analysis, the reliability of the three measurement scales: "Perceived Authenticity", "Brand Identity Clarity", and "Consumer Engagement" – were assessed separately for each banner condition. Cronbach's alpha was computed for each scale to assess internal consistency and validate the reliability of subsequent comparative and correlational analyses (Cronbach, 1951) (Alkhadim, 2022).

Perceived Authenticity

As shown in Table 4, the reliability of the "Perceived Authenticity" scale was high across both banner conditions. Cronbach's alpha for **Banner A (AI-generated visual)** was $\alpha = .852$, while for **Banner B (human-generated visual)**, the value was slightly higher at $\alpha = .871$. Both coefficients exceed the commonly accepted threshold of .70 for acceptable internal consistency, confirming good reliability for the scale.

Table 4. Reliability of the “Perceived Authenticity” Scale for Each Visual Condition

Reliability Statistics – Banner A			Reliability Statistics – Banner B		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,852	,852	3	,871	,871	3

Source: Author’s visualization via SPSS

In addition to the internal consistency, the descriptive statistics for the “Perceived Authenticity” scale were calculated for each visual condition. For Banner A (AI-generated visual), the scale had a mean score of 12.46 (SD = 5.11), while Banner B (human-generated visual) had a lower mean of 9.63 (SD = 4.91). These results indicate that participants perceived the AI-generated banner as more authentic on average compared to the human-generated one, although both conditions demonstrated considerable variability in responses (Table 5).

Table 5. Descriptive Statistics for the “Perceived Authenticity” Scale

Scale Statistics – Banner A				Scale Statistics – Banner B			
Mean	Variance	Std. Deviation	N of Items	Mean	Variance	Std. Deviation	N of Items
12,46	26,125	5,111	3	9,63	24,087	4,908	3

Source: Author’s visualization via SPSS

By that, H1 and corresponding null hypothesis H0 for “Perceived Authenticity” are formulated. To assess the distributional characteristics of the data, normality tests were conducted for both conditions of the perceived authenticity scale with Kolmogorov-Smirnov and Shapiro-Wilk tests. The results indicated significant deviations from normality for both variables (Kolmogorov-Smirnov: $D = .093$ and $D = .121$, $p < .001$; Shapiro-Wilk: $W = .962$ and $W = .938$, $p < .001$, respectively). Given these findings, non-parametric methods were employed in subsequent hypothesis testing since both tests indicate significant deviations from normal distribution for AI- and human-generated banner conditions ($p < .001$) (Table 6).

To test the hypothesis that there is a significant difference in perceived authenticity between the AI-generated and the human-generated banner, a non-parametric test – Wilcoxon Signed-Rank Test was conducted. The results revealed a statistically significant difference in perceived authenticity between the two banners ($Z = -7.099$, $p < .001$). Specifically, the AI-generated banner was rated significantly higher in perceived authenticity compared to the one from human (Table 7 and Table 8). These results suggest that generative AI can not only match but potentially surpass human-created content in conveying authenticity, supporting H1.

Table 6. Results of Normality Tests on Perceived Authenticity**Tests of Normality – Perceived Authenticity**

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig. (p)	Statistic	df	Sig. (p)
Perceived Authenticity – AI-generated banner	,093	258	,000	,962	258	,000
Perceived Authenticity – Human-generated banner	,121	258	,000	,938	258	,000

Source: Author's visualization via SPSS

Table 7. Summary of Ranks for Perceived**Ranks – H1**

		N	Mean Rank	Sum of Ranks
Perceived Authenticity – Human-generated banner and Perceived Authenticity – AI-generated banner	Negative Ranks	163 (a)	129,43	21097,00
	Positive Ranks	71 (b)	90,11	6398,00
	Ties	24 (c)		
	Total	258		

*a. Human-generated banner < AI-generated banner**b. Human-generated banner > AI-generated banner**c. Human-generated banner = AI-generated banner***Table 8.** Wilcoxon Signed-Rank Test Authenticity Scores between Banners Statistics for Perceived Authenticity**Test Statistics (b) – H1**

	Perceived Authenticity – Human-generated banner – Perceived Authenticity – AI-generated banner
Z	-7,099 (a)
Asymp. Sig. (2-tailed)	,000

*a. Based on positive ranks.**b. Wilcoxon Signed Ranks Test*

Source: Author's visualization via SPSS

Brand Identity Clarity

As with the previous scale, the assessment of the brand identity clarity criterion begins with a reliability test using Cronbach's Alpha. For the AI-generated banner (Banner A), the reliability coefficient was $\alpha = .850$, indicating very good internal consistency across the three items. Similarly, the human-generated banner (Banner B) demonstrated a slightly lower internal consistency, with Cronbach's Alpha reaching $\alpha = .846$. The scale is reliable for both visuals (Table 9).

Table 9. Reliability of the "Brand Identity Clarity" Scale for Each Visual Condition**Reliability Statistics – Banner A**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,850	,850	3

Reliability Statistics – Banner B

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,845	,846	3

Source: Author's visualization via SPSS

Descriptive statistics were also calculated to explore average perceptions of brand identity clarity in the two visual contexts. The AI-generated banner (Banner A) produced a higher mean score of 15.49 (SD = 4.701), compared to the human-generated banner (Banner B), which scored a mean of 12.88 (SD = 4.923). Although both groups showed comparable levels of variability (Variance = 22.095 for Banner A; 24.235 for Banner B), the difference in mean scores suggests that participants generally perceived the AI-generated brand identity as clearer (Table 10).

Table 10. Descriptive Statistics for the “Brand Identity Clarity” Scale

Scale Statistics – Banner A				Scale Statistics – Banner B			
Mean	Variance	Std. Deviation	N of Items	Mean	Variance	Std. Deviation	N of Items
15,49	22,095	4,701	3	12,88	24,235	4,923	3

Source: Author’s visualization via SPSS

H2 is formulated, as well as corresponding null hypothesis H0 for perceived “Brand Identity Clarity”. Normality tests were conducted for this scale as well for both visuals using the Kolmogorov-Smirnov and Shapiro-Wilk tests. The results are summarized in Table 11. For the AI-generated banner, both tests indicated statistically significant deviations from a normal distribution (Kolmogorov-Smirnov: $D = .161$, $p < .001$; Shapiro-Wilk: $W = .911$, $p < .001$). Similarly, for the human-generated banner, the Shapiro-Wilk test also indicated non-normality ($W = .970$, $p < .001$), while the Kolmogorov-Smirnov test showed a smaller but still significant deviation ($D = .066$, $p = .008$).

Table 11. Results of Normality Tests on Brand Identity Clarity

	Tests of Normality – Brand Identity Clarity					
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig. (p)	Statistic	df	Sig. (p)
Perceived Brand Identity Clarity – AI-generated banner	,161	258	,000	,911	258	,000
Perceived Brand Identity Clarity – Human-generated banner	,066	258	,008	,970	258	,000

Source: Author’s visualization via SPSS

The results of the Wilcoxon Signed-Rank Test reveal a statistically significant difference in the perceived brand identity clarity between the human-generated and AI-generated banners ($Z = -7.820$, $p < .001$). A clear majority of respondents perceived the AI-generated banner as offering greater brand identity clarity. These findings support Hypothesis 2, indicating that there is indeed a significant difference in how brand clarity is interpreted across the two banners – with a notable advantage in favor of the AI-generated visual (Tables 12 and 13).

Table 12. Summary of Ranks for Brand Identity Clarity Scores between Banners

Ranks – H2		N	Mean Rank	Sum Rank
Perceived Brand Identity Clarity – Human-generated banner – Perceived Brand Identity Clarity – AI-generated banner	Negative Ranks	171 (a)	121,84	20834
	Positive Ranks	57 (b)	92,49	
	Ties	30 (c)		
	Total	258		

a. Human-generated banner < AI-generated banner

b. Human-generated banner > AI-generated banner

c. Human-generated banner = AI-generated banner

Table 13. Wilcoxon Signed-Rank Test Statistics for Brand Identity Clarity

Test Statistics (b) – H2	
	Perceived Brand Identity Clarity – man-generated banner – Perceived Brand Identity Clarity – AI-generated banner
Z	-7,820 (a)
Asymp. Sig. (2-tailed)	,000

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Source: Author's visualization via SPSS

Consumer Engagement

To assess the internal consistency of the consumer engagement scale across both visual conditions, Cronbach's alpha was calculated again. The scale showed excellent reliability in both cases: $\alpha = 0.911$ for AI-generated visuals and $\alpha = 0.918$ for human-generated visuals, each based on three items (Table 14).

Table 14. Reliability of the "Consumer Engagement" Scale for Each Visual Condition

Reliability Statistics – Banner A			Reliability Statistics – Banner B		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,911	,911	3	,918	,918	3

Source: Author's visualization via SPSS

Descriptive statistics for the perceived consumer engagement scale show that the AI-generated banner ($M = 10.37$; $SD = 5.25$) received slightly higher average engagement ratings compared to the human-generated banner ($M = 9.14$; $SD = 5.29$). These initial descriptive insights suggest a small difference in favor of the AI visual in terms of perceived engagement, which will be further examined through normality testing and inferential analysis (Table 15).

Table 15. Descriptive Statistics for the “Consumer Engagement” Scale

Scale Statistics – Banner A				Scale Statistics – Banner B			
Mean	Variance	Std. Deviation	N of Items	Mean	Variance	Std. Deviation	N of Items
10,37	27,603	5,254	3	9,14	27,978	5,289	3

Source: Author’s visualization via SPSS

We formulate H3 and the corresponding null hypothesis H0 for perceived “*Consumer Engagement*”. Normality tests were conducted for this scale across both visual conditions using the Kolmogorov-Smirnov and Shapiro-Wilk methods. The results are summarized in Table 16. For the AI-generated banner, both tests indicated statistically significant deviations from a normal distribution (Kolmogorov-Smirnov: $D = .111$, $p < .001$; Shapiro-Wilk: $W = .944$, $p < .001$). Similarly, the human-generated banner also deviated significantly from normality (Kolmogorov-Smirnov: $D = .123$, $p < .001$; Shapiro-Wilk: $W = .911$, $p < .001$).

Table 16. Results of Normality Tests on Consumer Engagement

Tests of Normality – Consumer Engagement						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig. (p)	Statistic	df	Sig. (p)
Engagement_AI	,111	258	,000	,944	258	,000
Engagement_Human	,123	258	,000	,911	258	,000

Source: Author’s visualization via SPSS

The results from the conducted Wilcoxon Signed-Rank Test indicated a statistically significant difference between the AI-generated and human-generated banners ($Z = -3.02$, $p = .003$), with the AI-generated banner yielding slightly higher engagement scores. Specifically, 130 respondents rated the AI-banner higher, while 86 rated it higher, and 42 responses were tied. These findings support Hypothesis 3, suggesting that the AI-generated visual was perceived as more engaging, on average of course, than the human-created one (Table 17 and 18).

It can be concluded in this analysis that the results of the statistical analyses provide consistent support for all three proposed hypotheses. AI-generated banners were perceived as significantly more authentic (H1), offered higher brand identity clarity (H2), and elicited greater consumer engagement (H3) compared to human-generated banners. These findings underline the growing effectiveness and perceptual advantages of AI-generated visuals in shaping consumer perceptions across multiple brand-related dimensions.

Table 17. Summary of Ranks for Consumer Engagement Scores between Banners
Ranks – H3

		N	Mean Rank	Sum of Ranks
Perceived Consumer Engagement – Human-generated banner – Perceived Consumer Engagement – AI-generated banner	Negative Ranks	130 (a)	111,46	14489,50
	Positive Ranks	86 (b)	104,03	8946,50
	Ties	42 (c)		
	Total	258		

a. Human-generated banner < AI-generated banner

b. Human-generated banner > AI-generated banner

c. Human-generated banner = AI-generated banner

Source: Author's visualization via SPSS

Table 18. Wilcoxon Signed-Rank Test Statistics for Consumer Engagement

Test Statistics (b) – H3	
	Perceived Consumer Engagement – Human-generated banner – Perceived Consumer Engagement – AI-generated banner
Z	-3,019 (a)
Asymp. Sig. (2-tailed)	,003

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

CONCLUSION AND FUTURE DIRECTIONS

This study examines how consumers perceive brand visuals by displaying two banners on a given theme. One was created by generative AI, and the other was created by human designers using a quick-turnaround product, applying three validated measurement scales: perceived authenticity, brand identity clarity, and consumer engagement. The results reveal that the AI-generated banner handily outperformed the human-generated visual on all three dimensions, with statistically significant results. These insights demonstrate that generative AI not only has the capacity, but has matured to a level where it not only complements, but in certain contexts surpasses, traditional creative approaches in terms of perceived effectiveness. The study provides empirical evidence that AI-generated visuals can evoke a sense of authenticity and emotional resonance, clarify brand identity, and drive consumer engagement. This challenges commonly held assumptions about the superiority of human creativity in visual storytelling and opens new discussions about the role of automation in strategic brand communication.

This research offers valuable insights for the practice of marketers, brand strategists, and designers who seek to understand the evolving role of AI in visual branding and communication. This is necessary because consumer habits and perceptions are constantly changing. Future research should explore cross-cultural and industry-specific contexts to carefully analyze perceptions across different approaches and target groups. The research lays a solid, empirically based foundation that will serve as a substantial part of the author's upcoming dissertation, contributing to the academic discourse on the intersection of AI and

human creativity in communication. Despite the promising results, the findings prompt important considerations about the broader implications of AI-powered design.

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CREATING VALUE THROUGH INNOVATION. PASONA NATUREVERSE AND FUTURE CITY IN EXPO 2025 OSAKA

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Abstract

The report examines the 2025 World Expo in Osaka, Kansai, and the ways in which it contributes to the popularization of Japan's concept of Society 5.0. The focus of the report are the two pavilions – PASONA NATUREVERSE and Future City. Data was gathered personally by the author as an official participant in the Expo during the month of July via pavilion visits and interviews with pavilion staff and the deputy pavilion director of Future City. The aim is to showcase the ways in which the ideas and prototypes exhibited in the pavilions could help create value in everyday life and contribute towards a more sustainable human society.

Keywords: Japan, Expo 2025, Society 5.0, Innovation

Scientific area: Innovation, entrepreneurship and digital transformation

JEL classification: O03

INTRODUCTION

Ever since the Industrial revolution technological progress has been closely linked to the improvement of human lives. Humanity's transition towards Society 4.0 and the Digital age during the second half of the last century sped up the process by a considerable amount with the pace of acceleration increasing as time went on. Just over the last decade technology previously thought impossible not only came into existence but became widespread in everyday life. From devices blending the physical reality with the virtual space like VR sets and AR goggles to AI assistants with access to the entire information on the Internet tailored to the user's interests and personality – technology has been integrated into our daily lives like never before.

The availability of such innovation however begs the question – what devices will we have access to in just another ten years? It is this question that countries and companies from around the world seek to give an answer to during Expo 2025 in Osaka – the latest World Expo organized by the *Bureau International des Expositions* that is taking place in Osaka from the 13th of April to the 13th of October 2025. During the six-month period visitors were able to take part in a microcosm of what the society of the future could be like. The pavilions of the different countries are usually created to showcase the given country as well as its contribution towards innovation and sustainable development, usually with one main topic – the USA with their space program, the Netherlands with sustainable water consumption and so on. Pavilions hosted by companies, however, are built around the given company's vision for the future and oftentimes contain working prototypes of innovations

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that the host company is aiming to make widespread. Two examples of such pavilions are *PASONA NATUREVERSE* and *Future City*.

The aim of this report will be to briefly introduce the 2025 World Expo in Osaka and to examine the ways in which the showcased innovations can help create value in different aspects of human life. Emphasis will be placed on the pavilions *PASONA NATUREVERSE* and *Future City* as the author believes their content is most closely related to the topic of progress and innovation. Information was gathered firsthand by the author during the month of July via personal guided tours of the two pavilions as well as a non-structured interview with Mr. Koichi Nishimura, executive director of *Future City*.

EXPO 2025, ITS GOALS AND BULGARIA'S PARTICIPATION

The primary topic of Expo 2025 is “*Designing Future Society for Our Lives*” – a relevant topic directly connected to the Japanese concept of Society 5.0. The topic itself is divided into three subtopics, each of which takes up considerable ground on the Expo site and hosts roughly one third of the participating countries’ pavilions. *Saving Lives* seeks to answer the question of how we can protect the welfare of future generations, *Empowering Lives* provides ideas on balancing our aim for happiness and prosperity with widespread access to necessities and finally *Connecting Lives* showcases ways to enrich our society through the power of both culture and community. The three subtopics were directly inspired by the United Nations’ 17 Goals for Sustainable Development and many pavilions such as for example the EU pavilion are built with sustainability in mind (JAWE, 2020).

The topic of the Expo was chosen and approved during the height of the 2020 global COVID-19 pandemic. Due to the pandemic and its consequences, the divide between people and nations and the need to restructure existing social environments became exacerbated. As a result, “*Designing Future Society for Our Lives*” becomes not just a simple topic, but a mission for both organizers and participants in the Expo. The topic seeks to not only encourage participating countries to create a more stable and sustainable international community but also to inspire visitors to reevaluate the way in which they lead their lives and potentially change it for the better.

Bulgaria is one of the countries taking part in Expo 2025 with its own pavilion. Placed in the “*Saving Lives*” zone, Bulgaria’s pavilion is centered around the country rich history, Bulgaria-Japan relations and the ways in which Bulgarian lactobacteria can contribute to global health initiatives. The pavilion itself is divided into two halves – “*Past and Present*” and “*Future*”. The former educates visitors on Bulgarian history, notable Bulgarian innovations, the partnership between the country and Japan starting at the 1970 Osaka World Expo and introduces the main character of the second half – the lactobacteria Lacto-chan. In the “*Future*” zone visitors are treated to an immersive experience of a futuristic world, brought about with the help of Bulgarian innovation. The presentation concludes with Lacto-chan encouraging guests to leave a message for the next group while at the same time the messages of the previous group are projected on the surrounding walls.

All throughout the 6 months of the Expo the Bulgarian pavilion was met with critical acclaim with daily visits during the month of July being in the 1900-2000s range. The pavilion was also host to several prominent visitors including but not limited to –

representatives from Meiji, multiple Bulgarian companies and even Her Imperial Highness Princess Takamado, a member of the Japanese Imperial family (Ministry of Foreign Affairs, 2025). The pavilion also earned a good deal of awards, the most recent of which is first place in the Best Mascot competition with the aforementioned Lacto-chan who captured the hearts of both children and adults alike (Marinova & Petrishki, 2025).

PASONA NATUREVERSE

Towards the end of his stay at the World Expo in July the author was able to visit the PASONA NATUREVERSE pavilion as part of the International Talent Info Session, hosted by Pasona Group. Donning the slogan “Thank you, Life”, the pavilion showcases working prototypes that create value in the healthcare sector and can become widespread as soon as 2030 due to them being almost perfected. The term “NATUREVERSE” itself is imbued with Pasona’s desire for “harmony between nature and technology” in humanity’s development – a principle that is core to the concept of Society 5.0. The pavilion’s architectural design adopts the spiral shape of an ammonite, often considered humanity’s “great predecessor in life”. Having existed 400 million years ago and thrived and survived through three mass extinction events including the Ice Age, ammonites are a symbol of perseverance through hardship.

The pavilion proper is divided into three zones:

A) History of Life Zone

Upon entering the pavilion visitors are greeted by the “Tree of Life Evolution” – a sculpture that extends from the floor to the ceiling of the pavilion, representing the evolution of life from the past, long before the existence and development of human life on Earth, to the present, with the rise of the Internet and AI, and finally to the distant future, transcending time and space. The trunk of the Tree is divided into ten strata, each representing a period of the Earth’s existence with the top strata extending into branches, representing the unlimited possibilities of the future.

In this section visitors are also introduced to the aforementioned ammonites, their history and meaning. Before entering the next two zones visitors can experience a short anime film introducing them to their two guides – the world-famous Astro Boy and Black Jack, the former of which is often considered the grandfather of modern anime. The short film is a non-canon continuation of the original anime’s ending and shows a timeskip where a heavily damaged Astro Boy is reborn as Neo Astro Boy by Black Jack via the transplanting of an iPS Heart made from human iPS stem cells, both of which can be seen in the next zone.

B) Body Zone

The Body Zone is home to the abovementioned working prototypes and is itself divided into parts:

- ***iPS Heart*** – Two vials containing the world’s first exhibit of an actual beating iPS Heart and iPS cardiac tissue cells respectively. While the former is still in development and cannot be transplanted into humans due to the heart having a lifespan of a little over a week, the iPS cardiac tissue cells are already used in treatment for heart problems and have been implanted in over 25 Japanese residents.

- ***Future of Medical Care*** – Supported by Asahi Intecc Co. and Obayashi Corporation, this part of the pavilion showcases a future in which Flying Operating Rooms can be used to reach even the furthest patients and doctors can operate remotely. Furthermore, the innovative light dispersion system which is already in use in numerous Japanese hospitals allows doctors to operate without casting a shadow on their patients.

- ***Future of Sleep*** – Visitors can experience the Bed Sensor System, courtesy of MinebeaMitsumi Inc., which detects the user's physical state and provides ideal sleeping conditions in terms of posture and temperature via cutting-edge technology.

- ***Future of Me*** – With the support of CYBERDYNE Inc. visitors have the opportunity to experience and test technology allowing for the seamless integration of between humans, AI and robots in the cyber-physical space that Society 5.0 envisions. Through the use of the showcased devices, such as robotic legs and real time robotic twins, people with disabilities will be able to function and have jobs which would currently not be possible.

- ***Wonder Earth: The Hidden World of Microbes*** – Finally, visitors can learn about the diverse microorganisms which reside under the ground and enrich our soil and the impact they have on our everyday life.

C) Mind/Bonds Zone

In the center of the Body Zone lies the Mind/Bonds Zone where on a series of cube-shaped screens pavilion visitors can watch a show about the aforementioned NATURE-VERSE, a world of true fulfillment in which technology and nature exist in harmony and people are interconnected by the spirit of compassion. The show explains the problems that humanity is currently facing and potential solutions which the showcase technological advancements can help provide, ending on the same phrase that opened the pavilion tour – “Thank you, Life”.

FUTURE CITY

The pavilion most closely related to the topic of the Japanese conception of Society 5.0 is the Future City pavilion, located just five minutes away from the West Gate. The pavilion is a collaborative effort between the Expo Association and 12 Japanese partner companies, each of which have their own stand inside the premises. Standing 150 meters in length and 33 meters in width, Future City is easily one of the largest pavilions in the 2025 Osaka World Expo.

The pavilion aims to introduce the concept of Society 5.0 to its visitors and showcase several innovative pieces of technology which have the potential to become a mainstay in everyday life in the future. By doing so it seeks to bring answers to questions regarding what kind of future awaits humanity, how various environmental and social problems can be overcome, how lifestyle issues can be resolved, among others. This is achieved through 15 immersive attractions which serve to spark curiosity in the minds of visitors and guide them towards Society 5.0. To further evoke the fusion of the physical and cyber spaces the exterior of the pavilion is designed with double mesh membranes which purify the surrounding air and wash away the captured particles and dirt with rainwater – the first time in the world such a system has been used in architecture of such large scale.

Under usual circumstances entry into the Future City pavilion is restricted to prior reservations made using the World Expo's lottery system. As such, official participants and Expo staff would not be able to gain access since their passes do not contain a registerable ticket number. However, as part of the research for this report and his PhD dissertation the author was able to establish contact with Mr. Koichi Nishimura, Deputy Pavilion Director of Future City, and arrange to visit and document the pavilion as an official guest. Said visit consisted of two parts – a non-structured interview with Mr. Nishimura and a guided tour of the pavilion.

The interview covered topics such as the problems that Japan is currently facing, the potential ways in which Society 5.0 would help combat them and the methods in which the innovative technology showcased in the pavilion can be implemented and spread throughout the country and, subsequently, the world.

According to Mr. Nishimura the primary problem that Japan needs to deal with at the present time is its aging population. According to the 2023 census the median age of native-born Japanese citizens is 49.5, effectively making Japan one of the oldest countries in the world alongside Monaco. The demographic problem can be viewed as a combination of two factors. One of them is Japan's low fertility rate. The country's population has been below replacement rate since the mid-1970s and gradually declining year by year. During the 2024 census it stood at only 1.14 children born per woman – the second lowest in the world after South Korea. The other factor influencing the median age is the country's high average life expectancy. Presently the life expectancy of the average Japanese citizen is among the highest in the world at 84.71 years, being barely beaten out by Hong Kong with 85.51 (United Nations, 2024). When taking sex into account, the female life expectancy vastly outpaces the male one – 87.74 to 81.69, and as a result Japan's sex ratio stands at 95.38 males per 100 females.

During the interview Mr. Nishimura pointed out one of the downsides of an aging population which often goes unnoticed. Due to the lack of young workers, industries which require physical strength and endurance, such as for example construction, agriculture and fishery, are forced to hire older workers, therefore slowing down the workflow and potentially creating health complications in their employees. According to a Statista poll the average age of a construction worker in Japan is 46.9 with a significant portion being over 55 and only about 12% of the construction workforce being under 30 (Statista, 2025). In this regard however, agriculture is far worse with the average age of Japanese farmers standing between 67 and 69 years old, exacerbating the need for an agricultural technological reform. As this is one of the key problems that Society 5.0 aims to resolve many of the showcased prototypes in the Future City pavilion are aimed at lessening the strain the aging population is causing on both businesses and citizens.

The pavilion presents its visitors with novel ideas from the very beginning of the tour. At the entrance guests of the pavilion are greeted by a Vtuber model – a virtual avatar controlled remotely by a person using either a motion capture bodysuit (for 3D models) or, as was the case in Future City, motion tracking software (for 2D models). Such virtual twins allow people to work from home with the practice being in place in the digital entertainment industry for almost a decade with the first major Vtuber being the Japanese Kizuna Ai. Japan is among the leaders in the Vtuber industry with companies such as Cover Corp

whose member Mori Calliope performed at the opening of the 2025 Expo. Furthermore, such technology allows people with disabilities or debilitating illnesses to function normally in society. Such is the case of the biggest western Vtuber IronMouse who in 2023 managed to become the biggest streamer in the world despite being bedridden with COVID for over a decade.

The pavilion is divided into three sections. The first part of the pavilion is the smallest and represents the theme exhibition. Through a 96-meter-long immersive presentation showcasing the history of human society visitors are taken from the primitive hunter-gatherer Society 1.0, through the agricultural Society 2.0 and industrial Society 3.0 to the digital Society 4.0. On the way the showcase presents the visitors with several questions that they should keep in mind for the rest of their stay concerning current societal problems and the global challenges that humanity needs to overcome to ensure a more sustainable future. Towards the end of the journey as guests near the Society 5.0 portion they are given their own virtual twin walking alongside them towards the future.

The second part of the pavilion, dubbed “Dialogue with the Future”, is by far the most interactive. The part itself is divided into three sections. The introduction is comprised of four cubes with adjoined monitors allowing for the illusion of depth. The projected videos show the visitors a glimpse into the future with the cubes being divided across four themes – *Family & Home*, *Transportation & Logistics*, *Health & Wellness* and *Education & Entertainment*. The second and third sections of Dialogue with the Future were co-created by the world-famous multinational conglomerate Hitachi Ltd. and KDDI Corporation, one of the leaders in the Japanese telecommunication sphere. The sections aim to simulate how future cities will transform with the concept “We can change the future ourselves”. In the Mirai Theater visitors can take part in an interactive show via scanning a QR code with their phones and can work together to choose solutions to future challenges. The show itself uses AI to analyze the results of the decisions and provide a real time response on the screen. On the other hand, in the Mirai Arcade groups of visitors can form teams to tackle social issues in a game-like simulation of the future.

The third and final part of the pavilion is by far the largest and contains the involvement of ten out of the twelve sponsors of Future City. Much like the second part, here the tour opens with four videos, this time taking place inside 5.5-meter-tall robot heads made from cardboard, which are themselves part of a new initiative to reduce environmental impact and offer a fresh perspective on sustainability. The videos aim to both educate and entertain by allowing its visitors to experience a virtual journey through four stories, each addressing specific challenges and their potential solutions, but all connected by the key phrase “I saw a dream”. Later in the pavilion visitors can see prototypes of some of the innovations showcased in these videos.

The rest of the pavilion is divided into four sections, depending on the aspect of human life that the exhibited prototypes aid:

A) Transportation and Mobility

The first section is located directly to the left of the entrance and covers topics related to the future of transportation of both goods and people. In it the following corporations showcase prototypes of inventions which can be implemented in future daily life:

- **Kawasaki Heavy Industries Ltd.** – The Japanese leader in the production of motorcycles has developed a new off-road personal mobility vehicle dubbed “CORLEO”. Taking on the appearance of a robotic lion CORLEO can easily traverse rough terrain for a comfortable ride, combining advanced mobility with the handling and stability that Kawasaki motorcycles are famous for. Furthermore, Kawasaki Heavy Industries presents visitors with the “ALICE SYSTEM” – an advanced form of trans-continental travel, resembling a shipping container, which allows for travel across land, sea and air without the need for changing modes of transportation. Both the abovementioned innovations are presented in full-scale.

- **Mitsui O.S.K. Lines Ltd.** – The company Mitsui O.S.K. Lines is one of the largest shipping companies in the entire world and presently sits as the largest tanker owning and operating company. It is no surprise then that their showcase – the “WIND HUNTER”, covers the topic of sustainability in shipping. The display model, standing approximately 4 meters long and 3 meters high, represents a future zero-emission vessel which will capture wind to produce, store and transport green hydrogen. The display is also an interactive attraction, and a visitor can create wind with a fan to start a simulated voyage.

- **Kansai Transmission and Distribution Inc.** – The last company in the “Transportation and Mobility Section”, Kansai Transmission and Distribution Inc. operates power systems and builds power transmission and distribution facilities and substations in the entire Kansai region. Their prototype, the smart poles, are designed to be used as a platform for addressing community needs in mobility, disaster prevention, tourism and other applications. Demonstrations of the smart poles and their functions are regularly conducted in front of the Future City pavilion.

B) Environment and Energy

In the concept of Society 5.0 innovation and sustainability go hand in hand. It is only therefore logical that a significant portion of the Future City pavilion focuses on the preservation of the environment and the utilization of sustainable energy sources.

- **Niterra Co. Ltd.** – Producer of internal combustion engines Niterra’s exhibit, dubbed “CyclusNiterrium”, aims to show visitors the currently in development “Autonomous Portable Circulation Technology”. The exhibit’s theme, “Brightening the Future of the Earth’s Future with the Power of Water and Air” showcases how a carbon-neutral society can potentially function. The company also contributes to the concept of Society 5.0 and hydrogen and circular carbon societies via initiatives such as the SUIO MORI Project.

- **Kanadevia Corporation** – The industrial and engineering company Kanadevia Corporation presents its ideas for the future via the World Tree – a long-standing symbol of longevity and perseverance with roots in Norse mythology, repurposed to connect humanity, Earth and technology. On the World Tree are interactive devices on which visitors can experience four stories about creating a prosperous future through resource circulation. Through its projects Kanadevia Corporation aims to inspire people to make behavioral changes towards a sustainable future society.

- **IHI Corporation** – Japanese engineering firm IHI Corporation takes part in Future City with its “Wonder Cube”. Aboard the Wonder Cube visitors can embark on an

exhilarating immersive visual exploration travelling from the depths of the ocean all the way to outer space and the microscopic world. The point of the journey is to educate viewers on topics such as the circulation of water, the source of all life on this planet, and the future of clean energy, leading to a more prosperous and sustainable future.

C) Manufacturing and Urban Development

Next in Future City is the topic of manufacturing and urban development. Presently most manufacturing cannot be classified as sustainable and in due time finite resources will bottleneck production. The aim of the following three attractions is to showcase ways in which processes can be shifted to be more oriented towards the long-term:

- ***Kobe Steel Ltd.*** – One of the leaders in Japanese steel production, Kobe Steel presents manufacturing, the foundation for creating future prosperity, through three zones that showcase evolving, connecting and combining processes. Located in the middle of Future City's third section is a full LED spherical monitor projecting ideas for the future and just to the side of it is the "Ball Coaster" representing how prosperity is the product of multiple actions layered upon one another.

- ***Asunaro Aoki Construction Co. Ltd. and Komatsu Ltd*** – The only joint attraction in the Future City pavilion is one that would undoubtedly revolutionize construction if it were to become widespread – the amphibious bulldozer. First introduced as a concept the year following the 1970 Japan World Exhibition Osaka, the amphibious bulldozer has evolved into an underwater construction robot with a working prototype currently in development. With ICT functions and automatic control, it can be remotely operated, allowing anyone to contribute to disaster prevention, ecological restoration and protecting lives and livelihoods from global warming, natural disasters and their fallout.

- ***CP Concrete Consortium*** – The CP Concrete Consortium is currently working on developing a next-generation CP (Carbon Pool) concrete which continues to absorb CO₂ even after buildings are constructed, thus helping to enrich the atmosphere. Its widespread use in the future would mean a more carbon-neutral society as excess CO₂ will not only be processed into oxygen by trees but also absorbed into the buildings themselves.

D) Food and Agriculture

The last and largest section of Future City is focused on the sustainable transformation of food and agriculture in a way that is beneficial to both the Earth and its people and is developed by just one company – ***KUBOTA Corporation***. The section is twofold. The first half contains innovations currently in development such as KUBOTA's autonomous remotely controlled tractor, the "Future Agricultural Robot". The second part allows visitors to experience a future farming management simulation game in a space that blends a 20-meter-long overhauled canopy with a front LED screen and during the author's stay proved to be very popular with the younger demographic.

Finally, Future City accomplishes Society 5.0's goal of combining the physical and the cyberworld via the Virtual Mirai City – an interactive digital twin of the pavilion. In the Virtual Mirai City visitors can see all the abovementioned ideas in practice, albeit digitally, and enter a world where the vision for a carbon-neutral sustainable future has been attained.

CONCLUSION

Expo 2025 Osaka plays a crucial role in popularizing the Japanese concept of Society 5.0 by introducing visitors to the ways in which it will revolutionize healthcare, transport, agriculture and life as a whole. The event represents one of the first major steps in the transition towards the super-smart human society as the widespread utilization of innovative technologies transforms the Expo into a microcosm of what the future human society could be like. While the current report only focuses on two pavilions, many others could also be categorized as oriented around Society 5.0 and could be the subject of future research. Some of them include but are not limited to: themed “signature” pavilions such as Hiroshi Ishiguro’s *Future of Life* or Yoichi Ochiai’s *null*², China’s country pavilion and the *Zeri Japan Blue Ocean Dome*.

As the concept of Society 5.0 encompasses many aspects of human life the impact it will have on society cannot be speculated within the confines of the current report. For further research the author recommends the Cabinet Office’s page on Society 5.0, other publications by the author, his thesis on the topic of the ways in which the concept would impact companies entering the Japanese market or publications such as the ones listed in the sources of the current report.

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LINGUISTIC FRAMING AND ETHICAL IMPLICATIONS IN EUROPEAN DIGITAL TRANSFORMATION NARRATIVES: A CRITICAL DISCOURSE ANALYSIS

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1. INTRODUCTION

Linguistic Framing and Ethical Implications in European Digital Transformation Narratives: A Critical Discourse Analysis

The European Union (EU) has increasingly positioned itself as a leader in the global race for digital innovation. Its strategic documents and communications, including the Digital Strategy and the Artificial Intelligence (AI) Act proposals, outline an ambitious plan to create a “Europe fit for the digital age.” These initiatives highlight values such as inclusivity, sustainability, and ethical responsibility. However, these ideas are not neutral or obvious – they are built and spread through language, which plays a key role in shaping technological visions, influencing public opinion, and justifying certain political actions.

In recent years, scholars across linguistics, technology ethics, and political science have emphasized the importance of examining digital transformation as a discursively mediated phenomenon. The discourse surrounding digital innovation is not merely descriptive; it is constitutive – it shapes what is considered possible, desirable, and necessary in Europe’s technological future. By focusing on how language constructs meaning and encodes ideological assumptions, we can better understand how power is exercised in digital policy-making.

This paper applies **Critical Discourse Analysis (CDA)** – specifically the model developed by **Norman Fairclough** – to investigate the linguistic and ethical dimensions of EU digital transformation narratives. By analyzing a corpus of EU policy documents, innovation-oriented publications, public narratives from AI startups, and statements from digital policymakers, the study seeks to uncover the framing strategies that normalize certain visions of digital progress while sidelining or marginalizing others.

Key questions guiding this analysis include:

- How is innovation framed linguistically in EU digital transformation discourse?
- What ethical concerns are made visible or rendered invisible through these narratives?
- Whose voices and worldviews are centered or excluded in constructing the digital future?

The working hypothesis is that while EU digital discourse promotes ethics and inclusivity rhetorically, it frequently reproduces narrow techno-optimistic, neoliberal, and Anglo-centric worldviews. Concepts like “trustworthy AI” or “human-centric innovation” are often invoked without substantive mechanisms to ensure ethical accountability or linguistic

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diversity. Furthermore, digital innovation is frequently framed as both inevitable and universally beneficial, minimizing public scrutiny and obscuring alternative pathways.

By drawing on insights from **English linguistics**, **AI ethics**, and **policy discourse analysis**, this paper aims to expose the ideological work performed by language in digital policy documents and entrepreneurial narratives. The ultimate goal is not only analytical but normative: to advocate for more **ethically reflective** and **linguistically inclusive** approaches to digital policymaking in Europe. Such a shift is essential if digital transformation is to serve all citizens equitably, rather than reproducing existing structures of privilege and exclusion under the guise of progress.

2. METHODOLOGY

This study employs **Critical Discourse Analysis (CDA)** to examine the linguistic and ideological strategies embedded in European Union digital transformation narratives. CDA is a multidisciplinary approach to the study of language that sees discourse as a form of social practice, intricately linked to structures of power and ideology. This analysis is guided by the model developed by **Norman Fairclough (2013)**, which situates discourse within a three-dimensional framework: the textual (linguistic features), the discursive practice (production and interpretation), and the social practice (broader socio-political context).

Analytical Framework

Fairclough's CDA model is particularly suitable for analyzing policy and institutional texts, as it reveals how language contributes to the construction and legitimization of particular social orders. By uncovering the often-implicit assumptions encoded in language, CDA can illuminate how discourses about digital transformation normalize certain ideologies – such as neoliberalism, techno-optimism, and market-oriented ethics – while marginalizing others.

This research focuses on three key dimensions of discourse:

1. **Lexical Choices** – Specific word selections and their connotative meanings. For example, the repeated use of words like “disruption,” “acceleration,” and “leadership” can reflect and reinforce an ideology of perpetual innovation and competition.
2. **Metaphorical Framing** – The use of metaphors to structure understanding. For instance, war metaphors (“digital arms race”) or journey metaphors (“paving the road to digital success”) can shape how technology is perceived, often privileging urgency and inevitability.
3. **Narrative Structures** – The organization and prioritization of information within texts, which can affect which actors are empowered or marginalized and which consequences are emphasized or ignored.

Corpus Selection

The corpus analyzed includes a range of influential texts produced between 2020 and 2025. These documents were selected based on their visibility, influence, and centrality to EU digital policymaking:

- **European Commission Policy Documents** Including *Shaping Europe's Digital Future* (2020) and the *White Paper on Artificial Intelligence* (2020), which outline the EU's vision and regulatory direction for AI and digital innovation.

- **Innovation-Focused Publications** Such as reports from the European Innovation Council and Horizon Europe funding programs, which frame innovation priorities, investment strategies, and desired outcomes.

- **Startup and Incubator Narratives** Public communications, press releases, and website content from prominent AI startups and European tech incubators, showcasing entrepreneurial discourse and value propositions.

- **Media Statements and Speeches by EU Officials** Keynotes and public addresses by EU digital policy actors, such as commissioners and innovation leads, play a crucial role in shaping public narratives and international perceptions.

Data Collection and Analysis Process

Texts were sourced from official EU websites, digital strategy portals, and startup platforms. They were manually coded using thematic and linguistic analysis methods consistent with CDA principles. Thematic codes included categories such as “inevitability of progress,” “ethics as branding,” “security and competition,” and “exclusion of minority voices.” Linguistic features – such as modality, transitivity, passivation, and lexical repetition – were documented and interpreted about broader ideological functions.

In line with CDA's epistemological stance, the aim is not to claim objectivity or neutrality, but to engage in a reflexive critique of how discourse shapes social reality. The methodology assumes that language is not merely descriptive but performative – it constitutes power relations and legitimates certain worldviews over others.

By combining macro-level discourse themes with micro-level linguistic analysis, this study seeks to offer a robust understanding of how EU digital transformation narratives operate discursively and ideologically.

3. FRAMING INNOVATION AS INEVITABLE AND BENEVOLENT

In the analyzed corpus, innovation is overwhelmingly portrayed as an **inevitable** and **inherently positive** force. This discursive framing is achieved through consistent lexical patterns and rhetorical strategies that position digital transformation as both unavoidable and universally beneficial. Such narratives obscure the complexities of technological change, downplay potential harms, and marginalize critical or alternative viewpoints.

Lexical Choices and Semantic Fields

The dominant vocabulary across EU policy documents, startup communications, and digital innovation manifestos is steeped in terms such as “**disruption**,” “**leadership**,” “**acceleration**,” “**resilience**,” and “**revolution**.” These words belong to a semantic field associated with dynamism, urgency, and progress. For example, the European Commission's *Shaping Europe's Digital Future* (2020) refers to digital transformation as a “**driver of**

economic growth and societal well-being.” Similarly, startups routinely describe their technologies as “**cutting-edge,**” “**game-changing,**” or “**world-leading.**”

These lexical choices are not neutral – they signal a worldview in which innovation is aligned with economic productivity, global competitiveness, and modernization. The cumulative effect is a rhetorical environment that equates innovation with inevitability and moral virtue, making resistance to or critique of digitalization appear regressive or irrational.

Innovation as a Linear, Pre-Scripted Process

Another key discursive strategy involves framing innovation as a **linear, goal-oriented journey** toward a pre-defined future. This is evident in metaphors like “**paving the road,**” “**staying ahead,**” or “**leading the digital revolution.**” The underlying assumption is that the endpoint – characterized by widespread adoption of AI, big data, automation, and smart technologies – is predetermined and desirable.

Such framing constructs the future as **pre-scripted**, not open to democratic negotiation or ethical deliberation. It erases the possibility that societies might choose different technological paths based on values like ecological sustainability, social cohesion, or data sovereignty. The absence of these possibilities in the discourse serves to **naturalize the neoliberal trajectory** of constant innovation, deregulation, and market expansion.

The Absence of Contestation

A particularly striking feature of the discourse is its lack of space for contestation or dissent. Innovation is rarely discussed in terms of **risks, trade-offs, or social costs.** For instance, while the *White Paper on Artificial Intelligence* (2020) nods to the importance of ethics and human rights, it primarily focuses on creating an “**innovation-friendly**” **environment** with “**legal certainty**” for businesses.

This instrumental framing subordinates ethical and societal concerns to economic imperatives. It also delegitimizes critical perspectives, such as those of digital labor activists, environmental campaigners, or civil society organizations, by positioning them outside the dominant narrative of progress.

Neoliberal Assumptions and Market Logic

Underpinning this framing is a broader **neoliberal ideology** that views innovation as the engine of economic growth and sees technological advancement as synonymous with societal advancement. The policy language promotes an entrepreneurial spirit, celebrating **startups, scale-ups, and tech unicorns** as ideal actors in the digital future. Innovation is framed as the solution to diverse societal problems – from healthcare inefficiencies to environmental degradation – without acknowledging that these same technologies can also produce **new forms of inequality, surveillance, and dependency.**

Moreover, the rhetoric tends to downplay the role of **state intervention, public interest regulation, or collective governance.** Instead, it emphasizes market-based solutions and public-private partnerships, reinforcing the idea that the private sector is the primary driver of progress.

Implications for Democratic Deliberation

By presenting innovation as inevitable and morally unproblematic, this discourse limits opportunities for democratic engagement and ethical reflection. Citizens are not invited to debate the kinds of technologies being developed or the values they should embody. Instead, they are positioned as **users, consumers, or beneficiaries** of innovation, rather than as **co-creators** of digital futures.

This depoliticization of technological change has serious implications. It sidelines questions about **algorithmic bias, labor displacement, data commodification, and environmental impact**. It also ignores historical and geopolitical inequalities, particularly between Western Europe and peripheral regions that may not equally benefit from or influence digital transformation.

4. METAPHORS AND IDEOLOGICAL CONSTRUCTIONS

Metaphors are not just literary devices – they are **cognitive tools** that shape how people understand complex concepts. In policy discourse, metaphors frame problems and solutions, signal urgency, and influence emotional responses. In the EU’s digital transformation narratives, metaphors serve a powerful ideological function: they legitimize specific technological directions, obscure alternatives, and reinforce dominant values like competition, growth, and inevitability.

Through Critical Discourse Analysis, this section identifies three major metaphorical patterns in the corpus: **journey metaphors, war metaphors, and organic growth metaphors**. Each of these contributes to a framing of digital transformation as necessary, natural, and beneficial, often at the expense of more critical or inclusive perspectives.

Journey Metaphors: Digital Progress as Linear and Unidirectional

Phrases such as “**paving the way**,” “**staying on track**,” “**leading the digital revolution**,” and “**forging ahead**” are frequently found in EU policy documents and startup narratives. These metaphors construct digital transformation as a **linear journey** toward a specific destination: technological advancement, global competitiveness, or digital sovereignty.

This metaphorical framing has several implications:

- It **reduces technological development to a matter of speed and direction**, not ethics or politics.
- It implies that there is **only one viable path forward**, thus **delegitimizing alternative visions** such as slower, more deliberate innovation or community-led tech development.
- It positions Europe as either a **leader or a follower**, intensifying the geopolitical competition for technological supremacy.

The journey metaphor reinforces a **teleological narrative**, where digital technologies are viewed as both the means and the end of progress. This obscures the fact that these paths are not neutral – they are chosen, funded, and implemented by specific actors with particular interests.

War Metaphors: Framing Digitalization as a Battle

Equally prevalent in the discourse are metaphors that frame digital transformation as a form of **warfare or competition**. Common phrases include:

- **Digital arms race**
- **Defending digital sovereignty**
- **Battling cyber threats (Fighting for technological leadership)**

These war metaphors serve to **militarize the discourse**, creating a sense of urgency, danger, and zero-sum logic. They imply that if Europe does not act decisively and aggressively, it will be left behind – or worse, dominated – by geopolitical rivals like the United States or China.

The ideological effects of these metaphors include:

- Justifying **increased surveillance, cybersecurity funding, and data nationalism** under the guise of defense.
- Reinforcing **exclusionary practices**, where non-European technologies or actors are viewed with suspicion.
- Creating a **rhetoric of inevitability and fear** that silences debate over ethical alternatives or more collaborative international approaches.

Moreover, these metaphors shape public understanding of digital threats in ways that prioritize **state and corporate interests** (e.g., protecting infrastructure, intellectual property) over **individual or collective rights**, such as privacy, freedom from surveillance, or data justice.

Organic Growth Metaphors: Technology as Nature

A third category of metaphors constructs digital technologies as **natural phenomena**, using phrases like:

- Emerging ecosystems**
- Evolving platforms**
- Maturing technologies**
- Growing innovation hubs**

These **organic growth metaphors** imply that technological development is spontaneous, self-regulating, and apolitical. This framing can be particularly misleading because it **obscures the role of intentional design, policy, and power structures** in shaping digital infrastructures.

By presenting digital ecosystems as **natural or evolutionary**, these metaphors:

- Suggest that **intervention or regulation is unnecessary or even harmful** to innovation.
- Mask **inequities in access to funding, markets, and governance** that determine which technologies “flourish.”
- Promote a **laissez-faire narrative** that aligns closely with neoliberal principles, where market forces – not democratic deliberation – are seen as the legitimate drivers of technological progress.

The Function of Metaphors in Ideological Control

Together, these metaphorical frames construct a digital transformation narrative that is **linear (journey), adversarial (war), and organic (natural growth)**. The overall effect is to portray technological change as:

- **Unstoppable** – There is no turning back.
- **Essential** – Europe must act, or risk falling behind.
- **Beneficial** – Ethical or social critiques are treated as secondary or obstructive.

This metaphorical landscape makes it difficult for alternative visions – such as **degrowth tech, community-owned data systems, or non-Western epistemologies** – to gain traction in the mainstream policy space.

5. ETHICAL SILENCES AND SELECTIVE VISIBILITY

Despite rhetorical commitments to ethics and responsibility, the EU digital transformation discourse exhibits notable **ethical silences** – critical issues that are either minimally addressed or entirely omitted – and **selective visibility** – certain ethical concerns are highlighted only insofar as they align with prevailing economic and political agendas.

Tokenistic Ethical References

For instance, key documents such as the *White Paper on Artificial Intelligence* (European Commission, 2020) explicitly mention the importance of “trustworthy AI” and “ethics by design.” However, such references are often **superficial** and relegated to appendices or secondary sections. The bulk of the discourse focuses on creating **regulatory frameworks** that facilitate innovation rather than genuinely grappling with the socio-ethical complexities of AI deployment.

Ethics in these narratives tends to be framed as a **technical challenge** to be solved through standards, audits, and compliance mechanisms rather than as a **political or social issue** requiring broad stakeholder engagement and systemic change. This aligns with critiques by scholars like Binns (2018), who argue that fairness in machine learning is often depoliticized and reduced to algorithmic fixes rather than addressing root causes of social injustice.

Marginalization of Socio-Economic Inequalities

One of the most conspicuous absences in EU digital discourse is a meaningful engagement with the **socio-economic inequalities** exacerbated by digital transformation. Terms such as “inclusion” and “fairness” are invoked repeatedly but without substantive analysis of how automation and AI impact labor markets, particularly for vulnerable populations.

For example, the language employed by startups and innovation hubs prioritizes **scalability, speed, and market impact** (e.g., “disruptive,” “game-changing,” “data-driven”) while rarely acknowledging **labor displacement, worker rights, or digital divides**. This selective visibility promotes a narrative that technological progress will ultimately generate societal benefits, sidelining debates about who bears the costs and who gains the rewards.

Individualization of Ethical Concerns

Another notable feature is the individualistic framing of ethical challenges. Concerns around privacy, data protection, and transparency are predominantly discussed in terms of **user trust** and **consumer choice**, which aligns with market-based logic.

This contrasts with the broader social justice concerns raised by critical scholars such as Noble (2018) and Zuboff (2019), who emphasize systemic biases embedded in algorithms and the exploitative dimensions of surveillance capitalism. The EU's policy rhetoric, by focusing on individual rights and transparency, risks **depoliticizing ethics** and obscuring structural power imbalances in the digital economy.

Limited Attention to Intersectionality and Marginalized Groups

Despite frequent appeals to inclusivity and human-centric approaches, the discourse largely **lacks intersectional perspectives**. The language of inclusiveness rarely acknowledges the differential experiences of marginalized groups based on race, gender, class, or geography.

Moreover, the dominance of English and Anglo-American techno-optimistic registers – discussed further in Section 6 – means that **alternative epistemologies and value systems** that might foreground these concerns are systematically excluded or marginalized.

6. EXCLUSION OF ALTERNATIVE VOICES

Language is a gatekeeper of knowledge and participation. In the context of the EU's multilingual, multicultural environment, the overwhelming use of **English as the lingua franca** in digital transformation narratives has profound ideological and political implications.

Linguistic Homogenization and Epistemic Exclusion

Most policy documents, innovation reports, and startup communications are written in English, often adopting an **Anglo-American techno-optimistic discourse**. This linguistic homogenization facilitates international communication but simultaneously excludes **non-English speakers** and **non-Western epistemologies** from shaping the digital agenda.

This exclusion undermines the EU's stated commitment to **pluralism** and **democratic participation** (European Commission, 2020). It privileges certain forms of knowledge – especially market-oriented, entrepreneurial know-how – while marginalizing other ways of knowing that may prioritize collective welfare, sustainability, or social justice.

Abstract Universalism vs. Concrete Disparities

Terms like “inclusive,” “fair,” and “human-centric” are used frequently but in ways that reflect an **abstract universalism**, devoid of intersectional or contextual nuance. This masks the very real disparities in **digital access, education, and representation** across Europe's diverse member states.

As a result, the discourse risks **reproducing existing inequalities** by failing to engage with how race, class, gender, and regional differences shape experiences of digital transformation. This observation aligns with van Dijk's (1993) critique of the dominant discourse's capacity to perpetuate power imbalances through selective representation.

7. THE ROLE OF ENGLISH LINGUISTICS IN UNPACKING DIGITAL IDEOLOGY

English linguistics provides indispensable tools for critically examining how ideology is encoded and normalized in discourse. Analyzing **syntax**, **modality**, **presupposition**, and **agency** helps reveal the subtle ways that digital transformation narratives naturalize particular worldviews.

Syntactic Structures and Agency

The frequent use of **passive voice** in policy texts obscures agency, making it unclear who is responsible for specific decisions or outcomes. For example, statements like “AI will transform healthcare” remove the actors (e.g., corporations, regulators) from the transformation process, presenting it as a natural or inevitable event.

This grammatical strategy serves to **depoliticize technology**, reducing complex social processes to technical inevitabilities.

Modality and Presupposition

Modal verbs such as “**must**,” “**will**,” and “**should**” are common and carry a strong prescriptive force, framing technological development as necessary and uncontestable. For example, “Europe must lead the digital revolution” presupposes that leadership is desirable and unproblematic.

Similarly, presuppositions embedded in claims like “digital innovation improves societal well-being” foreclose debate about possible negative consequences or alternative futures.

These linguistic features contribute to the **naturalization of dominant ideologies**, making certain assumptions appear as common sense.

8. TOWARD ETHICALLY REFLECTIVE AND LINGUISTICALLY INCLUSIVE NARRATIVES

Given the limitations identified, this paper advocates for a reorientation of EU digital transformation discourse along three key axes:

Ethical Pluralism

Incorporate diverse ethical traditions, including feminist ethics, decolonial thought, and environmental justice, into digital policy debates. Such pluralism acknowledges the multiplicity of values and fosters richer, more inclusive discussions about technology’s role in society.

Participatory Framing

Expand participation in digital policymaking to include marginalized communities, smaller EU member states, and speakers of languages other than English. This can be achieved through multilingual consultation processes, community-led innovation initiatives, and co-design methods.

Critical Linguistic Awareness

Train policymakers, innovators, and communicators to recognize and critically reflect on the rhetorical strategies they use. This awareness can promote more transparent, accountable, and democratically grounded discourse.

Implementing these approaches would democratize digital transformation narratives and help align technological development with **equity, justice, and pluralism**.

9. CONCLUSION

Language is far more than a tool for communication – it is a **mechanism of power** that legitimizes certain ideologies while marginalizing others. The EU's digital transformation narratives, despite their commitment to ethics and inclusion, often reproduce **market-driven, Anglo-centric visions of progress** that obscure social complexities and ethical dilemmas.

Through the lens of Critical Discourse Analysis, this paper has shown how linguistic framing constructs innovation as inevitable and benevolent, employs metaphors that naturalize and militarize technology, and selectively silences critical ethical concerns and alternative voices.

Moving forward, fostering **ethically reflective** and **linguistically inclusive** narratives is not only a communicative necessity but a political and ethical imperative for creating digital futures that are genuinely just and democratic.

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DECENTRALIZATION OF THE FISCAL PACKAGE AND POVERTY CHALLENGES IN ALBANIA: THE CASE OF HAS MUNICIPALITY IN THE CONTEXT OF EUROPEAN INTEGRATION

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Abstract

This paper examines the relationship between fiscal decentralization and poverty reduction in Albania, focusing on Has Municipality as a case study. The analysis reveals that, despite reforms designed to empower local governments, limited revenue capacity and high dependence on central transfers constrain effective service delivery. These structural limitations reduce the municipality's ability to tackle poverty and foster local development. The findings suggest that strengthening fiscal autonomy, alongside targeted support from national and EU frameworks, is essential for promoting social cohesion and sustainable growth within the context of European integration.

Keywords: fiscal decentralization, poverty, Albania, local governance, EU integration

JEL: H71, I32, O18, P35

INTRODUCTION

Fiscal decentralization has emerged as a key policy instrument worldwide to enhance local governance, improve public service delivery, and reduce poverty by bringing decision-making closer to the community (Ahmad and Brosio, 2009). In Albania, decentralization reforms have been implemented progressively over the past two decades, particularly in the context of EU integration, to strengthen the autonomy and capacity of municipalities in managing their financial resources and delivering social services.(UNDP,2005) Despite these reforms, significant challenges remain, particularly in poorer areas, where weak local revenues and heavy reliance on central transfers limit opportunities for local development. Has Municipality, located in northeastern Albania, represents one of the most economically vulnerable areas in the country. With a population of 11,684, a high proportion of families reliant on economic assistance programs, and approximately 1,400 registered unemployed individuals, the municipality faces multiple social and economic challenges (INSTAT, 2013). At the same time, Has Municipality possesses significant potential for economic and social development. Its rich cultural heritage, natural resources such as medicinal plants, and its location along the Theth-Valbonë-Kukës tourism route provide opportunities for tourism and local enterprise. This study aims to analyze the relationship between fiscal decentralization and poverty reduction in Albania, using Has Municipality as a case study. The specific objectives are to:

- To assess the impact of fiscal decentralization on local poverty outcomes and the effectiveness of local service provision.

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- Identify opportunities and challenges for improving local governance and promoting social inclusion in marginal regions.

The study contributes to the literature by combining national-level analysis with a focused local case study, providing evidence on how decentralization policies operate in practice and highlighting potential policy interventions to strengthen local development in Albania. The paper is structured as follows: Section 2 reviews the relevant literature on fiscal decentralization and poverty; Section 3 outlines the methodology; Section 4 presents an overview of poverty in Albania; Section 5 examines fiscal decentralization at the national level; Section 6 provides case study of Has Municipality; Section 7 discusses the findings; and Section 8 concludes with policy recommendations.

FISCAL DECENTRALIZATION AND POVERTY: A LITERATURE REVIEW

Fiscal decentralization refers to the transfer of fiscal responsibilities and resources from the central government to local governments, enabling them to manage budgets and make spending decisions more autonomously (Martinez Vazquez, Lago Peñas and Sacchi, 2017). This process includes revenue assignment, expenditure delegation, and intergovernmental transfers, all designed to strengthen local accountability and responsiveness (Shah, 2006).

The rationale is that local governments, being closer to their local communities, have better information about citizens' preferences and can therefore deliver public services more efficiently (Tiebout, 1956; Rondinelli, 1981; Bardhan, 2002). Fiscal decentralization can positively influence poverty reduction by improving the efficiency and responsiveness of public service delivery. The direct connection increases accountability and transparency, as citizens can more easily monitor and influence the allocation of resources. Moreover, local governments are often better positioned to identify vulnerable groups and implement targeted interventions, which can mitigate structural inequalities and stimulate local economic development. (Adjei et al. (2012); Martinez Vazquez, Lago Peñas and Sacchi, 2017).

However, decentralization also carries risks. Nirola et al. (2022) warns that weak administrative capacity, elite capture, and corruption at the local level can divert resources away from poverty alleviation. Moreover, poorly designed decentralization may intensify existing regional inequalities and obstruct balanced territorial development., as wealthier jurisdictions are better positioned to mobilize revenue and invest in services (Lessman, 2012). These theoretical divergences suggest that the effectiveness of fiscal decentralization in reducing poverty depends heavily on institutional and economic environments.

Empirical studies on the relationship between fiscal decentralization and poverty reduction lead to mixed results. Cross-country analyses often highlight both positive and negative effects, reflecting the diversity of national contexts (Martinez-Vazquez and McNab, 2003; Sepúlveda and Martinez-Vazquez, 2011). Other studies argue that decentralization can reduce poverty by aligning services with local needs (Faguet, 2004; Jütting et al., 2005). For instance, Faguet's (2004) study of Bolivia demonstrates how decentralization improved local investment in basic services, particularly in education and health, with measurable effects on welfare outcomes. Several authors find no significant relationship or even negative consequences. For example, Bardhan (2002) argues that decentralization may reproduce local inequalities where governance structures are weak, while Ezcurra and Pascual

(2008) show that in some countries, decentralization has widened interregional disparities. The evidence thus underscores the importance of institutional quality, capacity, and redistributive mechanisms in shaping outcomes. Empirical evidence from Albania highlights the complex relationship between fiscal decentralization, inequality, and poverty outcomes. The World Bank (2018) finds that while Albania's fiscal system has a moderately redistributive effect – reducing the Gini coefficient from 0.37 to 0.32 after taxes and transfers, its overall impact on poverty alleviation remains limited. Betti et al. (2018) map poverty and welfare indicators across Albania, revealing pronounced disparities between urban areas like Tirana and rural municipalities. These gaps stem partly from uneven local development and weak fiscal capacity at the subnational level. Merkaj, Zhllima and Imami (2017) note that local governments continue to face ambiguities in expenditure responsibilities, fragmented legal frameworks, and weak transparency in the allocation of intergovernmental grants. As a result, fiscal decentralization has not yet translated into stronger local autonomy or improved service delivery. Building on the insights and gaps identified in the literature, particularly the limited evidence on the municipal-level impact of fiscal decentralization on poverty, this study focuses specifically on Has Municipality. While national level analyses provide important context on Albania's fiscal system and redistributive mechanisms, they do not capture the localized dynamics of revenue capacity, intergovernmental transfers, and service delivery

METHODOLOGY

This study applies a quantitative, secondary data-based approach to examine the link between fiscal decentralization and poverty, focusing on Has Municipality within the Albanian and European integration context. Data are drawn from three main sources:

- ✓ World Bank reports on poverty, fiscal systems, and equity.
- ✓ INSTAT datasets, including the SILC Survey (2023) and Census data for the Kukës region (2023).
- ✓ Albanian Ministry of Finance and Economy publications, especially the Annual Report on Local Public Finances (2024).

Local fiscal data will be analyzed to assess revenue sources, transfers, and expenditures. Using descriptive and comparative statistics, the study evaluates how fiscal decentralization shapes resource allocation, local capacity, and poverty dynamics in Has Municipality.

POVERTY IN ALBANIA

There is no universal consensus regarding the definition of poverty as the definitions vary depending on the context and approaches of the authors, however according to Michael, et al 1997 the economic definition of poverty means the lack of sufficient financial and material resources to meet basic needs and to stay at the minimum level of quality of life that is considered acceptable in a given society. According to the World Bank, poverty in Albania has declined substantially in recent years, falling from 34.3 percent of the population in 2020 to a projected 20 percent in 2024, measured at the upper-middle-income

poverty line of \$6.85/day (PPP) (World Bank,2025). This progress reflects economic growth, remittances, and gradual structural reforms. Poverty is related to a variety of causes, including labour market status, unemployment or inactivity, age, geographic location, education level, and other factors (UNDP 2011). Poverty can also be attributed to people who are in work and earn very low wages. In Albania, the "working poor" earn about 17% less than the working non-poor and, if informally employed, also lack social security entitlements and access to old-age pensions (MSWY 2014). In 2019, Albania started publishing the Survey on Income and Living Conditions (SILK) according to Eurostat methodology. Poverty indicators on SILK are based on the relative poverty concept, which takes into account disposable household income, number of household members (household size), and income distribution among population groups. The at-risk-of-poverty rate in Albania is 19.7% in 2023, compared to 23.4% in 2017.

Table 1. Insights into Social Exclusion Between 2017 and 2023

Variables	2017	2018	2019	2020	2021	2022	2023
At risk of poverty rate (%)	23.4	23	21.8	22	22.2	20,6	19,7
At risk of poverty before social transfers	38.5	39.0	38.1	37.9	39	36.5	36,4
At risk of poverty after social transfers	26.5	26.3	26.1	24.8	25.2	24,5	23.3
Gini index (%)	33.1	30.1	30.1	29.4	33	31	30.2

Source: INSTAT 2020, 2021, 2023.

Social transfers, such as old-age and family pensions, included in disposable household income, reduce the risk of poverty rate. When in the income level are not included all the social transfers, at risk of poverty in 2021 is estimated 36.4 % compared to 23.3 % that is estimated when in the income level are included social transfers only from old-age and family pensions.

Gini coefficient measures the inequality in income distribution where 0% expresses the perfect equality where everyone has the same level of income, while a Gini coefficient of 100% expresses full inequality where only one person has all the income. In 2023, the Gini coefficient was estimated at 30.2%, representing a 0.8 percentage point decrease compared to 2022 (INSTAT, 2024). Although national social transfers significantly reduce poverty rates, the persistent risk of poverty and regional disparities highlights the importance of strengthening local capacities through fiscal decentralization. This approach enables municipalities to design tailored social policies and improve service delivery in line with local needs.

AN OVERVIEW OF FISCAL DECENTRALISATION IN ALBANIA

Fiscal decentralisation in Albania has progressed significantly over the past two decades, yet substantial challenges persist. Municipalities remain highly dependent on transfers from the central government and face limited capacity to mobilise local revenues, such as property taxes and service fees. Additionally, weaknesses in budgetary and administrative capacity hinder the ability of local governments to deliver high-quality public

services (including health, education, social services, and infrastructure) which are critical for poverty reduction and addressing territorial disparities (UNDP, 2012). These constraints highlight the gap between the formal progress of fiscal decentralisation and its practical impact on reducing poverty at the local level

In the Albanian context, decentralization reforms began in the early 1990s, following the transition to democracy. The early 2000s marked significant progress in fiscal decentralization. The introduction of unconditional transfers in 2001 and the fiscal reform package of 2002 expanded local government autonomy over taxes and fees, including the small business tax and property tax (Davalos et.al 2018). Local governments also gained responsibilities in education, healthcare, social assistance, and water supply, which linked decentralization directly to welfare and poverty-related services. The reforms aimed not only to increase local efficiency but also to improve the equity of service provision across regions. Despite these achievements, fiscal decentralization in Albania has faced persistent challenges that limit its impact on poverty reduction. Local governments remain heavily dependent on central government transfers, which are often unpredictable and politically influenced. The capacity to collect local revenues is weak, particularly in relation to property taxation. Reductions in small business and vehicle taxes in the mid-2000s further constrained local revenue bases, undermining the sustainability of decentralization reforms (Kapidani, 2015). At the same time, fragmentation of local government units and lack of coordination have increased administrative costs and weakened service delivery.

In 2024, local governments collected around 44.4 billion ALL, of which 40.3 billion ALL, or 91%, came from local taxes and fees, and 4.1 billion ALL, or 9%, from non-tax revenues. Compared to the previous year, revenues from local taxes and fees increased by about 27.3%. Non-tax revenues also followed an upward trend, growing by approximately 27.2% compared to the previous year

Despite being responsible for a wide range of important functions in delivering public services, local government has a low share of revenues in relation to Gross Domestic Product (GDP) – only 1.66% in 2024. Compared to the previous year, revenues from local taxes and fees as a share of GDP increased by about 0.3%. In 2024, revenues from local taxes and fees accounted for just 5.68% of total public revenues, or 0.76 percentage points higher than the previous year's 4.92%. Despite this increase, fiscal decentralization, measured as the distribution of revenues between the two levels of government, continues to remain very low.

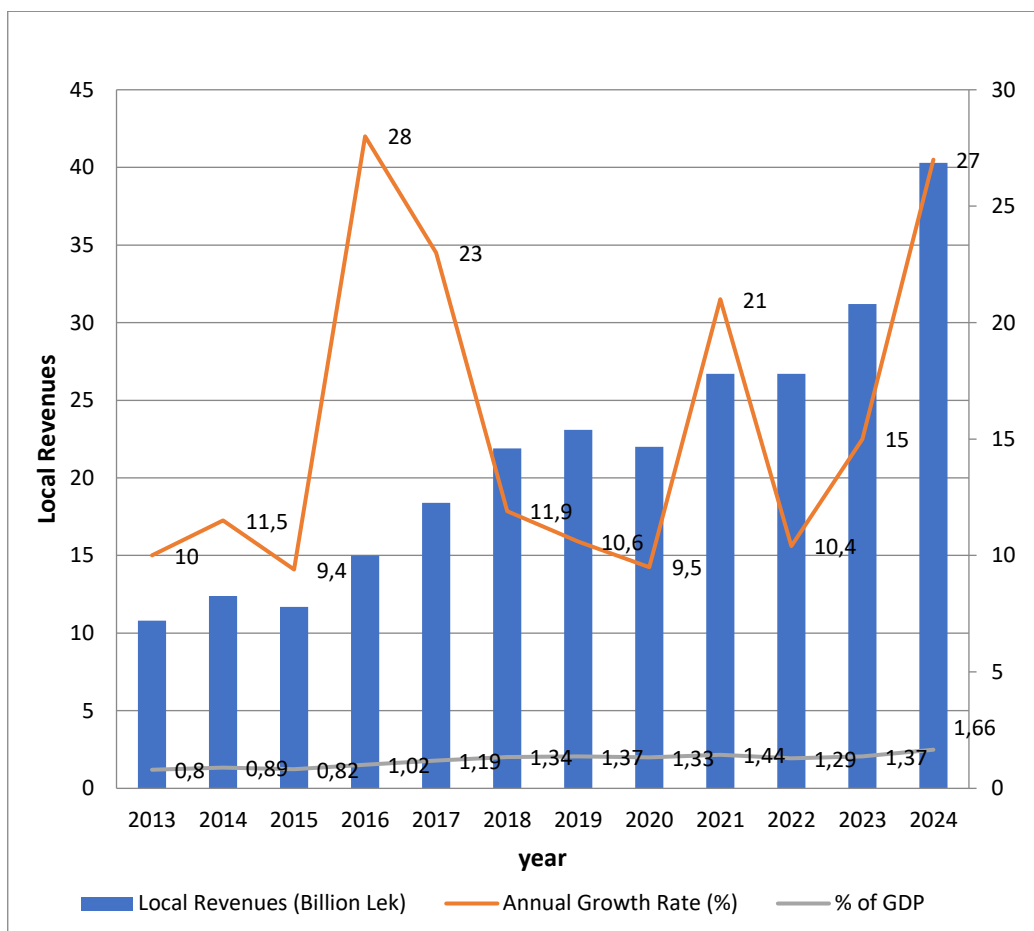


Fig. 1. Revenues from local taxes and fees to public revenues and GDP 2013-2024

Source: Albanian Ministry of Finance, 2025.

In 2024, local government maintained the upward trend of expenditures for financing local functions and services. During this year, local expenditures amounted to 74.4 billion ALL, or 8.1% more compared to the previous year. This increase of about 5.6 billion ALL in local expenditures resulted from improved performance in financing sources, both from own revenues and from transfers from the central budget

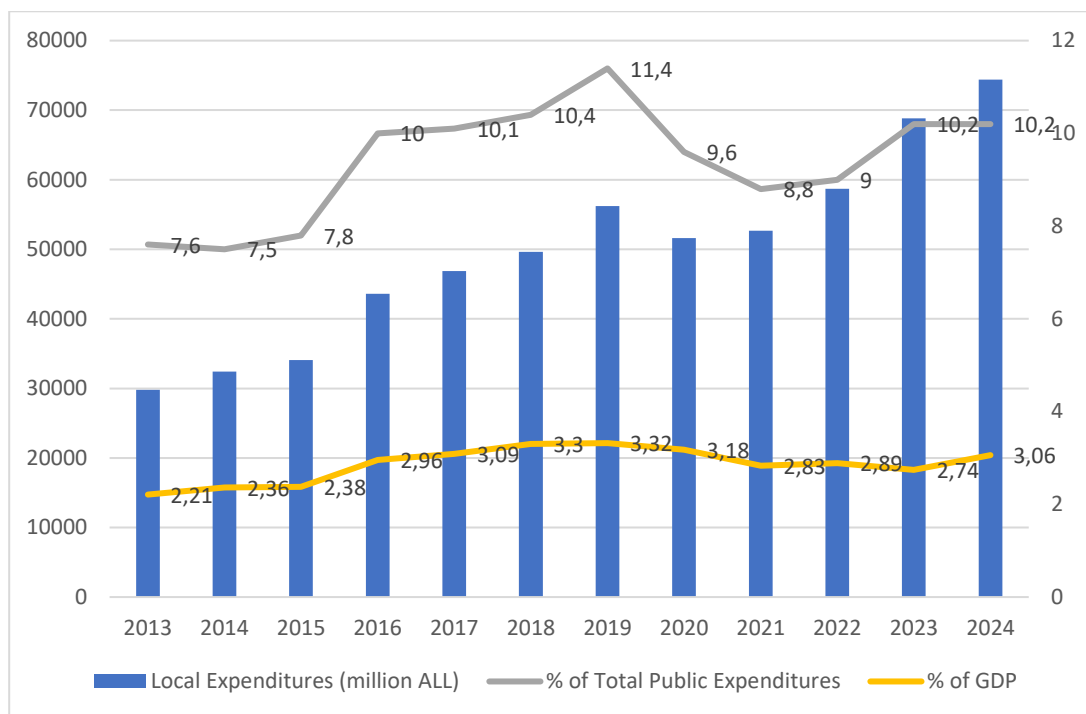


Fig. 2. Trends in Local Government Expenditures in Albania, 2013–2024

Source: Albanian Ministry of Finance, 2025.

Local government maintained the upward trend of expenditures for financing local functions and services. During this year, local expenditures amounted to 74.4 billion ALL, or 8.1% more compared to the previous year. This increase of about 5.6 billion ALL in local expenditures resulted from improved performance in financing sources, both from own revenues and from transfers from the central budget. In 2024, local government expenditures accounted for about 3.1% of GDP, up from 3.0% in 2023, and maintained almost the same weight of 10.2% in relation to total public expenditures, as in 2023. The low level of financial decentralization is reflected in the ratio of local expenditures to Gross Domestic Product, which in 2024 stood at 3.06% – around 0.8 percentage points higher than a year earlier. Local government has maintained a relatively stable trend in the expenditure-to-GDP ratio, consolidating around these values for many years.

By analyzing the annual trend, it becomes evident that the consolidated fiscal indicators of local government are now in a stable trajectory. Despite their relatively low levels, they increased further in 2024. Nevertheless, this situation highlights the need for a new catalyst to fiscal decentralization, especially ten years after the administrative-territorial reform.

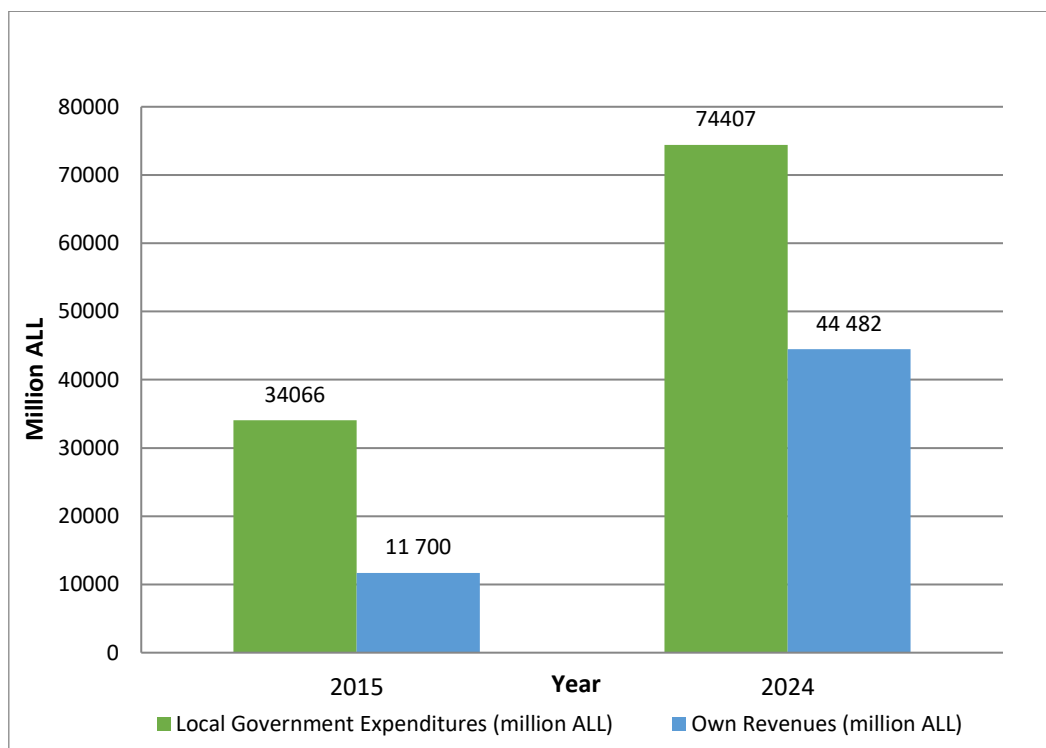


Fig. 3. Comparison of local own revenues and local government expenditures, 2015–2024

Source: Albanian Ministry of Finance, 2025

The data in graph above reflect the impact of the administrative-territorial reform, showing an increase of 118% in expenditures and 279% in own revenues, with the autonomy indicator improving from 34.3% in 2015 to 59.8% in 2024. The figures show significant growth in both indicators, reflecting strengthened fiscal autonomy.

CASE STUDY: HAS MUNICIPALITY

Has Municipality reflects a context characterized by significant social and economic challenges. With a population of 11,684 inhabitants (INSTAT, 2023), Has Municipality, located in the Kukës region and bordering Kosovo, is among the poorest municipalities in Albania. Demographic dynamics reveal significant imbalances: the share of the population aged 65+ is increasing, while the 0–18 age group is declining, largely due to migration and low fertility rates. This demographic transition creates heightened demand for social and health services, while simultaneously reducing the labor force and tax base. Approximately 1,800 families are beneficiaries of the economic assistance scheme, and 1,400 individuals are officially registered as unemployed jobseekers, underscoring the prevalence of structural poverty and dependency on social transfers. The situation is compounded by the growing number of families with persons with disabilities and the weak engagement of youth in

secondary education and vocational training. Has Municipality also presents development potentials. Its rich cultural heritage, geographic position on the Theth–Valbonë–Kukës mountain trail, and natural resources (chromium mines, medicinal plants, forests, and rural landscapes) provide opportunities for tourism, agro-based initiatives, and improved social service financing. However, these opportunities remain underutilized due to weak institutional capacity, migration pressures, and limited involvement of civil society. (GOPA,2023).Fiscal decentralization has provided Has Municipality with greater autonomy in managing local taxes and fees, but structural constraints in its economic base limit the effectiveness of revenue generation.

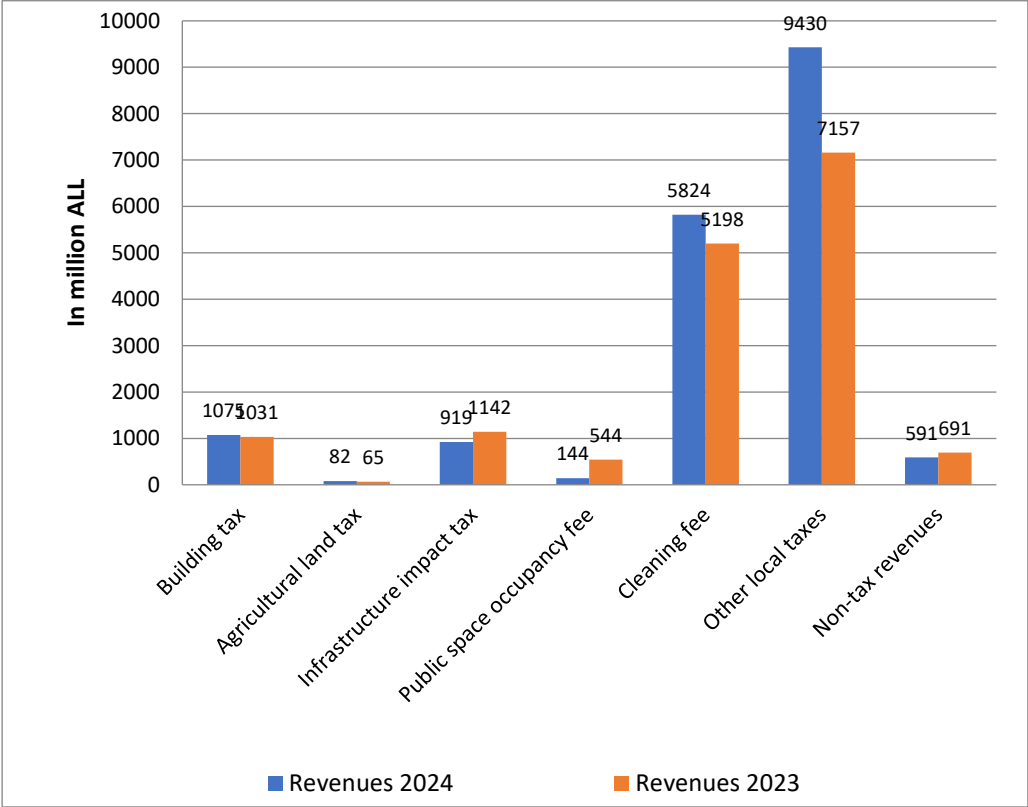


Fig. 4. Has Municipality Revenues by source 2024/2023

Source: Albanian Ministry of Finance, 2025.

Between 2023 and 2024, municipal revenue composition underwent significant changes, reflecting strategic and structural shifts. Building tax revenues rose modestly by 4 percent (1,031 to 1,075 million ALL), while agricultural land taxes grew by 26 percent (65 to 82 million ALL), likely due to valuation adjustments or enhanced rural tax enforcement. In contrast, infrastructure impact taxes and public space occupancy fees declined sharply by 20 percent and 73 percent, respectively, suggesting reduced development activity and regulatory changes. Cleaning fees increased by 12 percent (5,198 to 5,824 million

ALL), and “other local taxes” expanded markedly by 32 percent (7,157 to 9,430 million ALL), indicating a growing reliance on diversified local taxation. Non-tax revenues fell by 15 percent, reflecting lower administrative and service income. The shifts in revenue composition in Has Municipality, with increased reliance on diversified local taxes and service fees, illustrate a gradual fiscal decentralization aligned with Albania’s European integration agenda. This trend suggests an expanding capacity for self-financing, although the reduction in infrastructure revenues may challenge long-term development planning unless offset by strategic fiscal policy reforms.

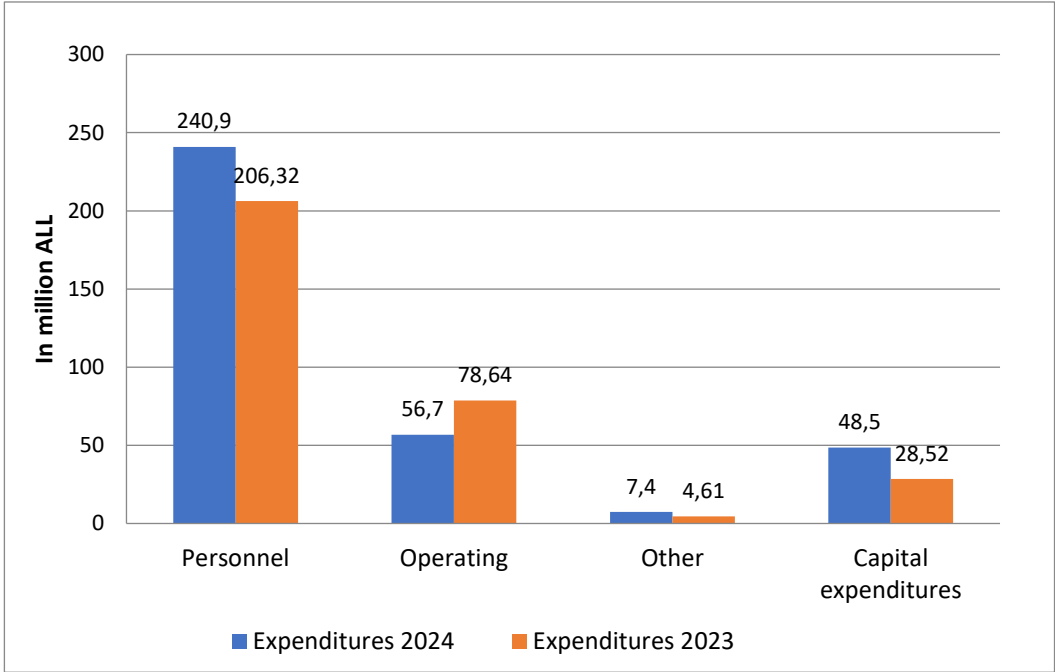


Fig. 5. Expenditures by Economic nature 2024/2023

Source: Albanian Ministry of Finance, 2025.

An examination of municipal expenditures by economic classification reveals a reallocation of fiscal priorities between 2023 and 2024. Expenditures on personnel increased from 206.32 million ALL in 2023 to 240.9 million ALL in 2024, representing a 17 percent rise. This growth may be attributed to adjustments in wage levels. Has Municipality’s expenditure profile reveals a marked shift toward human capital and infrastructure investments. The significant rise in personnel and capital expenditures underscores a strategic reorientation toward service provision and development, consistent with the objectives of fiscal decentralization. This reallocation affects poverty reduction, since better infrastructure and improved local services can support economic opportunities and improve quality of life.

DISCUSSION

The analysis of poverty and fiscal decentralization in Albania reveals a complex interplay between national-level policies, local government capacity, and regional disparities. Nationally, the at-risk-of-poverty rate decreased from 23.4% in 2017 to 19.7% in 2023, while the Gini coefficient declined modestly to 30.2%, reflecting gradual improvements in income distribution (INSTAT, 2024). These trends suggest that social transfers and broader economic developments have contributed to poverty reduction, although persistent regional inequalities indicate that national interventions alone are insufficient to address structural poverty, particularly in rural and peripheral areas. Local government finances show a significant upward trend in both revenues and expenditures, indicating strengthened fiscal autonomy over the past decade. In 2024, local governments collected 44.4 billion ALL, with 91% derived from taxes and fees, and 3.1% of GDP accounted for by local expenditures. While these improvements reflect progress in decentralization, local revenues remain a small share of total public finance, limiting municipalities' capacity to respond independently to poverty and social needs. The autonomy indicator, which rose from 34.3% in 2015 to 59.8% in 2024, demonstrates a positive trajectory toward fiscal self-sufficiency, yet disparities in fiscal capacity across municipalities persist.

The Has case underscores the dual nature of fiscal decentralization as both an opportunity and a challenge. Enhanced local revenue autonomy allows the municipality to tailor interventions to local needs, potentially improving service delivery, infrastructure, and social support programs. At the same time, uneven local capacity and reliance on central transfers highlight the risks of exacerbating regional disparities if decentralization is not accompanied by targeted capacity-building and strategic fiscal planning. Aligning local expenditure priorities with population needs and maintaining efficient fiscal management will be critical for using decentralization as a tool for sustainable poverty reduction.

CONCLUSIONS AND RECOMMENDATIONS

This study examined the relationship between fiscal decentralization and poverty reduction in Albania, with a particular focus on Has Municipality. National-level data show a gradual decrease in the at-risk-of-poverty rate and modest improvements in income inequality, reflecting the impact of social transfers and broader economic developments. However, persistent regional disparities and structural poverty, especially in rural areas, indicate that national interventions alone are insufficient for ensuring equitable development.

Fiscal decentralization has strengthened the capacity of local governments to manage revenues and expenditures, as evidenced by increased local tax collection, diversified revenue sources, and reallocated expenditures toward human capital and infrastructure. The case of Has Municipality demonstrates how decentralization can provide opportunities for locally tailored interventions. Nevertheless, structural constraints, including limited economic bases, demographic challenges, migration pressures, and capacity gaps, limit the full potential of fiscal autonomy for poverty alleviation. These findings point to several key policy recommendations:

Strengthen Local Fiscal Capacity: Improve municipalities' ability, especially Has, to raise their own revenues by better tax administration, enforcing rural taxes, and diversifying local taxes and service fees.

Targeted Poverty Reduction Programs: Develop local social policies that address key challenges, such as unemployment, an aging population, and youth migration, while ensuring fair access to social and health services.

Capacity Building and Institutional Support: Provide technical assistance and training for municipal staff to improve planning, budgeting, and financial management, ensuring that fiscal decentralization translates into effective service delivery.

Align Local and National Policies: Ensure coordination between central and local governments, aligning fiscal transfers, strategic planning, and poverty reduction efforts to reduce regional disparities and support Albania's European integration goals.

While this study offers valuable insights into the relationship between fiscal decentralization and poverty reduction in Has Municipality, it has several limitations: *Data availability:* The analysis relies primarily on secondary sources, which may lack full granularity, especially for recent years and local-level data. *Scope:* Focusing on a single municipality limits the ability to generalize findings to other contexts within Albania. *Methodological constraints:* The study uses a quantitative approach and does not incorporate qualitative perspectives, such as stakeholder interviews, which could enrich understanding of local governance challenges.

These limitations point to important gaps for future research, including comparative studies across municipalities, in-depth qualitative analysis of governance practices, and examination of long-term impacts of fiscal decentralization on poverty reduction within the broader Albanian and European integration framework

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THE RIPPLE EFFECT MODEL (REM) FOR THE STRATEGIC GOVERNANCE OF TECHNOLOGICAL SOVEREIGNTY: THE NEW CHALLENGES TO THE INTERNATIONAL TECHNOLOGICAL TRANSFER

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Abstract

Technology has become a central driver of economic growth and competitiveness, yet it is increasingly influenced by global geo-economic shifts. This study introduces the Ripple Effect Model (REM), a macro-analytical framework for assessing the multidisciplinary economic impact of technological advancement and international technology transfer. REM quantifies direct, indirect, and induced effects across economic, institutional, environmental, and social dimensions, translating innovation outcomes into measurable indicators. The model supports policymakers in evaluating performance, anticipating systemic change, and strengthening technological sovereignty as a foundation for sustainable and adaptive economic growth.

Keywords: Ripple Effect Model; Technological Sovereignty; Technology Transfer; Innovation Integration; Geo-economics

JEL: O33, F63, E61, O21

INTRODUCTION

After eighteen years of membership in the European Union, Bulgaria has reached a stage where its economic and technological development are deeply interlinked with the broader European integration process. However, this period of convergence coincides with a profound transformation of the global geo-economy – one defined by technological rivalry, reconfigured value chains, and new forms of dependencies. The transition from the post-bipolar world through the era of globalization to today's phase of geo-economic competition has placed technology at the very core of power, productivity, and governance.

Within this shifting environment, the European Union has adopted ambitious strategies such as the *European Green Deal*, the *Digital Compass 2030*, and *Horizon Europe*. Together, they aim to accelerate the twin digital and ecological transitions, strengthen the industrial base, and secure Europe's technological sovereignty. Yet despite this visionary framework, a clear implementation gap persists between political ambition and measurable outcomes. The pace of technological adoption, diffusion, and productivity improvement remains uneven across Member States, particularly between innovation leaders and cohesion economies in Central and Eastern Europe. This asymmetry not only limits the impact of EU investments but also weakens Europe's global competitiveness.

These challenges highlight the urgent need for new governance instruments capable of monitoring, evaluating, and managing the systemic effects of technological change.

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Traditional economic models, such as input–output multipliers and spillover frameworks, provide valuable insights into intersectoral linkages but remain static and inadequate for assessing dynamic innovation processes. They rarely capture the multidimensional nature of transformation – where economic, institutional, environmental, and social factors interact in complex feedback loops.

The present study introduces the Ripple Effect Model (REM) as a conceptual and methodological response to this analytical gap. Developed within the framework of doctoral research, REM offers a macro-analytical approach to assess how innovations – whether generated domestically or acquired through international technology transfer – create cascading effects across multiple layers of the economy and governance. It quantifies direct, indirect, and induced effects to trace how technological implementation propagates through sectors, institutions, and society.

By linking measurable performance indicators to strategic policy objectives, the REM aims to strengthen the feedback between innovation outcomes and policy design. Its core purpose is to transform complex innovation data into actionable intelligence for decision-makers, enabling them to anticipate systemic outcomes, improve resource allocation, and guide national economic transition.

For Bulgaria and similar catching-up economies, the model provides a structured framework for identifying where technological advancement yields the strongest developmental impact and how policy coordination can maximize those effects. More broadly, the study situates this analytical framework within the European Union’s effort to consolidate technological sovereignty, enhance policy coherence, and ensure that innovation translates into sustainable and adaptive growth.

- **Global geo-economic transformation and the strategic role of technology**

Technological capability has become a primary determinant of long-term productivity, competitiveness, and macroeconomic resilience. In the twenty-first century, the distribution of global power is increasingly defined by innovation capacity, data control, and the ability to integrate into high-value technological ecosystems. The transformation of production, finance, and trade under these conditions has created a new techno-geo-economic order, in which technological leadership functions simultaneously as an economic and a strategic variable.

- ***From globalization to strategic fragmentation***

During the period of high globalization (1990–2010), the world economy experienced strong integration of value chains and accelerated knowledge diffusion. Between 1995 and 2010, global trade in high-technology goods increased by more than 250%, while the share of research and development (R&D) expenditure in global GDP rose from 1.6% to nearly 2.2% (World Bank, 2023). Yet the benefits of this openness were unevenly distributed: the ten leading economies accounted for more than 80% of global R&D investment and patent applications, while smaller economies remained locked into technological dependence.

The disruptions of the 2020s – including the COVID-19 pandemic, supply chain shocks, and geopolitical realignments – exposed the fragility of this hyper-globalized system. Production networks are now being re-regionalized, while technologies such as semiconductors, batteries, and artificial intelligence have become subjects of geo-economic competition.

The emerging phase of globalization signals a transition from efficiency-based integration toward resilience-based structuring. Economic power increasingly depends on control over technological nodes, critical materials, and digital infrastructures. This has shifted the analytical foundations of competitiveness: from trade openness to innovation depth, and from price elasticity to technological elasticity – the capacity of an economy to adapt to shocks through innovation and systemic transformation.

- ***The European dilemma: Capital efficiency and policy execution***

The European Union remains one of the largest global investors in research and innovation, allocating close to 3% of its GDP to science, technology, and digital transformation through national and supranational instruments (Eurostat, 2024). However, the conversion efficiency of these investments into productivity gains remains limited. Despite a 45% increase in innovation spending since 2014, the average growth of total factor productivity (TFP) in the EU has stayed below 0.5% annually – approximately half the rate recorded in the United States (OECD, 2022).

This points to a persistent implementation gap: financial inputs are not being transformed effectively into measurable innovation outcomes. The causes are multidimensional – fragmentation of innovation governance, weak coordination between EU and national instruments, and insufficient monitoring of cross-sectoral spillover effects.

The discrepancy between innovation input and innovation impact reveals that Europe's deficit is not in capital, but in economic intelligence – a capacity to monitor, in real time, how technological change propagates through industries, institutions, and regions. Without such intelligence, even large-scale policy frameworks such as the European Green Deal, the Digital Compass 2030, and Horizon Europe remain vulnerable to execution asymmetries.

- ***The analytical gap in measuring transformation***

Traditional macroeconomic approaches – including Solow's residual model, Nelson and Phelps's diffusion theory, and Leontief's input–output analysis – provide foundational tools for understanding growth and structural change (Solow, 1957; Nelson and Phelps, 1966; Leontief, 1986). Yet these frameworks remain essentially static: they assume linear relationships and rarely capture the dynamic feedback mechanisms that define today's complex innovation ecosystems. Their methodological design reflects an industrial paradigm of equilibrium, not the adaptive logic of contemporary technological change.

Empirical evidence increasingly confirms the limits of such linearity. According to the OECD (2022), one euro invested in high-technology manufacturing can generate up to €1.8 of total value added across the economy, while a similar investment in traditional industries yields only €1.2. However, these differentiated multiplier effects remain largely under-measured in European governance systems. Without dynamic evaluation instruments, policymakers are unable to identify where innovation produces genuine transformation – in productivity, employment, sustainability, or institutional modernization.

Recent fiscal analyses also highlight this discrepancy between input volume and structural impact. As the Bank of Finland (2025) observes, the macroeconomic outcome of higher public expenditure depends critically on its technological content and allocation. When resources are directed primarily toward short-term consumption or external procurement, their growth effects remain temporary and sector-specific. By contrast, expenditure targeted toward investment and research and development (R&D) generates sustained

productivity gains and long-term growth. This insight reinforces the argument that it is not the scale of spending but the *quality of its technological integration* that determines the depth and durability of transformation. In this sense, the capacity to distinguish between “smart” and “clumsy” technological deployment becomes a central precondition for effective policy design.

These observations expose a fundamental analytical gap within Europe’s economic governance: while substantial resources are mobilized for innovation, the instruments for measuring their systemic diffusion and second-order effects remain insufficient. The absence of multidimensional metrics obscures how technological adoption interacts with industrial structure, institutional performance, and social adaptation. As a result, decision-makers often rely on aggregate indicators – GDP growth, R&D expenditure, or employment rates – that fail to reveal the cascading nature of innovation-driven change.

Bridging this gap requires a methodological framework capable of capturing both the direct and indirect pathways through which technology alters economic behavior, resource allocation, and governance efficiency. The Ripple Effect Model (REM) emerges as a response to this challenge. It translates complex technological phenomena into quantifiable effects across interconnected systems, allowing policymakers to monitor how innovation propagates through sectors and institutions in real time. By doing so, REM moves beyond static growth accounting and provides the analytical architecture necessary to link innovation policy with measurable transformation outcomes.

- ***Lessons from comparative experience***

The contrast between the United States and Japan provides a relevant historical example. As Frey (2025) noted in *Foreign Affairs*, Japan’s highly coordinated corporate-state model achieved remarkable productivity in the 1980s but became rigid in the face of disruptive innovation. The United States, in contrast, maintained a decentralized innovation ecosystem – combining universities, venture capital, and entrepreneurial experimentation – that allowed it to adapt quickly to technological discontinuities.

Between 1985 and 2000, the U.S. achieved a R&D-to-productivity conversion ratio (TFP growth per R&D intensity point) of approximately 0.7, compared to Japan’s 0.3 (OECD, 2002). This difference illustrates the economic value of adaptive flexibility: the capacity to convert knowledge into innovation and innovation into productivity through constant feedback between policy, capital, and research.

Europe today faces a similar challenge. It possesses the visionary frameworks but lacks adaptive coordination and real-time assessment. Without dynamic instruments for evaluating the transmission of innovation across sectors and regions, Europe’s innovation ecosystem risks remaining administratively excellent but strategically inert.

- ***Toward a new economic governance model***

Sustaining competitiveness in this global environment requires macro-analytical models capable of integrating dynamic feedback across economic, institutional, environmental, and social dimensions. The Ripple Effect Model (REM) has been developed precisely to address this analytical and governance gap. It provides an empirical framework for tracing how technological adoption generates direct, indirect, and induced effects across interdependent layers of the economy and policy.

The term *ripple* reflects the model's underlying logic of propagation: each innovation or technology integration acts as a central disturbance – a “ripple” – whose effects expand through multiple economic, institutional, environmental, and social layers. These waves of impact interact both vertically, across value and supply chains, and horizontally, across industries and governance levels, forming a dynamic network of transmission and feedback.

REM's analytical objective is to capture how a single technological event – such as a new digital infrastructure or an industrial process innovation – stimulates cross-sectoral productivity, accelerates structural upgrading, and generates secondary benefits beyond its initial domain. By mapping and quantifying these multiplier chains, the model identifies where innovation exerts the highest transformation efficiency and how policies can reinforce these ripple paths.

Within this structure, REM defines technology-induced multipliers as indicators that capture the transformation intensity of innovation across sectors and governance systems. These metrics extend beyond static fiscal analogies by revealing the dynamic feedback between innovation inputs and systemic outcomes. In essence, REM transforms the traditional static input–output approach into a dynamic framework that links measurable performance with policy adaptability.

In this sense, REM strengthens Europe's capacity to translate innovation into strategic competitiveness. While the United States converts capital into speed, China converts planning into scale, and South Korea converts R&D into continuity, Europe's strategic advantage can be realized through its capacity to transform knowledge into measurable systemic outcomes – anchoring visionary policy in analytical depth and institutional adaptability.

The Ripple Effect Model (REM): Concept and analytical framework.

Technological innovation rarely produces isolated outcomes. Every new technology introduced – whether developed domestically or acquired through international technology transfer – generates a sequence of transformations that reverberate through production systems, institutions, and society. The Ripple Effect Model (REM) was designed to capture and evaluate these multidimensional dynamics. It offers a systematic way to quantify how innovation triggers direct, indirect, and induced effects that collectively shape the trajectory of national and regional development.

- ***Conceptual foundation***

The model builds upon and extends the classical input–output framework of Wassily Leontief and the innovation diffusion and human capital concepts advanced by Nelson and Phelps. While traditional multiplier models explain how economic shocks propagate through sectors, they remain static and limited to monetary flows. The REM adapts this logic to modern innovation processes, introducing a dynamic and cross-sectoral perspective that reflects today's complex interdependencies between technology, institutions, and sustainability goals.

The model assumes that each technological implementation acts as a trigger event, initiating a ripple of structural and behavioral adjustments across interconnected economic and social systems. These ripples can be traced both vertically – through production, governance, and institutional layers – and horizontally, across sectors, regions, and social groups. The cumulative effect of these interactions determines the extent to which innovation contributes to economic performance, resilience, and long-term sustainability.

- ***Dimensions of measurement***

To capture the multidisciplinary nature of transformation, the REM evaluates technological impacts across **four interrelated dimensions**:

- **Economic dimension** – Measures changes in productivity, investment, trade, and value creation across supply and global value chains. It assesses how innovation stimulates competitiveness and structural upgrading.

- **Institutional dimension** – Evaluates the adaptive capacity of governance structures, public administration, and regulatory systems to support innovation implementation and ensure policy coherence.

- **Environmental dimension** – Monitors how technology adoption influences resource efficiency, emissions reduction, and circularity, aligning with the principles of the European Green Deal and sustainability transitions.

- **Social dimension** – Examines effects on employment, skills, regional cohesion, and quality of life, reflecting how innovation diffusion affects social balance and inclusiveness.

Together, these dimensions allow for the identification of multiplier chains – how a single innovation propagates through the system, generating a combination of direct benefits and secondary spillovers. Unlike conventional economic indicators, the REM interprets these effects dynamically, emphasizing their interconnections and feedback loops.

- ***From measurement to governance***

The analytical contribution of the REM lies in linking measurable performance indicators to strategic governance mechanisms. It provides policymakers with the means to evaluate whether the intended outcomes of innovation policy – growth, sustainability, and cohesion – are achieved in practice. By quantifying the ripple effects of technological change, the model bridges the persistent gap between political vision and economic reality.

Moreover, the REM supports data-driven governance. By integrating empirical data into a systemic evaluation structure, it enables the conversion of innovation statistics into governance intelligence – insights that inform policy adjustment, investment prioritization, and cross-sector coordination. In this way, the model aligns with the European Union’s ambition to enhance technological sovereignty and ensure that innovation investments translate into measurable socio-economic returns.

- **Application and policy relevance of the Ripple Effect Model (REM)**

The strength of the Ripple Effect Model lies not only in its analytical depth but also in its potential to inform real-world policymaking. The model offers a structured approach for governments, regional authorities, and the European Union to translate innovation data into actionable insights for governance and investment planning.

- ***The European context***

In the European Union, technological progress is both a driver and a test of integration. Policies such as the *European Green Deal*, the *Digital Compass 2030*, and *Horizon Europe* share the objective of accelerating transformation toward sustainability, competitiveness, and cohesion. However, despite this ambitious vision, implementation outcomes vary widely across Member States. Many regions still experience low absorption of innovation funds, fragmented institutional capacity, and inconsistent coordination between sectoral strategies.

The REM addresses these challenges by introducing a common framework to monitor and manage the multisectoral ripple effects generated by technological innovation. By integrating indicators across the economic, institutional, environmental, and social dimensions, the model helps identify which policies deliver measurable results and where adjustments are needed. This makes it particularly valuable for cohesion and convergence policies, where real-time feedback and cross-sectoral monitoring are essential.

Furthermore, the model aligns closely with the EU's growing emphasis on technological sovereignty – the capacity to control critical technologies, manage dependencies, and maintain competitiveness in a rapidly shifting global environment. Through the REM, policy designers can evaluate how each innovation or investment contributes to sovereignty objectives by strengthening Europe's technological ecosystems and reducing external vulnerabilities.

The national and regional dimension: The case of Bulgaria

For Bulgaria and other catching-up economies in Central and Eastern Europe, the REM provides a practical framework for identifying where innovation has the strongest multiplier effect and where systemic bottlenecks persist. The model allows for differentiated policy approaches – supporting industrial modernization in one region, public administration reform in another, and skills upgrading where labor-market mismatches constrain innovation uptake.

In Bulgaria's case, despite notable progress in digital infrastructure and renewable energy, technological transformation often remains compartmentalized and weakly connected to broader structural change. The REM enables policymakers to quantify the diffusion pathways of each innovation, revealing how specific interventions – such as digitalization of industry, investment in clean technologies, or smart specialization – generate economy-wide effects. This evidence base can then guide the reallocation of resources and the design of integrated innovation strategies at both national and regional levels.

From analytical model to governance instrument

Beyond measurement, the REM functions as a strategic governance instrument. It strengthens the feedback loop between innovation outcomes and policy design, creating the conditions for continuous learning and adaptation. This is particularly important in the European policy environment, where overlapping initiatives often lack mechanisms for coordinated monitoring and evaluation.

By embedding the REM into national and regional planning, decision-makers gain the ability to manage transformation as a living process – one that evolves through feedback, data, and policy alignment. The model thus supports a shift from static policy evaluation toward adaptive governance, where the effectiveness of innovation policies is continuously refined in response to new technological and economic realities.

CONCLUSION

The contemporary global economy is undergoing a profound reconfiguration in which technological advancement has become both a source of growth and a determinant of strategic power. For the European Union, this shift underscores the need for governance models that can ensure coherence between political vision and implementation outcomes. The Ripple Effect Model (REM) directly addresses this need by transforming the analysis of innovation from a descriptive exercise into a tool for strategic management.

By measuring how technological changes propagate through economic, institutional, environmental, and social systems, the REM enables policymakers to trace the real impact of innovation beyond the initial investment stage. It captures not only the financial returns but also the structural and behavioral effects that define long-term competitiveness and resilience. This multi-layered perspective makes the model particularly relevant to the European policy framework, where complex interactions between industrial policy, cohesion policy, and green and digital transitions require adaptive and data-informed decision-making.

The study demonstrates that effective technological governance depends not solely on the scale of investment or research intensity but on the capacity to manage interdependencies – between sectors, regions, and policy domains. The REM thus provides a methodology for converting fragmented innovation data into governance intelligence, supporting continuous policy refinement and strategic alignment. In doing so, it bridges the persistent gap between European and national priorities, between vision and execution, and between innovation ambition and measurable transformation.

Looking forward, the Ripple Effect Model has the potential to evolve into a cornerstone of multidisciplinary policy evaluation within the European Union and its Member States. Its adaptability allows it to be applied to diverse policy contexts – from assessing industrial transitions and energy systems to measuring the social and environmental impact of technological change. Most importantly, it contributes to the Union's broader objective of achieving technological sovereignty – not as isolation, but as the capacity to innovate, integrate, and sustain competitiveness through shared European values and knowledge.

In this sense, the REM is more than an analytical construct: it is a strategic governance compass for an era defined by uncertainty, interdependence, and transformation. By operationalizing the ripple logic of technological progress, it empowers Europe and its Member States to turn innovation from aspiration into measurable, sustainable progress.

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THE IMPACT OF CLIMATE RISK ON GDP GROWTH IN EUROPEAN COUNTRIES

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Abstract

We examine the impact of CO₂ emissions on economic growth across 27 EU member states and 3 Western Balkan countries that are EU candidate countries, from 2004 to 2023, using a robust fixed-effect model. The results indicate a statistically significant positive relationship between carbon dioxide and economic growth, suggesting that the economic expansion in these countries, at least up to 2019, has been closely related to carbon-intensive industrial activities, transportation, and other factors. A complementary analysis focusing on the period before the EU Green Act from 2004 to 2019 confirms a positive association, emphasizing the dependence on heavy industries with limited environmental regulation. Our findings reveal a complex trade-off between economic development and environmental sustainability, highlighting that efforts to reduce carbon emissions may challenge traditional growth models. The study contributes to understanding the interconnection between environmental policies and economic growth. It provides valuable insights for policymakers seeking to balance these critical priorities by implementing further sustainable growth policies.

Keywords: CO₂ emissions, GDP Growth, European Union, Western Balkans

JEL Classification: Q53, Q54, Q56, O44, O52

1. INTRODUCTION

The association between environmental sustainability and economic development has become a major global concern in recent decades. Since the Industrial Revolution, economic growth has been accompanied by an increase in pollution and environmental deterioration. However, it was not until the years 1970 and 1980 that the international community

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started to recognize the long-term consequences of CO₂ emissions (Robalino-López et al., 2015). The publication of the climate reports, the formation of Kyoto Protocol, which entered into force in year 2005, and the Paris Agreement, which entered into force in year 2016, and also the growing pressure for green transitions the last year, has become an actual and fundamental topic for academics, researchers, and policymakers (Cuadros-Casanova et al., 2023), especially for European Union countries that are aiming towards a zero-carbon economy and Western Balkan countries such as Albania, Bosnia and Herzegovina, and North Macedonia, which are EU candidates.

Some previous studies have tried to examine this relationship, and many of them are focused on the Environmental Kuznets Curve (EKC)(Robalino-López et al., 2015), which suggests that CO₂ emissions per capita, GDP per capita, and the element of income level have an inverted U-shaped relationship (Stern, 2004). However, in our paper, we follow a different approach by using a fixed effect model focused on annual growth percentage, to analyze the relationship between CO₂ emissions and GDP Growth for 27 countries that are part of the European Union and Albania, Bosnia and Herzegovina, and North Macedonia, which are three Western Balkan countries that are candidates to be part of EU.

The main objective of our research is to empirically evaluate whether CO₂ emissions have a significant impact on GDP Growth. This research contributes to the existing literature by analyzing different groups of countries together and over a large timeframe. We investigate the association between CO₂ emissions and GDP growth, enabling policymakers to implement a well-established regulatory framework for sustainable growth, particularly in light of EU countries' aim for a zero-carbon economy.

We found a statistically significant positive relationship between CO₂ emissions and GDP Growth. The result suggests that the economic development relied tightly on heavy industries, the greatest causes of carbon dioxide emissions, in the last two decades, primarily until 2019 when the green acts on sustainable growth were not that enforced and well-established in the EU as they have been from the year 2020 and onward, where the green act aims to achieve a zero-carbon economy until 2050.

The remainder of the paper is structured as follows: Section 2 briefly reviews the literature. The data, sample selection, and variables used are discussed in Section 3. Section 4 presents the econometric model, and Section 5 focuses on the empirical findings. We conclude in Section 6.

2. LITERATURE REVIEW

Over the past few decades, the relationship between economic growth and environmental sustainability – particularly carbon dioxide (CO₂) emissions – has gained significant attention among scholars and policymakers. Various studies have examined this connection from diverse regional and methodological perspectives, aiming to better understand how economic development interacts with environmental deterioration. For example, Marjanović et al. (2016) explored whether GDP growth can be predicted based on CO₂ emissions, showing a strong link between periods of rapid economic development and rising emissions. Their findings highlight the need to reassess traditional growth models. Similarly, Mikayilov et al. (2018) focused on Azerbaijan and concluded that economic expansion in

emerging economies often contributes to environmental harm, reinforcing the importance of transitioning toward greener practices. Azomahou et al. (2006) employed a nonparametric panel approach to investigate the economic development–emissions relationship, offering insights into how this link evolves without assuming a specific functional form. In another study, Altıntaş & Kassouri (2020) examined whether the Environmental Kuznets Curve (EKC) holds for Europe, distinguishing between ecological footprint and CO₂ emissions per capita. They emphasized that not all environmental indicators follow the same pattern across countries.

The top six global CO₂ emitters by Ortega-Ruiz et al., (2022) established that causal relationships vary by nation, suggesting that policy responses should be tailored to each country's developmental stage. Magazzino et al., (2024) introduced a novel nonparametric method to estimate greenhouse gas emissions drivers and emphasized innovation's role in emissions reduction. The existing literature examines EU countries using cointegration analysis and finds a long-term link between economic output and CO₂ emissions. (Onofrei et al., 2022), while Soytaş & Sari (2009) addressed the specific challenges faced by EU candidate members. They highlighted that aspiring member states often face a trade-off between development and environmental goals.

In the context of the Western Balkans, Vërbovcı et al. (2024) analyzed how innovation can support green growth. They concluded that strategic investments in sustainable technology are essential for long-term progress. Kasperowicz (2015) uses an Error Correction Model (ECM) to confirm the existence of both short-run and long-run relationships between emissions and GDP. Omri (2013) investigated the nexus of CO₂ emissions, energy use, and economic growth across MENA countries through simultaneous equations models. His findings underscore a bidirectional relationship between economic activity and emissions, revealing complex interdependencies. Kostakis et al. (2023) focused on cross-correlated countries and tested the EKC, providing evidence that the emissions–growth relationship varies significantly depending on country characteristics. Stern (2004) critically reviewed the EKC hypothesis and argued that the theory might oversimplify the dynamics between development and environmental quality. Meanwhile, Andreoni (2021) offered a timely analysis of how COVID-19 restrictions impacted CO₂ emissions in Europe, showing how reduced economic activity temporarily lowered emissions, without necessarily indicating structural change.

In conclusion, these studies demonstrate that although economic growth has been linked to higher CO₂ emissions, this connection is not permanent. The findings indicate that with innovation, investment in green technologies, and targeted policies, it is possible to shift toward sustainable growth models that separate economic development from environmental damage.

3. DATA AND VARIABLES

3.1 Data and Sample Selections

We utilize macroeconomic indicators sourced from the World Bank Indicators database. The dataset comprises annual data for 27 (twenty-seven) European Union member states,

as well as Albania, Bosnia and Herzegovina, and North Macedonia – three candidate countries from the Western Balkans aspiring to join the European Union.

3.2 Variables

Our dependent variable is GDP Growth, and the primary independent variable analyzed is CO₂ emissions. We have also used other variables such as Gross Capital Formation (Chaabouni & Saidi, 2017; Kasperowicz, 2015), Population, Exports, and Energy use (Omri, 2013; Kostakis et al., 2023). Table 1 provides descriptive statistics that summarize the central tendency and variability of the main variables in the panel dataset.

Table 1. Descriptive statistics

Variables	Obs.	Mean	Std. Dev.	Min	Max
GDPG	600	2.358	3.942	-16.04	24.616
ICO2	600	3.763	1.406	.311	6.761
IPOPUL	600	15.709	1.319	12.902	18.244
GCF	600	4.487	14.71	-54.153	99.69
EXP	600	5.41	8.461	-27.726	52.097
IENER	592	4.286	.338	3.038	5.052

Source: Author's elaboration.

The GDP growth has a mean of 2.36% with a high standard deviation of 3.94, indicating considerable variation in economic growth among countries and over time. The minimum observed value is -16.04%, while the maximum is 24.62% reflecting the diverse economic experiences, including periods of recession and strong recovery.

The natural logarithm of CO₂ emissions has a mean of 4.4876% with a very high standard deviation of 14.71, and extreme values from -54.15% to 99.69% suggesting fluctuations in investment patterns. Export growth has a mean of 5.41% but also exhibits high dispersion with a standard deviation of 8.46. In contrast, the natural logarithm of energy use (IENER) displays less variability, with a mean of 4.286 and a standard deviation of 0.338, indicating more consistent energy consumption across the panel.

4. ECONOMETRIC MODEL

We evaluate both the random and fixed effects regression models, employing the Hausman test to identify the most appropriate model for our panel data. Additionally, we address heteroskedasticity by using the robust FE model. To analyze the effect of CO₂ on GDP growth, we estimate the following regression model:

$$GDPG_{i,t} = \alpha + \beta ICO2_{i,t} + \rho IPOPUL_{i,t} + \delta GCF_{i,t} + \vartheta EXP_{i,t} + \omega IENER_{i,t} + \gamma_i + \varepsilon_{i,t} \quad (1)$$

where:

In this model, the dependent variable GDPG_{it} represents annual GDP Growth in percentage, for country *i* at time *t*. The main explanatory variables are ICO2_{it} – represents annual CO₂ emissions in its natural logarithm for country *i* at time *t*. IPOPUL_{it} represents annual total population in its natural logarithm for country *i* at time *t*. GCF_{it} – represents Gross

Capital Formation in annual percentage growth, for country i at time t . EXP_{it} – represents Exports for goods and services, in annual percentage growth, for country i at time t . $lENER_{it}$ – represents Energy Use in its natural logarithm for country i at time t . γ_{it} – represents the country-specific fixed effect term and ε_{it} represents the error term.

4.1 Correlation matrix

We performed a pairwise correlation matrix to examine the relationships between variables. This preliminary phase assists in identifying the presence of potential multicollinearity among the variables, as well as providing an initial understanding of the direction and strength of the association between these variables.

Table 2. Pairwise correlation matrix.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) GDPG	1.000					
(2) lCO2	-0.153 (0.000) ***	1.000				
(3) lPOPUL	-0.149 (0.000) ***	0.943 (0.000) ***	1.000			
(4) GCF	0.553 (0.000) ***	-0.039 (0.338)	-0.049 (0.235)	1.000		
(5) EXP	0.726 (0.000) ***	-0.126 (0.002) ***	-0.112 (0.006) ***	0.365 (0.000) ***	1.000	
(6) lENER	-0.031 (0.455)	0.101 (0.014) **	0.022 (0.597)	0.116 (0.005) ***	0.045 (0.279)	1.000

Source: Author's elaboration.

The correlation matrix shows that CO₂ emissions have a weak negative association with GDP Growth (GDPG), estimated as -0.153, and it is statistically significant at 1% level, since $p\text{-value} < 0.01$. This suggests that an increase in CO₂ emissions would result in lower economic performance, but this is a situation that overlooks other factors, considered in isolation as a *ceteris paribus*. Similarly, the variable of the population in its natural logarithm (lPOPUL) has a weak negative correlation with GDPG, estimated as -0.149, which is statistically significant at 1% level, since $p\text{-value} < 0.01$. However, energy use in its natural logarithm form (lENER) and GDPG have a weak correlation, but it does not have a statistically significant correlation with each other.

It should be noted that lCO2 and lPOPUL exhibit a considerable positive correlation, with a correlation coefficient of 0.943, which is statistically significant at 1%. This association suggests that countries with larger populations tend to emit more CO₂, primarily due to higher industrial activity, transportation needs, and consumption patterns. This level of correlation indicates a potential multicollinearity issue, prompting us to use the VIF test to assess its presence and impact on the regression results.

4.2 Variance Inflation Factor

We performed a Variance Inflation Factor (VIF) analysis to assess the presence of multicollinearity. We found that the overall mean VIF value of 4.542 falls within an acceptable range.

Table 3. Variance inflation factor.

	VIF	1/VIF
ICO2	9.704	.103
IPOPUL	9.562	.105
EXP	1.185	.844
GCF	1.179	.848
IENER	1.079	.927
Mean VIF	4.542	

Source: Author's elaboration

Moreover, the individual VIF values for ICO₂ and IPOPUL are less than 10, signifying the lack of multicollinearity issues.

5. EMPIRICAL RESULTS

In this section, the empirical findings and results of this study will be presented. We use the robust fixed effects model to account for heteroskedasticity and country-specific unobserved heterogeneity. The CO₂ emissions in their natural logarithm form show that for 1% increase in CO₂ emissions, the annual GDP Growth will increase by 0.03549 percentage points, holding IPOPUL, GCF, EXP, and IENER constant. Since the coefficient is positive and the p-value (0.001) is even lower than 0.01, it indicates a statistically significant positive relationship between CO₂ emissions and GDP Growth. This reflects the dependence that the observed countries have had on economic activities from heavy industries and fossil fuels, which emit a considerable amount of CO₂, primarily until 2019 (Andreoni, 2021). This has led to sensitivities in environmental well-being and sustainable growth, particularly in the context of renewable energy. However, those steps, especially in heavy industries and transportation, were not prioritized as they have been since 2020. Two of the other variables, GCF (Gross Capital Formation) and EXP (Exports), have a positive and significant impact on GDP growth, with their effects being statistically significant at the 1% level. Next, the energy use shows a negative relationship with GDP growth and is also statistically significant. This indicates that the quantity of energy is not always related to its quality, and it may have also led to inefficient usage, also since the majority of the countries in the sample are service based and tech-driven countries, it leads to a negative relationship with GDP growth, moreover the steps toward renewable energy were present at an earlier stage, which have impacted the results.

Table 4. Robust Fixed Effect Regression Results (2004–2023).

GDPG	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
ICO2	3.549	1.004	3.54	0.001	1.496	5.601	***
IPOPUL	0.412	2.63	0.16	0.877	-4.968	5.791	
GCF	0.122	0.034	3.56	0.001	0.052	0.192	***
EXP	0.252	0.041	6.13	0.000	0.168	0.336	***
IENER	-3.495	1.008	-3.47	0.002	-5.557	-1.432	***
Constant	-4.498	43.722	-0.10	0.919	-93.92	84.924	
Mean dependent var		2.346	SD dependent var			3.963	
R-squared		0.663	Number of obs.			592	
F-test		78.137	Prob > F			0.000	
Akaike crit. (AIC)		2619.104	Bayesian crit. (BIC)			2641.021	

Source: Author's Elaboration. Note: *** $p < .01$, ** $p < .05$, * $p < .1$

The coefficient of determination, R^2 , is 66.30%, indicating that this model explains 66.30% of the total variation in the regression. This model is suitable for analyzing our dataset since the indicator measuring the overall model's significance, $\text{Prob} > F$, is 0.000, which is below the 1% significance level.

The main finding is that CO2 emissions have a significant impact on GDP growth, and a positive relationship exists between the two. To further explore why the relationship between these two variables is positive, despite the EU's goal of a 0-carbon economy and its focus on green initiatives, we have also conducted a complementary regression.

Robust fixed regression analysis was conducted for the same countries and variables, but for a different subperiod encompassing the years 2004 to 2019. This period predates the discussions and signing of the Green Act, as well as the implementation of COVID-19 related environmental and emission regulations within the EU. The results indicate that the positive association observed is attributable to the dependence of economic performance on heavy industries prior to the establishment of comprehensive environmental regulations.

Robust Fixed Effect Regression Model (2004–2019)

Table 5. Robust Fixed Effect Regression Results (2004–2019).

GDPG	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
ICO2	4.173	1.145	3.64	0.001	1.831	6.515	***
IPOPUL	0.635	3.233	0.20	0.846	-5.977	7.247	
GCF	0.134	0.029	4.56	0.000	0.074	0.194	***
EXP	0.215	0.039	5.51	0.000	0.135	0.294	***
IENER	-3.642	1.021	-3.57	0.001	-5.731	-1.554	***
Constant	-9.495	52.62	-0.18	0.858	-117.116	98.125	
Mean dependent var		2.433	SD dependent var			3.636	
R-squared		0.652	Number of obs			480	
F-test		87.752	Prob > F			0.000	
Akaike crit. (AIC)		2038.229	Bayesian crit. (BIC)			2059.098	

Source: Author's elaboration. Note: *** $p < .01$, ** $p < .05$, * $p < .1$

We conducted a complementary regression to investigate the relationship between the theory on CO₂, which suggests a positive impact on GDP growth, and the presence of environmental regulations during the analyzed period. We show that CO₂ emissions have a positive relationship with GDP growth, with a slope coefficient greater than the previous one ($4.173 > 3.549$), and this relationship is statistically significant at the 1% level as well. Those results align with the theory mentioned above regarding the timeframe considered.

6. CONCLUSIONS

This research article empirically examines the relationship between CO₂ emissions and GDP growth across 27 EU countries and 3 Western Balkan countries, which are EU candidates, from 2004 to 2023. The results show that CO₂ emissions have a significant positive effect on GDP growth, indicating that carbon-intensive sectors like heavy industries and transportation drive economic expansion. The findings highlight dependence on unsustainable growth models that prioritize output over environmental costs. Although the EU aims for a green transition, implements green policies, and establishes stronger environmental and sustainability regulations, these results suggest that, until recent years, economic growth has remained closely linked to environmental deterioration. The main challenge is not just reducing CO₂ emissions but also restructuring the growth model itself so that economic progress no longer relies on harming the planet but instead aligns with environmental goals.

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MODELING AND SIMULATION OF AN INNOVATIVE NUCLEAR–RENEWABLE HYBRID ENERGY SYSTEM FOR SEAPORT REGIONS

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Abstract

Seaport regions face unique energy challenges due to high population density, vulnerability to climate change, and the rising demand for reliable low-carbon power. Both renewable and nuclear energy can provide significant contributions to decarbonizing the maritime sector. This study presents a techno-economic analysis of a nuclear-renewable hybrid energy system (Nu-R HES) modeled to meet the electricity demand of a seaport region in Albania. Small modular reactor (SMR), solar, and a hydroelectric power plant are considered as components of the hybrid energy system. The hybrid energy system management is load following, so the sum of the electricity generated tends to meet the demand. The analysis is performed using Excel for modeling and Monte Carlo mathematical simulation to evaluate the energy output and the cost of energy of the Nu-R HES. The results show the versatility of the hybrid system in providing for the electricity demand, promoting sustainable development for seaport regions. The cost of energy of the hybrid energy system is competitive with current electricity prices in Albania.

Keywords: nuclear-renewable hybrid energy systems, seaport, cost of energy, simulation

JEL classification: C6, O3

INTRODUCTION

Shipping carries over 80% of global trade volume (UNCTAD, 2023). This statistic clearly highlights the importance of maritime transport for the global economy today. Demand for maritime freight continues to increase, driven by multiple factors, such as globalization, ongoing economic growth, and the steady increase in the world's population (Rusinov et al., 2021). This increase, while facilitating the movement of goods, also leads to a greater use of fossil fuels, which subsequently results in increased greenhouse gas (GHG) emissions.

IMO's revised Strategy on Reduction of GHG Emissions from Ships (IMO, 2023) aims to reduce GHG emissions to net-zero close to 2050, with indicative checkpoints by 2030 and 2040. As the maritime sector moves away from fossil fuels, the discussion has also started on how port operations can transition to a low-carbon port model by harnessing

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renewable energy and alternative fuels, such as LNG, hydrogen, ammonia, and methanol (Damman et al., 20025). Seaports are defined by the geographical clustering of activities with significant energy demand and supply, encompassing energy-intensive industries, power generation, distribution, and associated projects. Consequently, the electric grid at a seaport needs to maintain close to 100% reliability to sustain uninterrupted activities.

In recent years, it has been emphasized that ports and ships must work together to adopt Renewable Energy Sources (RES) (Raihan et al., 2025). However, due to their intermittent nature, studies have shown that a solitary form of RES is often insufficient to cater for a significant portion of a seaport's energy demand (Gutierrez-Romero et al., 2019; Sifakis et al., 2021). Conversely, nuclear energy has been acknowledged for many years as a reliable and low-emission option for electricity generation, capable of providing a reliable power supply, often baseload or load with slower changes related to seasons and/or daily variances (IAEA, 2023). However, concerns about safety, waste management, and capital costs have hindered its widespread adoption (NEA, 2020).

A promising innovative solution to these challenges is the integration of nuclear energy with RES in a Hybrid Energy System (HES) (IAEA, 2023). The combination of “nuclear and RES in hybrid energy systems” by leveraging the two technologies to solve both nuclear and RES limitations offers synergistic benefits, improving the efficacy, dependability, and cost of clean energy generation (NREL, 2020).

In this paper, an innovative Nu-R HES is modeled and evaluated to cater to the energy needs of a seaport region, to inform approaches to improve energy resilience, reduce costs, and aid in low-carbon electrification for seaports and maritime transport. Evaluation consists of a techno-economic assessment of the Nu-R HES. The study includes a brief overview of integrated Nu-R HES in Section 2. Methodology and system components and modeling are presented in Sections 3 and 4. Section 5 provides for simulation and results, followed by discussion in Section 6. Lastly, conclusions are presented in Section 7.

NUCLEAR-RENEWABLE HYBRID ENERGY SYSTEMS

The main rationale for nuclear and renewable-based hybrid energy systems is to maximize energy utilization and grid balancing (Dong et al., 2021) while reducing greenhouse gas emissions and minimizing dependency on fossil fuels (IAEA, 2023). Figure 1 shows a possible Nu-R HES architecture.

Intermittent RES, such as wind and solar, introduces complexity to implementing the Nu-R HES, since rapid fluctuations of RES must be mitigated by either the nuclear plant or an energy storage system. Control systems should be designed to accommodate such variations and must consider the coordination of many power sources, incorporate reactor power regulation into the overall microgrid control scheme, as well as adjustable thermal loads (Michaelson & Jiang, 2021).

To maximize the energy utilization, a Nu-R HES can produce several energy products, including electricity, hydrogen, substitute natural gas, hot process gases or steam for merchant or captive use, and transportation fuel; along with non-energy products whose production is energy-intensive, such as potable water from the desalination of seawater and

chemical feedstocks for fertilizer, polymers, plastics, and textiles. The different power sources, possible products, and coupling modes allow for many combinations. Therefore, Nu-R HES is a proposed solution for fulfilling energy generation demand and industrial processes that may simultaneously tackle the concerns regarding grid flexibility, climate change, energy security, optimal return on invested capital, and settling public concerns. It must be noted that while fully integrated Nu-R HES have not yet been demonstrated, the component technologies are mature (Ruth, et al., 2014).

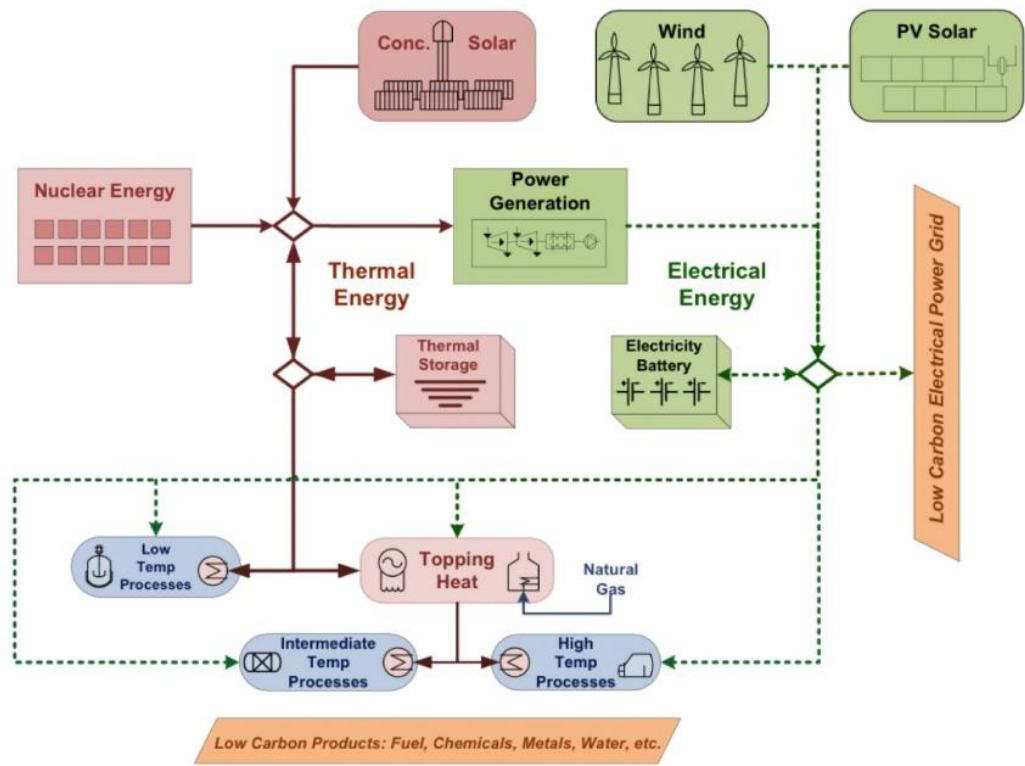


Fig. 1. Nu-R HES possible architecture (Masotti, Cammi, Lorenzi, & Ricotti, 2023).

Several significant challenges are associated with Nu-R HES modeling, as research in this field has demonstrated. These challenges primarily arise from the complex interconnections between multiple subsystems and the extremely dynamic nature in which they operate (Masotti, Cammi, Lorenzi, & Ricotti, 2023). Moreover, a techno-economic optimization of the energy system becomes more difficult since interactions with several energy output markets must be taken into consideration (Arent et al., 2021).

Small Modular Reactors (SMR)

Nuclear technology was originally expected to advance towards massive Nuclear Power Plants (NPP) due to their more favorable neutron economy. However, their high capital investments, long licensing procedure and erection time, as well as the major influence on

small electrical grid systems, created the favorable conditions for the consideration and promotion of new small- and medium-sized nuclear reactor projects (Borissova, 2015). SMRs have been capturing the attention of policymakers as technology options to address part of the challenges observed in recent nuclear projects (IAE, NEA, & OECD, 2020).

The SMR concept aims to develop advanced small-scale nuclear reactors with an equivalent electric power output between 10 MWe and 300 MWe (IAEA, 2007), that can be manufactured in a factory, rather than on-site, utilizing sophisticated manufacturing methods. Factory build might prove SMRs to improve the competitiveness of NPPs and has traditionally been based on the expectation that successive plants of standard design will cost less and less through the learning effects in factory settings (Rosner & Goldberg, 2011).

SMRs have many advantages, which include adopted passive safety systems that minimize the risk of catastrophic accidents, long refueling intervals of 12 to 20 years (Filippone & Jordan, 2017), and load-following capabilities due to high-capacity and reliability (Pioro, Duffey, Kirillov, & Dort-Goltz, 2020). Due to their modest size, SMRs have more options for deployment since they may be built in locations that are inappropriate for bigger NPPs. The downside is that spent fuel management for SMRs would be more complex, and therefore more expensive, because the waste would be located on many more sites (Morales Pedraza, 2017).

Conceptually, SMRs based on Generation IV reactors have all the features of Generation III+ units and incorporate both water-cooled and advanced (i.e., non-water-cooled) alternative designs. Depending on fuel and their design, SMRs can either use the open fuel cycle of Generation III+, in which fuel is used just once before being stored as waste, or the Generation IV reactor's closed fuel cycle, which reduces waste by reprocessing and reusing spent fuel.

METHODOLOGY

This study employs Monte Carlo mathematical simulation using Oracle Crystal Ball software for the techno-economic assessment of a Nu-R HES for the Seaport Region of Durres, Albania. Monte Carlo analysis is a widely used method for assessing uncertainty by generating random values to evaluate outcome probabilities (Xi et al., 2025). In this study, a Nu-R HES model is built, uncertainty is modeled, and it is solved through a Monte Carlo simulation. This method facilitates the creation of samples that demonstrate value continuity, long-term trends, and the associated probability distribution for uncertainties such as load, Nu-R HES, and RES output. It must be noted that the use of this method in real-time applications is restricted by its dependence on lengthy sequential simulations (Al-Hanoot et al., 2025).

SYSTEM COMPONENTS AND MODELLING

The proposed Nu-R HES in this paper is shown in Figure 2. It consists of a pair of SMRs, a Solar Photovoltaic system (PVsys), and a Hydroelectric Power Plant (HPP).

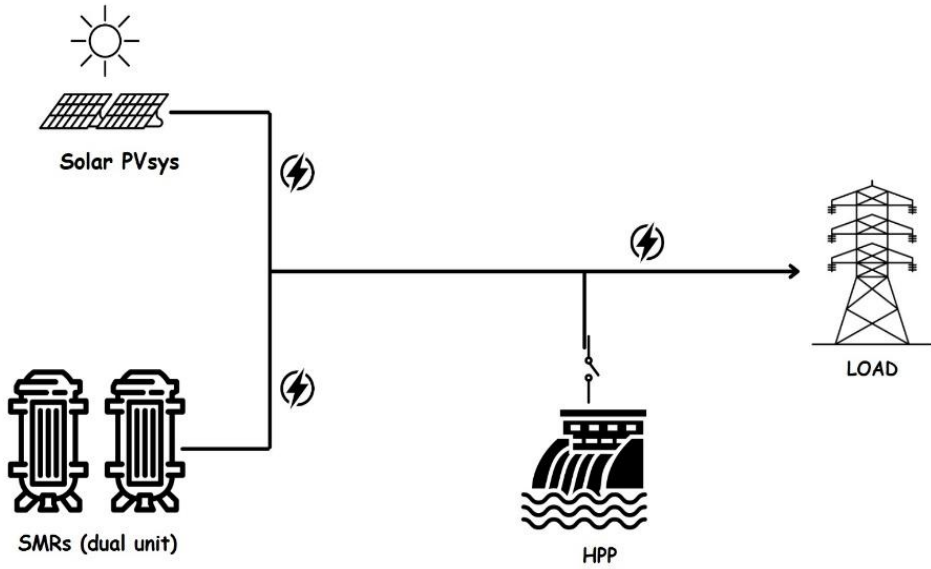


Fig. 2. Proposed Nu-R HES schematic

LOAD

The Nu-R HES is modeled to serve the load of the Durres seaport region, Albania. The region is home to the seaport of Durres, the largest seaport in Albania. Currently, the seaport handles 90% of Albania's seaborne trade (INSTAT, 2024), including passenger, containers, dry bulk, and reefer cargo, making it one of the most important economic hubs in Albania. The region load is obtained from data from the Transmission System Operator (OST) in Albania, for the year 2024 (OST, 2025).

SMR

The selected SMR has a nominal capacity of 150MWe and serves as the baseload power source, ensuring a stable and continuous supply of electricity to meet the high energy demands of industrial operations. The study adopted the Kairos Power KP-FHR Commercial Plant parameters (Kairos, 2025).

PVsys

The PVsys has a nominal installed capacity of 100 MWp and plays a crucial role in the hybrid configuration, leveraging Albania's high solar irradiation levels to enhance energy generation. The PVsys is represented using data available from the Photovoltaic Geographical Information System (PVGIS) of the Joint Research Centre: EU Science Hub of the European Commission.

HPP

The HPP has a nominal capacity of 600 MWp. However, it is modeled as a minor contributor relative to nuclear and solar, providing additional energy only in cases when the power production from SMR and the PVsys does not satisfy the load, thereby increasing system resilience. The HPP data is obtained from the OST in Albania, for the year 2024 (OST, 2025).

SIMULATION AND RESULTS

The operating behavior of the HES is simulated to assess the technical and economic performance of the system. Modeling is carried out in Excel, and a Monte Carlo simulation is run through Oracle Crystal Ball software. Data consists of hourly-monthly time series for a year for all the variables – Load, SMR, PVsys, and HPP output. The model includes uncertainties, such as Load growth, PVsys, and HPP output. Normal distributions with the standard deviation of the mean are used to model the uncertainty, including seasonal changes. Then the model is sampled 10,000 times, hence much more operational performances of the HES over a year for a whole range of PV and HPP outputs, and Load will be captured.

Technical performance

The results shown in Table 1 provide a range of possible outcomes and their probabilities, reflecting the uncertainty of the input variables, rather than a single, definitive result. A normal distribution is assigned to represent its range of possible values, as shown in Figures 3a and 3b. The uncertainty in the output of HES comes from the uncertainty in the output of PVsys, and HPP.

Table 1. Simulation results

Variable	GWh
Load	764 to 788
HES output	1401 – 1406
PVsys output	185 – 189
HPP input to HES	3.7 – 5.0
Power Outage (hrs.)	17 – 39
Imports	0.1 – 3.6
Export	615 – 638

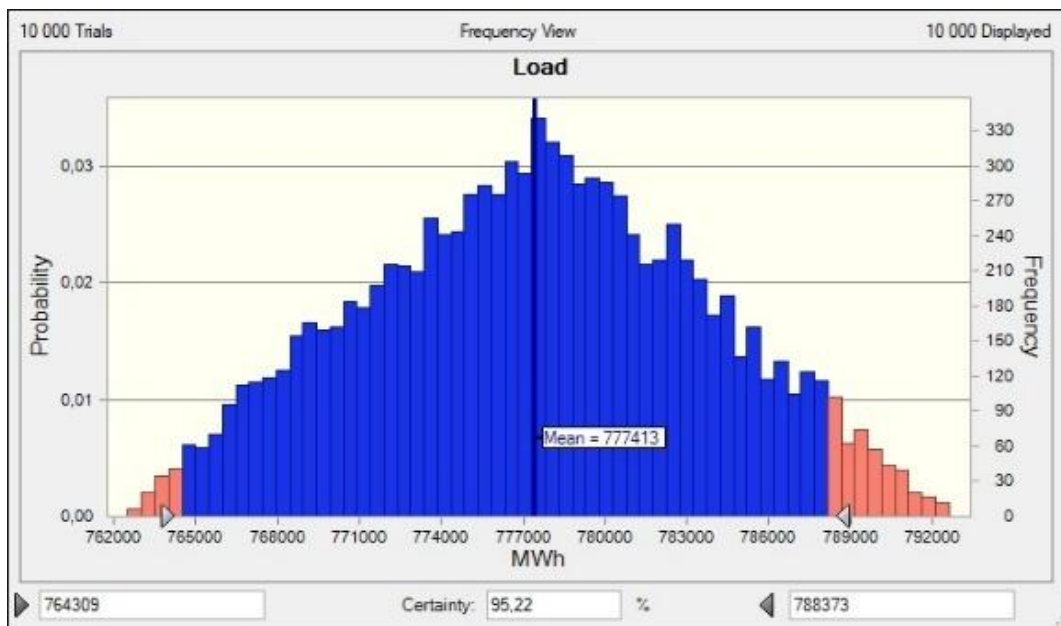


Fig. 3a. Load

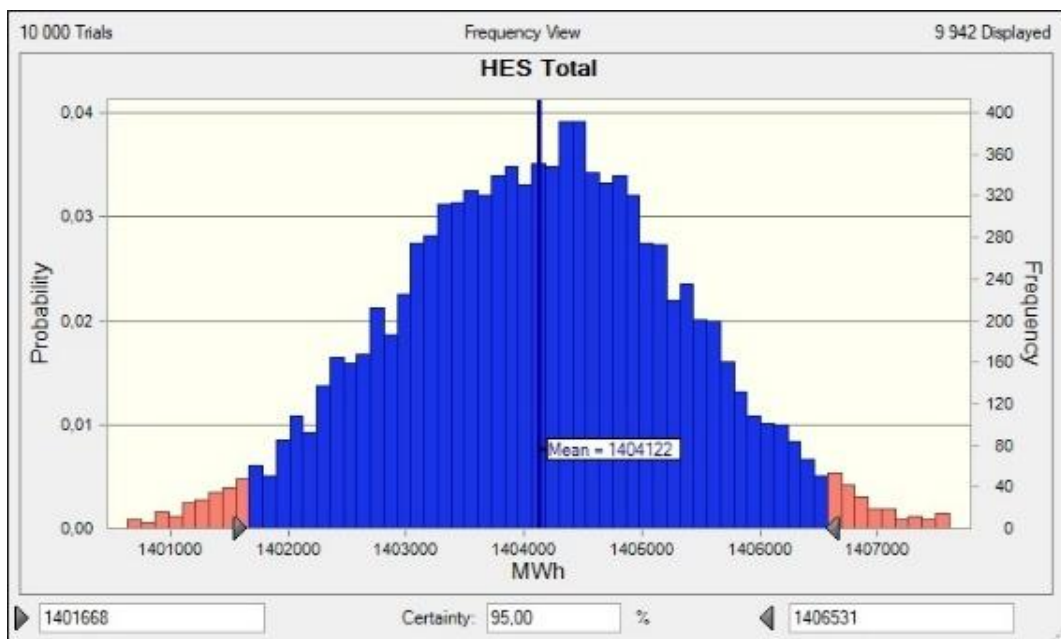


Fig. 3b. HES output

Economic performance

For the economic performance of the HES, the cost of electricity (COE) is used as a key performance indicator (KPI). The COE is the average cost per unit for useful electrical energy, kilowatt-hour (kWh). Furthermore, the COE is a metric that can be used for comparing the Nu-R HES with other hybrid or stand-alone power systems. For the HES, the calculation of the COE is as follows:

$$COE_{HES} = \frac{P_{SMR}}{P_{HES}} COE_{SMR} + \frac{P_{PV}}{P_{HES}} COE_{PV} + \frac{P_{HPP}}{P_{HPP}} COE_{HPP} \tag{1}$$

where P_{SMR} , P_{PV} , P_{HPP} and P_{HES} are the electricity output of the SMR, PVsys, HPP, and HES, respectively. COE_{SMR} , COE_{PV} , COE_{HPP} , and COE_{HES} are the costs of the electricity of the SMR, PVsys, HPP, and HES.

In Table 2, the cost data for each power generator is given. It must be noted that although SMRs are still in the development stage, there are some more reliable data for SMRs, while some data can be obtained from larger NPPs (Emblemsvåg, 2025). The uncertainty of the cost data is addressed by modeling the uncertainty as uncertainty distributions in the cost model. The results of the simulation are given in Figure 4.

Table 2. Cost data for power generators.

Technology	Unit Costs (USD/kw)	Variation	Source
SMR			
CAPEX	6622	±766	(NREL, 2021)
O&M	145		
Fuel (USD/MWh)	7,6	7,1-7,6	
PV system			
CAPEX	1110	±10%	(Fu et al. 2018)
O&M	30	20-40	
HPP			
CAPEX	2035	1504-2876	(IRENA, 2024)
O&M	40.7		

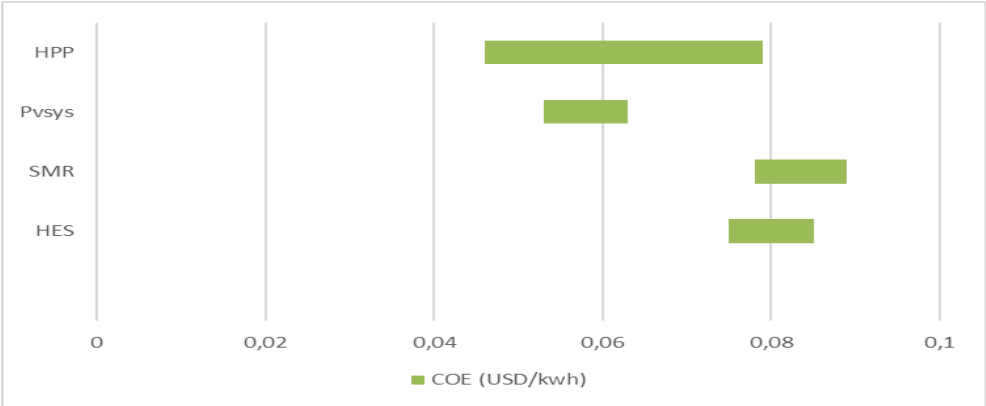


Fig. 4. COE comparison

DISCUSSION

From the simulation results in Table 1, the HES can provide technical performance and satisfy the Load. There are 17 – 39 hrs./year of power outage or disruption in the supply of electricity, when the HES can't satisfy the Load. This is mainly caused by the HPP downtime periods due to maintenance or low water levels in the reservoir. However, the basis of the reliability research approach for energy systems is usually a quantitative assessment of the level of reliability. Son et al. (2021) define the electricity demand fulfilment ratio as the ratio of the time that the system can meet electricity demand over the total time. The closer the index value is to 100%, the more the HES can fully meet the electricity demand in the target region, thus fulfilling the reliability criteria. For the HES in this study, the value is calculated at 99.5% when considering the highest value of power outage, which is 39 hrs./year. Furthermore, the amount of energy the HES needs to import to satisfy the Load is very small compared to the excess energy the HES produces. This excess energy is expressed as exports, since the HES can make additional profits by selling it or using it for products, like district heating, desalination, or hydrogen production.

As for economic performance, the COE_{HES} is lower than the COE of a standalone SMR, and in some cases, it can compete with the COE of HPP, see Figure 4. The COE_{HES} of 0,075 – 0,085 USD/kWh is lower than the average Albanian household electricity prices of 0.11 USD/kWh and the electricity price for businesses of up to 0.17 USD/kWh, even when considering adding the cost of transmitting energy of 0.010 USD/kWh (ERE,2025).

From the simulation results, the proposed Nu-R HES can provide both technical and economic performance. The results of the present work can be directly utilized to support the Seaport Region of Durres' transition to clean energy sources and support Albania's energy production diversification.

CONCLUSION

This study proposes an innovative, replicable Nu-R HES for the Seaport Region of Durres, Albania. This approach provides a comprehensive way to assess the technical and economic performance of the Nu-R HES. The assessment was carried out using Monte Carlo mathematical simulation with 10,000 iterations on Oracle's Crystal Ball software. The key findings of this study are summarized as follows:

1. The Nu-R HES can satisfy the load with a high electricity demand fulfilment ratio of 99.5%. The system is therefore reliable.
2. The COE of the Nu-R HES is lower than the COE of a standalone SMR, and lower than Albania's household and business electricity prices.

The Nu-R HES is replicable in regions that share the same geographical conditions as the case study and where energy demand is critical, or where supply must be consistent. Decision-makers can utilize this analysis and its results to decide on systems that can provide a reliable power supply with zero carbon emissions during the operation phase. Nuclear power is a suitable baseload power candidate that can withstand fluctuations in RES availability. However, a Nu-R HES faces several challenges, including grid integration, an appropriate regulatory framework, and an efficient management system.

Meanwhile, public acceptance and site location still present challenges for the integration of nuclear power in the energy mix.

As per limitations, while our research provides valuable insights into the techno-economic assessment of the Nu-R HES, it solely focuses on a one-year analysis and does not encompass the entire Nu-R HES lifespan assessment. Future research could focus on refining system modeling and enhancing uncertainty modeling by incorporating additional uncertain parameters, such as load variations, PVsys degradation, discount and inflation rate, and system lifespan, to further improve the robustness of Nu-R HES performance assessment.

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DOCTOR'S PERSONAL BRAND VS. CLINIC'S BRAND: MANAGING DUAL BRANDING IN EUROPEAN HEALTHCARE

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Abstract

The growing influence of digital media and greater patient autonomy have led physicians to cultivate personal brands that exist alongside the established identities of clinics and hospitals. This dual-brand context creates strategic complexity in defining how individual and institutional brands co-exist within a coherent brand architecture. The proposed framework conceptualises their interaction along a spectrum ranging from alignment to divergence. When alignment prevails – through consistent values, communication style, and professional ethos – both parties benefit from stronger credibility, trust, and shared brand equity. In contrast, conflicting messages or incongruent identities can weaken reputation and diminish patient loyalty. Effective management requires governance structures that promote coherence, such as unified communication guidelines, integrated marketing strategies, and clear role delineation. Conceptually, this approach reinterprets brand architecture to include individual professionals as active brand entities within organisational ecosystems. Practically, it highlights the importance of coordinated branding strategies that harmonise personal and institutional identities, ensuring that physicians' individual visibility contributes to the broader reputation and trustworthiness of the healthcare organisation.

Keywords: Personal Branding, Brand Architecture, Co-Branding, Healthcare Marketing

JEL classification: M3, I1, L84

INTRODUCTION

Healthcare has traditionally placed greater emphasis on institutional reputation than on the visibility of individual practitioners, largely due to professional norms, ethical standards, and regulatory constraints. In recent years, however, personal branding – the strategic process through which individuals promote themselves and their careers as distinct brands – has become increasingly significant among physicians (Macalik, 2025). Patients now make more informed choices, relying on online reviews, digital platforms, and social media to evaluate healthcare providers. Within this environment, many physicians cultivate public identities through personal websites, media participation, and professional storytelling to attract patients and enhance career opportunities. Recent research demonstrates that physicians increasingly employ deliberate personal branding strategies on online healthcare platforms to convey expertise, empathy, and reliability, directly influencing patients' trust and choice behaviour (Zhang et al., 2021). Moreover, contemporary healthcare increasingly relies on strategic marketing, where the prominence and credibility of individual practitioners improve the institution's overall reputation and market competitiveness (Macalik, 2025). Clinicians' efforts to enhance their personal visibility, therefore, require careful alignment with the broader institutional reputation to maintain consistency and trust.

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This paper examines the dynamic interaction between the physician's personal brand and the clinic or hospital brand. It draws on brand architecture theory (Aaker and Joachimsthaler, 2000), which differentiates between the 'branded house' model – where a single master brand unifies all entities – and the 'house of brands' model, where sub-brands retain distinct identities, to analyse dual-branding phenomena within medical contexts. The discussion also incorporates insights from personal branding literature to elucidate the motivations and mechanisms through which physicians construct professional identities. Integrating these perspectives, the study develops a conceptual framework and a series of theoretical propositions outlining conditions under which personal and institutional brands align or diverge. The discussion concludes with implications for both theory – extending understanding of organisational brand portfolios – and practice, emphasising how healthcare managers can design integrated branding and policy strategies that strengthen institutional credibility while supporting physicians' individual reputations.

BRAND ARCHITECTURE IN HEALTHCARE: BRANDED HOUSE VS. HOUSE OF BRANDS

Brand architecture defines how a parent organisation structures and relates to its sub-brands. According to Aaker and Joachimsthaler (2000), brand architecture can take the form of a 'branded house', characterised by a single unifying identity, or a 'house of brands', where distinct brand entities coexist within a broader corporate structure. In a 'branded house' configuration, consistency of image fosters trust and recognition, whereas a 'house of brands' strategy allows for greater differentiation but may lead to a less cohesive overall identity.

In healthcare, hospitals and clinics typically serve as the corporate brand, with individual physicians as sub-brands. Public institutions often adopt a 'branded house' posture in which the hospital name functions as the primary quality signal and physicians' reputations align with that identity. Private or specialised clinics may lean toward a 'house of brands' orientation, spotlighting leading physicians or practice areas as discrete brands while the clinic acts as endorser. In practice, hybrids prevail, blending institutional primacy with promotion of "marquee" doctors, pure forms are uncommon (Aaker and Joachimsthaler, 2000).

This perspective reveals a continuum from full integration – where a physician's identity is subsumed within the institutional brand – to greater autonomy, with the clinic as quality guarantor. In the former, physicians mirror institutional values and communication standards; in the latter, they develop distinctive logos, websites, and styles. The two brand types co-evolve, as in corporate portfolios. Strategic fit and complementarity are pivotal – collaboration between a reputable physician and a prestigious institution reinforces trust and perceived quality, whereas incongruence between a doctor's image and a clinic's positioning introduces brand dissonance and reputational risk. Brand architecture, thus, clarifies how personal and institutional identities should be structured so that an individual brand contributes to – and coheres within – the clinic's overarching system.

PERSONAL BRANDING AND PROFESSIONAL IDENTITY OF PHYSICIANS

Personal branding is the strategic construction and communication of a distinct professional identity. It is defined as a deliberate effort to differentiate and present a coherent message about value and expertise (Branzetti et al., 2024). For physicians, this encompasses reputation for clinical excellence, a recognisable communication style that translates complex knowledge for lay audiences, visible professional values such as empathy and innovation, and a credible online presence spanning social media, patient testimonials, and scholarly outputs.

A clear, consistent personal brand yields measurable advantages. Physicians who actively shape public image tend to generate greater patient trust, loyalty, and engagement. Strong online reputations and well-maintained profiles attract patients and can increase consultation demand and fees. Macalik (2025) underscores personal branding as indispensable for differentiation in competitive markets where private practice and reputation drive acquisition. A professional digital presence reinforces credibility, stimulates word-of-mouth, and strengthens the doctor–patient relationship, supporting perceived quality of care and long-term recognition.

Motivations include acquiring and retaining patients, increasing referrals, and expanding opportunities for collaboration, conferences, and research. In a service context where experience and trust are central, an approachable yet authoritative persona is advantageous. Marketing and service literature highlights healthcare as fertile ground for branding principles (Berry and Bendapudi, 2007), given the weight of interpersonal connection and integrity. Nevertheless, personal branding requires ethical restraint. Visibility must align with core medical values – patients expect competence, reliability, and compassion rather than ostentation. Overemphasis on self-promotion can undermine credibility or disrupt team dynamics. Branzetti et al. (2024) caution that personal branding should reflect authentic identity development rather than self-aggrandisement. Effective execution therefore demands discipline, authenticity, and adherence to the ethical foundations that sustain public trust.

DOCTOR–CLINIC BRAND ALIGNMENT AND TENSIONS

Synergies of Aligned Branding

When a physician’s personal brand aligns with the clinic’s identity, both benefit through mutual reinforcement. Alignment across values, messaging, and quality standards strengthens patient trust by creating a coherent narrative of reliability and professionalism. A respected physician can attract patients who, after positive encounters, extend trust to the institutional brand. Empirical evidence confirms that hospital reputation mediates the relationship between doctor reputation and patient loyalty, underscoring the interdependence of individual and institutional credibility in healthcare branding (Akbolat et al., 2023). Alignment also enables efficient resource sharing and message amplification – educational content developed by physicians can be disseminated via institutional channels, enhancing reach and visibility. Hospitals increasingly support participation in public health initiatives and professional discourse, reflecting a ‘branded house’ orientation in which distinct physician identities are visibly endorsed by the clinic. Over time, coordinated training in

communication and branding fosters strategic coherence, physicians simultaneously introduce contemporary engagement practices that improve patient-centric communication. Marketing theory underscores that employee personal branding can serve as a competitive advantage when harmonised with corporate objectives (Kotler and Keller, 2016). Effective alignment thus projects a unified, credible image that magnifies professional legitimacy and public trust.

Tensions from Brand Divergence

Divergence between a physician's personal brand and the clinic's institutional positioning generates risk. Discrepancies in image, tone, or values produce contradictory cues and erode credibility. In healthcare, such dissonance is especially damaging, as patients may lose confidence in both the physician's communications and the institution's reputation. Reputational spillover compounds the hazard – controversy affecting either party can impair the other, since each implicitly endorses the other's brand (Gombeski et al., 2014).

Internal frictions also emerge when brand boundaries blur. Restrictive policies can frustrate physicians, disproportionate visibility may provoke resentment, uncoordinated personal branding fragments the clinic's image and risks patient allegiance shifting solely to individual practitioners. Dependence on “star” doctors is precarious, as departures can weaken continuity and market position. Digital platforms amplify these vulnerabilities – influencer-style content may misalign with institutional tone, and ethical lapses online can necessitate remedial action. Consequently, many organisations enforce social media and advertising guidelines to contain legal and reputational exposure.

Unmanaged divergence produces inconsistency, internal friction, and vulnerability. The managerial task is to preserve equilibrium – harnessing authentic personal branding while safeguarding the integrity, stability, and cohesion of the institutional brand architecture.

CONCEPTUAL MODEL AND PROPOSITIONS

Building upon these dynamics, a conceptual framework of doctor–clinic co-branding is proposed (Figure 1). Within this model, the physician's personal brand and the institutional brand are conceptualised as interdependent entities, each encompassing distinct yet interacting attributes such as values, messaging, and reputation. These components are influenced by external determinants including market competition, regulatory constraints, and societal expectations. The critical variable is the *degree of alignment* between the two brand identities – ranging along a continuum from strong congruence to pronounced divergence. High alignment typically yields favourable outcomes such as enhanced patient trust, satisfaction, and collective brand equity, whereas significant divergence can result in perceptual confusion, diluted loyalty, and weakened credibility. Feedback mechanisms are also embedded within this framework – successful alignment reinforces both institutional reputation and physicians' personal branding efforts, creating a virtuous cycle; conversely, sustained misalignment may necessitate corrective action, including revised communication strategies or policy interventions.

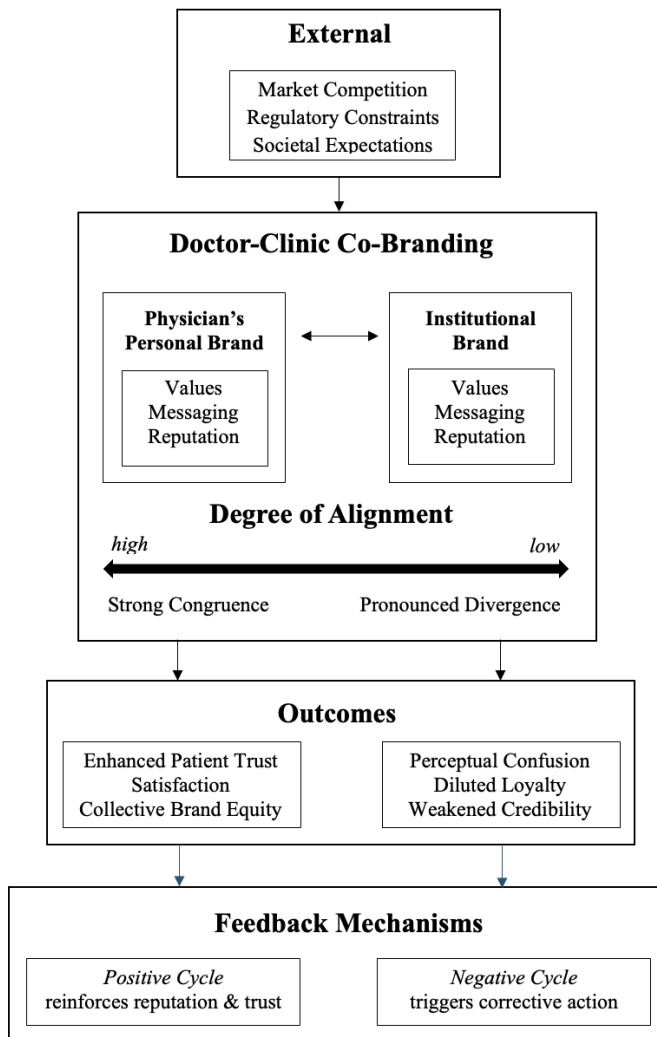


Fig. 1. Conceptual Framework of Doctor–Clinic Co-Branding

From this conceptual foundation, several propositions are formulated to guide further research and managerial application:

Proposition 1. Aligned brands amplify equity and trust. When a physician’s personal brand aligns closely with the clinic’s brand in terms of values, quality standards, and communication style, both entities benefit from a coherent identity. A unified brand presentation enhances credibility and reinforces patient perceptions of care quality, leading to stronger brand equity for both the doctor and the institution.

Proposition 2. Divergent brands dilute trust. In contrast, when discrepancies exist between the narratives, imagery, or values of the doctor and the clinic, stakeholder confidence weakens. Conflicting messages create uncertainty regarding the source of quality, resulting in reduced satisfaction, diminished loyalty, and potential erosion of trust.

Proposition 3. Strong doctors can elevate weaker clinics. A well-established physician's personal brand can substantially enhance the visibility and reputation of a smaller or lesser-known clinic. In such cases, the physician acts as a co-branding catalyst, transferring credibility to the institution. However, for well-established hospitals with strong brand equity, the marginal benefit of an individual doctor's prominence is comparatively limited.

Proposition 4. Integrated management mitigates conflicts. Healthcare organisations that adopt integrated communication frameworks and well-defined branding guidelines are more capable of harmonising doctor–clinic relationships. Providing structured initiatives such as social media training, brand storytelling programs, and joint communication policies encourages physicians to embody and reinforce institutional values. Medina Aguerrebere et al. (2024) note that leading hospitals increasingly employ coordinated digital and AI-based branding strategies to align employee representation with the collective identity of the organisation.

Proposition 5. Contextual factors moderate branding dynamics. Regulatory, cultural, and ethical contexts significantly shape the interaction between personal and institutional brands. In regions with strict advertising regulations, such as many European countries, personal branding tends to be more restrained and guided by shared professional ethics rather than overt marketing. In these settings, physicians typically emphasise credibility, education, and transparency – values that inherently align with institutional goals. In less regulated or more commercially driven markets, by contrast, greater divergence between personal and institutional brands may emerge. Comparative research examining these contextual variations could further illuminate how institutional constraints and cultural norms influence co-branding practices.

IMPLICATIONS FOR THEORY AND PRACTICE

Theoretical Implications

This conceptual analysis bridges two domains of branding research that have often developed in parallel. While traditional brand management focuses on organisations and products, its logic can extend to individuals within service-based environments. The framework positions professionals, particularly physicians, as integral elements of an organisation's brand portfolio, reframing brand architecture to include individuals as sub-brands within a broader institutional identity. This perspective advances branding scholarship by examining the conditions under which personal brands enhance or weaken corporate reputation. It suggests that brand architecture theory should evolve to incorporate “human brands” as active and measurable components of organisational ecosystems.

Personal branding theory, largely situated within career and organisational psychology, also gains new depth when viewed through an institutional lens. In organisational settings, personal brands are relational rather than independent, they interact dynamically with the employer's values, culture, and communication practices. Branzetti et al. (2024) argue that physicians should view themselves as distinct brands whose success relies on coherence between internal identity and external perception. This framework extends that view by emphasising reciprocity – institutional identity shapes the professional brand just as the latter influences corporate image.

These insights call for a more integrated theoretical approach linking personal and corporate branding. The framework highlights the need for typologies of doctor–clinic relationships – from fully unified to loosely endorsed associations – and for empirical evaluation of their effects on trust, service quality, and reputation. This integration positions human brands as strategic assets within organisational brand architecture and deepens understanding of how identity and trust co-evolve in professional service contexts.

PRACTICAL IMPLICATIONS FOR HEALTHCARE MANAGEMENT

For healthcare administrators and marketers, proactive management of doctor–clinic brand relationships is essential. Physicians’ public personas should be viewed as strategic assets, not peripheral risks. Clinics can strengthen coherence through co-branded initiatives, such as joint content creation, outreach, and media engagement, while ensuring alignment with institutional values. Recruitment should emphasise brand fit, prioritising professionals whose expertise and communication style reflect the clinic’s identity. Training and onboarding should clarify branding expectations and foster collaboration.

Targeted resource allocation can amplify impact by promoting physicians whose visibility attracts patients, while misaligned personal branding requires corrective dialogue. Communication integration is critical – social media and public messaging must align with approved institutional guidelines. Crisis management frameworks should anticipate reputational risks and outline coordinated responses to safeguard both physician and clinic credibility.

Professional bodies and regulators must adapt to evolving branding realities. Beyond restricting misleading promotion, they can provide guidance on transparent use of testimonials and data presentation. Training in personal branding, often absent from medical education, should be encouraged to strengthen communication skills (Kalia et al., 2017). With ethical oversight, personal branding can enhance patient trust, support professional development, and reinforce institutional reputation.

CONCLUSION

Healthcare is evolving into a dual-brand landscape in which individual clinicians and institutions jointly shape patient perceptions. The conceptual analysis indicates that whether doctor and clinic brands operate in harmony or at cross-purposes carries material consequences for trust, loyalty, and competitive positioning. A ‘branded house’ approach (strong alignment) privileges a unified identity, whereas a ‘house of brands’ approach (strong doctor brands) enables physician distinctiveness. Most healthcare settings occupy positions between these poles, balancing collective reputation with individual differentiation. Personal branding, once uncommon in medicine, has become widespread under the influence of digital media and patient empowerment. This shift creates avenues for differentiation as patients connect with recognisable professional identities, however, the benefits are realised only when coherence is maintained. When physicians’ values and communication complement the clinic’s positioning, reputational effects are mutually reinforcing. By contrast, conflictual images or messages generate confusion and weaken the core brand.

A theoretical model of doctor–clinic co-branding is advanced, together with propositions that alignment supports collective brand equity while divergence erodes trust, subject to contextual and strategic moderators. These claims invite empirical examination through case studies, surveys, and experimental designs, including estimates of the incremental contribution of prominent physicians to institutional outcomes. The framework also informs practice – personal brands should be integrated purposefully into institutional strategy rather than left unmanaged. Providing structured channels and governance, such as social media guidelines, joint storytelling, and career development aligned with institutional goals, allows clinics to harness personal branding as an asset. Ultimately, the interplay between individual and institutional brands has become a defining feature of contemporary healthcare marketing. The guidance offered here is intended to support a deliberate choreography in which both physician and clinic strengthen each other to the benefit of patients, professionals, and the wider health system.

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THE RHETORIC OF ECONOMIC REFORMS IN POST-COMMUNIST ALBANIA: A CRITICAL DISCOURSE ANALYSIS

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Abstract

The transition from central planning to a market-oriented economy in post-communist Albania was accompanied by profound shifts not only in policy, but also in the language through which reforms were communicated to the public. This paper investigates the rhetoric of economic reforms in post-communist Albania, examining how political leaders, policymakers, and media outlets framed processes such as privatization, liberalization, and European integration. Drawing on discourse analysis (Fairclough; van Dijk), the study identifies key linguistic and rhetorical strategies including appeals to modernization, urgency, and national progress that were employed to legitimize controversial reforms and to construct public consensus around Albania's reorientation toward international markets. The findings reveal the ideological underpinnings of reform discourse, where economic measures were often justified through metaphors of "catching up with Europe," "overcoming the past," and "building prosperity." By analyzing representative speeches and media texts from the transition period, this research sheds light on the intersection of language, ideology, and economic transformation in Albania. The study also contributes to a broader understanding of how transitional economies discursively negotiate legitimacy in the global economic arena

Keywords: Economic reforms, Post-communist Albania, Discourse analysis, Rhetoric, European integration

JEL: A12, P26, O52

INTRODUCTION

Following the fall of the communist regime in the 1990s, Albania experienced a profound social, political and economic transformation. During the three decades of transition, the political rhetoric in the country has been filled with promises of reforms that would modernize the state and bring it closer to European standards. In Albanian public discourse, especially in political speeches and the media, "reforms" have often been portrayed as the key solution to structural problems inherited from the communist past and from post-transition mismanagement. This article focuses on the rhetoric of economic reforms in post-communist Albania, with a particular focus on the way in which major reforms, particularly those in justice and economy have been represented and legitimized in political speeches and media articles over the past decade. The aim of this study is to analyze the public discourse on reforms, using the framework of critical discourse analysis (CDA), according to the approaches of Norman Fairclough and Teun van Dijk. Our analysis aims to understand how political actors and the media use language to construct narratives about reforms: how they present these reforms as necessary, how they justify their need, and what discursive strategies are used to legitimize or question them. By exploring a corpus of political

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speeches and media articles (post-2010) that address reforms in justice and economy the article will show that the rhetoric of reforms in Albania is often constructed as a narrative of confrontation between the “new” and the “old,” between progress and the status quo, where language plays a crucial role in shaping public opinion and legitimizing major political changes. In what follows, we will first present the theoretical framework of critical discourse analysis that guides this study, then we will elaborate on the context of major reforms in post-communist Albania. Next, we will explain our methodology and empirical sources (corpora of speeches and articles). In the following sections, the analysis will be structured narratively by first examining the political and media discourse around the Justice Reform, then the economic reforms (e.g. fiscal pension reform, fight against informality). The discussion will highlight the main discursive trends and rhetorical strategies used by political elites and the media, while the conclusions will synthesize the main findings. Finally, an annex presents a summary of the sources analyzed from the corpora of speeches and articles, for transparency and reference.

THEORITICAL FRAMEWORK: CRITICAL DISCOURSE ANALYSIS

Critical discourse analysis (CDA) is an interdisciplinary approach that studies the way in which language (in text and speech) reflects, shapes, and is sustained by social structure, power relations, and ideologies (Fairclough, 1992). CDA sees discourse not simply as a neutral description of reality, but as a social practice through which actors produce meanings, legitimize or challenge the existing social order, and exercise symbolic power. According to Norman Fairclough, any act of communication can be analyzed at three interrelated levels: the textual level (linguistic structure, words, metaphors used), the level of discursive practice (how the text is produced and consumed, institutional context, genre, intertextuality), and the level of social practice (the broader social and ideological structures that are reflected or challenged by discourse) (Fairclough, 1995). This framework allows us to see how politicians and the media, through their choice of words and narratives, reinforce or combat certain ideologies for example, the idea that “deep reforms” are necessary for the development and Europeanization of the country.

On the other hand, Teun van Dijk emphasizes the importance of cognitive and social structures in the analysis of political and media discourse. Van Dijk argues that elites use discourse to legitimize their power and policies by constructing ideological polarizations, e.g. by portraying themselves as positive reformers (“us” who bring progress) and opponents as negative obstacles or defenders of the status quo (“them” who resist change) (van Dijk, 1993). A key element in van Dijk’s analysis is the concept of “ideological framing”, where events and policies are presented in such a way as to favor the perspective of the speaker/group. Common discursive strategies include:

- Emphasis/Minimization, emphasizing the positive aspects of oneself and the negative aspects of the opponent, while minimizing the negative aspects of oneself and the positive aspects of the other (van Dijk, 2006). This “ideological square” is often present in party speeches and politically charged media reports.

- Legitimization through authority and consensus, referring to experts, international institutions (e.g. EU, IMF) or the “voice of the people” to support a reform. In this way, it is presented as if there is “no alternative” other than reform, because the European Union demands it or because “citizens want” it.

- Moralization and dramatization, using emotional language, strong metaphors, and presenting the reform as a moral battle between good and evil (e.g. the fight against corruption as a “battle with an endemic evil”). This strategy aims to mobilize public moral support for the proposed changes.

Drawing on these theoretical approaches, our study analyzes how the rhetoric of reforms in Albania exhibits these features: How reforms are depicted as necessary, difficult but inevitable (“there is no reform without pain” is a common refrain); how a discursive divide is created between reformers and opponents of reform; and how legitimacy is constantly invoked from external factors (such as European integration) or from universal values (the fight against corruption, social justice) to support the reform process. This theoretical framework will guide our reading of concrete texts, as we attempt to uncover the ideological subtexts and social functions of the language used in them.

CONTEXT: KEY REFORMS IN POST-COMMUNIST ALBANIA

To understand the discourse around the reforms, a brief overview of the political and economic context in which they took place is necessary. After the fall of communism, Albania entered a long period of transition towards a market economy and pluralistic democracy. Despite major changes, corruption, weak institutions and economic informality remained persistent problems. After 2010, domestic and international pressure for deep reforms increased, especially in the justice, economy and energy sectors, with the aim of rapprochement with the European Union. The Justice Reform (2014,2016) was conceived as a response to the perception that the judicial system was corrupt and politicized. The 2016 constitutional amendments paved the way for the vetting process and the creation of new institutions such as the Supreme Court of Justice, the Supreme Court of Justice and the Supreme Court of Justice. The government and international partners presented the reform as a cornerstone of the fight against corruption and a condition for European integration. Although it was adopted by consensus, the political debate and public discourse around it remained polarizing. Economic and Fiscal Reforms after 2013 were motivated by the growth of public debt and informality. The government announced a structural reform program, including the agreement with the IMF, pension reform (2014) and action against informality (2015). These measures, often unpopular, were justified as “painful but necessary” to ensure fiscal stability and social justice. The Energy Sector Reform (2014,2015) aimed to reduce financial losses and strengthen payment discipline. The campaign to break illegal connections and collect debts was accompanied by rhetoric of “equality before the law” and “the end of the era of impunity”. Although criticized for its social effects, the reform was reinforced by the argument that it was necessary to “save” the energy sector and meet European standards.

Overall, after 2010, “reform” became a key word in political and media discourse in Albania, symbolizing progress, modernization, and rapprochement with Europe. The way in which parties describe or challenge these processes reveals the way in which the meaning of “reform” is socially constructed, an element that lies at the heart of the following analysis.

STUDY METHODOLOGY AND SOURCES

This research relies on two main text corpora: (1) a corpus of political speeches and official statements, and (2) a corpus of media articles from Albanian and international media on Albania, dealing with reform topics. The time period covered focuses mainly on the last decade (approximately 2010,2020), when debates on the Justice Reform, economic and energy reforms were particularly intense. The corpus of speeches includes over ten key public speeches and statements by Albanian political leaders. The majority of them are speeches by former Prime Minister and current Prime Minister Edi Rama (in office from 2013 onwards), as well as several statements by other senior government officials during the presentation or defense of reforms. This corpus includes, among others: parliamentary speeches during the discussion of the Justice Reform (2016), speeches by the Prime Minister at conferences on economic reform and the business climate (2015), speeches on the International Anti-Corruption Day (2013, 2014), public statements on the campaign against informality and on pension reform, etc. These texts are taken from official sources (transcripts published on official government websites or in the media) and are presented in the original Albanian (or in official English translation when appropriate). During the analysis, we have quoted the most significant parts of these speeches, while maintaining the accuracy of the speakers' language. The corpus of media articles includes about 15 selected articles from print and online journalism, which shed light on the way the media have framed and discussed the reforms. Analytical articles and news from local and international media covering Albania are included. Some examples are: reports from the investigative network BIRN (Balkan Insight) on the political deadlock during the adoption of the Justice Reform (e.g., Mejdini, 2016), articles from Albanian media on actions against electricity theft (2015), news on changes to the pension scheme and public reactions (2014), as well as economic analysis of the business climate and structural reforms in the country. In cases where the articles were in a foreign language (English), a translation or summary of their content in Albanian was used for the purpose of the analysis.

Analytical approach: The study was conducted with a qualitative methodology, applying the principles of critical discourse analysis. Initially, the texts were read in their entirety to identify the main themes and general tone (e.g. dominant narratives such as “the fight against corruption” or “European integration” as a pro-reform argument). Then, the segments of the text that directly address reforms were carefully examined, from descriptions of the problems requiring reform to promises about the results of reforms. Keywords (such as “endemic corruption”, “modernization”, “state capture”, “responsibility”, “European”), metaphors (e.g. reforms as “bitter medicine”, the old justice system as “pyramid that must be torn down”), and rhetorical strategies (justifying reform as “the only way”, blaming

predecessors for the situation, appealing to popular and international support) were identified. The analysis also compared the way in which framing occurs in politics with that in the media: e.g., does the media use the same language and narratives as the government, or does it challenge them by raising questions and giving voice to different concerns. The findings of the discursive analysis are presented in the following sections. Since the aim was to provide a narrative and integrated treatment, the results are not presented simply by corpus, but rather in an interwoven manner by the main reform themes (justice, economy). This allows us to see side by side how the same reform is described by politicians and how it is reported or commented on by journalists, providing a complete picture of the discursive “narrative” of reforms in today’s Albania.

RESULTS

“New Justice”: The Discourse of Justice Reform

The history of the Justice Reform in Albanian discourse has been presented as an epochal battle between a corrupt past and a just and European future. The language used by political leaders to describe this reform has been filled with dramatic and moral tones. Since the first years of his mandate, Prime Minister Edi Rama portrayed the existing justice system as a “pyramid” of injustice that needed to be demolished and rebuilt from scratch. In a parliamentary speech during the debate on constitutional amendments, Rama addressed the opposition, saying that “The Justice Reform will collapse the current pyramid of the judicial system. All the links and mechanisms that you control today will fall, and completely new structures will be erected where your political influence will have no place.” This direct message indicated the strategy of legitimization through delegitimization of the status quo: the old system is presented as rotten and politically captured, therefore its destruction and the construction of a new system from scratch is presented as the only option to establish true justice. Another strong element in the government rhetoric was the polarization of “us” versus “them”. The government elite (us) presented itself as champions of reform, ready to “clean up the scum” of corruption in the judiciary, while the opposition (they) was labeled as an obstacle to reform, afraid of losing influence. In a public response, Rama accused his opponents: “You fear the Justice Reform like the devil fears incense”, using a powerful metaphor from religious folklore to imply that the opposition avoids reform at all costs because that reform violates its own interests. This language demonizes the opposing side, a classic example of what van Dijk (1993) calls the emphasis on the negative aspect of the “other” in order to delegitimize its position. On the other hand, the government sought to reinforce its positive image as a force of light against the darkness of corruption in the judiciary, a moral framework in which the reform appeared almost as a “rescue mission” for the country.

Albanian and international media played their part in telling this story. Throughout 2016, as the reform neared approval, mainstream media outlets covered the political drama in equally dramatic tones. A BIRN article described the situation with the metaphorical headline “The clock is ticking for the approval of EU reforms in Albania” (Mejdini, 2016), highlighting the urgency of the moment. In this reporting to the international public, the

emphasis was on the expiring deadline and the risk that failure to approve the reform would cost Albania the chance to open negotiations with the EU. The article cites key statements that illustrate the way the reform was represented in the public arena: The EU Ambassador to Tirana, Romana Vlahutin, warned that “if this momentum is lost, the country will lose not one, but several years [in the integration process]” (quoted in Mejdini, 2016). The then German Foreign Minister, Frank-Walter Steinmeier, also called on Albanian leaders to overcome the political impasse during a visit to Tirana, emphasizing that approving the reform at that moment was key to the country’s European path (Mejdini, 2016). These references from international voices in the media reinforced the legitimacy of the reform: the idea is that “Europe demands it” and that the country’s European future depends on its success. This is a typical example of authorization (van Dijk, 2006), where a policy is legitimized because it is supported by prestigious authorities or international norms. The media also reported on the clashes of discourse between political parties within the country. For example, the opposition’s sudden attempt to present an alternative draft of the reform shortly before the vote, which proposed the elimination of several new institutions foreseen in the package, with the argument that “the structure of the system should be simplified” (Mejdini, 2016). The ruling majority immediately called this move by the opposition “an attempt to undermine the reform” (Mejdini, 2016). Thus, the media narrative clearly reflects two competing frames: the opposition tries to present itself as reasonable and prudent, wanting to avoid “excessive” changes and maintain balances, while the government portrays it as an obstructionist force that is protecting the privileges of a corrupt caste in the judiciary. Polls cited in the media showed that public support for the reform was very high (over 90% of citizens supported it (according to a 2016 national poll, cited in Mejdini, 2016), which gave the government even more rhetorical ammunition to claim that “the people demand this reform”. An oft-repeated message in the pro-reform discourse, both by politicians and media headlines, was that the judicial reform is an indispensable condition for EU integration and a nationwide demand, therefore any resistance to it was seen as unjust and condemnable.

In general, the discourse around the Justice Reform was characterized by high drama-turgy and strong moralizing. The language used created images of a judicial system as the “internal enemy” that is hindering the progress of society, while the reform became a symbol of collective hope for justice and Europeanization. This way of narrating, with reform heroes, enemies of the reform, existential dangers and the promise of salvation, gave the public a clear framework in which to position themselves emotionally. In light of critical analysis, it can be said that such a discourse, although mobilizing for supporters, risks simplifying the complexity of the reform into a black-and-white narrative, where any doubt or technical debate could be labeled as betrayal of the cause. For the media, the challenge remained to maintain the balance between critical reporting and not falling prey to this polarized narrative; However, in the case of the Justice Reform, it is noticeable that the majority of public discourse, also driven by international pressure, strongly aligned itself with the idea that the reform was not only necessary, but also urgent and morally right.

Economic Reforms: The Discourse of “Necessary Sacrifice”

In the economic sphere, the political discourse after 2013 was built around the idea of inevitable sacrifices to save the national economy from collapse and put the country on the track of long-term development. The new government that came to power in 2013 inherited, in the words of the prime minister himself, a situation on the brink of fiscal catastrophe. In one of his first speeches after taking office, Rama warned that “our economy is in danger of losing all its equilibrium” if drastic measures were not taken. This type of crisis framing aimed to create a sense of urgency and justify the strong measures that would follow. At the same time, former (now opposition) governments were portrayed as having driven the economy “into a hole” with debt and mismanagement, a typical example of blaming predecessors as a legitimizing strategy for new policies (van Dijk, 1993).

The Pension Reform (2014) serves as a concrete illustration of the rhetoric of “bitter medicine” in economics. With this reform, the government gradually increased the retirement age and changed the formula for calculating it, measures that were unpopular as they implied longer work and potentially more modest benefits for some categories. To forestall discontent, public discourse focused on the message that the existing system would fail without this intervention. “There is no reform without pain,” declared Rama, acknowledging that the measures would be difficult but necessary. He described the pension reform as “a marathon, not a sprint”, a metaphor he used to criticize the short-term approaches of previous governments, which according to him “brought us to the situation of 2014” when the system was on the brink of crisis. With this literary figure, the public was communicated that patience and a long-term vision were needed: real reforms require time and perseverance, as opposed to “sprints” or quick populist solutions that only worsen the problem. To alleviate social concerns, the element of social justice was also emphasized in the discourse: it was recalled that the reform had introduced a “social pension” for those who had never contributed, in order to “ensure that no one was left without any support in old age”. This argument appealed to the feeling of solidarity, legitimizing the reform as morally right despite the personal costs.

In parallel with pensions, the government launched an aggressive campaign against informality in the economy (2015), which was also accompanied by a harsh justification discourse. In public meetings with citizens and pensioners, the Prime Minister openly denounced those businessmen who hid their income and evaded taxes, calling them “thieves of the pension fund”, a direct accusation that presents tax law violators as immoral exploiters of others. “You steal half of the pensions from regular pensioners,” he figuratively addressed businesses that did not declare real salaries, “just as half of Albanians paid the electricity bills of the half that did not pay. This cannot continue!” This strong language, widely amplified in the media, framed the action against informality as a moral struggle for justice: the state sided with honest citizens who had borne the burden of the system, against those “dishonest” who had unfairly benefited. Here we again notice the strategy of discursive polarization “us versus them”: the government and law-abiding citizens (“us”) against evaders and abusers (“them”). To reinforce this division, Rama did not hesitate to use an analogy with another similar campaign in the energy sector, warning illegal businesses: “We will go after you just as we went after those who stole electricity.” Here, the metaphor of “going after you” refers to the spectacular operation in which the government had sent

law enforcement forces door to door to cut off illegal electricity connections. The message was clear: the state would go after every offender with the same determination, until law and order were established.

The media discourse on economic reforms, for the most part, reflected these government narratives, but also expanded them by providing expert perspectives and the impact on ordinary citizens. Business media and specialized journalists often used a technical vocabulary to explain why reforms were needed: for example, they argued that the pension scheme was unsustainable due to the low worker/pensioner ratio, or that high informality was distorting free competition in the market. These analyses, although technical, essentially reinforced the narrative of necessity promoted by the government. At the same time, the media brought to the attention of the voices of affected citizens: there was reporting on the dissatisfaction of small businesses that complained that the anti-informality action was burdening them with excessive fines and pushing them towards closure. The opposition, as reflected in its public statements, called the campaign “economic terror against business” and he accused the government of seeking to fill state coffers at the expense of entrepreneurship. These media counter-narratives challenged the government’s triumphalist framework, raising the question of whether the reforms were being designed and implemented fairly or creating new injustices.

However, it is worth noting that, overall, the public discourse on economic reforms in Albania reflected a broad consensus on their need. What differed was the tone and focus: the government approached the communication of the reforms with a combination of technocratic arguments (figures, economic analysis) and emotional/moral appeal, while critical segments in the media or politics tended to highlight the social cost and demand a more cautious pace. The rhetoric of economic reforms relied heavily on ideas of modernization and “Europeanization” of the country: the reforms were presented as Albania’s ticket to becoming a competitive European economy, with sound financial institutions and the rule of law in the market. Critically, this constitutes an example of what Fairclough (1995) would call “transition discourse”: language that normalizes present sacrifice by linking it to a utopian vision of the future. In the case of post-communist Albania, this vision is often embodied in phrases like “modern European state” – a symbolic horizon that gives ideological weight to any laborious reform as a necessary step towards that goal.

DISCUSSION: THE IMPORTANCE OF DISCOURSE IN LEGITIMIZING REFORMS

The above analysis clearly shows that despite the thematic differences between justice and economic reform, there are obvious commonalities in the way these processes are discursively represented and legitimized in the Albanian public sphere. First, all three cases demonstrate the use of the crisis strategy as a starting point: in order to gain support for substantial reforms (which often entail short-term costs for segments of society), the public is presented with a bleak picture of the existing situation, be it a justice system rotten with corruption, an economy on the verge of collapse or an energy sector in chaos and bankruptcy. This framing of the crisis serves the function of what Boin et al. (2009) call

“meaning management” during crises: it makes the public perceive the current situation as intolerable, thus making the “bitter medicine” of reform more acceptable.

Second, in all the discourses analyzed, the presence of a Manichean narrative is observed, a division of the world into positive and negative forces. This is a practical illustration of van Dijk’s (2006) “ideological square”: political leaders emphasize the positive sides of themselves (courageous reformers, the rule of law, defenders of the public interest) and the negative sides of their opponents or those affected by the reform (corrupt caste, thieves, tax evaders, etc.). Slogans such as “fight against corruption”, “end impunity” or “equality before the law” create a moral framework where the positioning becomes clear: there is no neutral ground, you are either with the reform (and with the public good), or against it (protecting privileges or illegality). This kind of discursive polarization, while effective in mobilizing support, carries the risk of delegitimizing any critical voice as “bad” or corrupt a priori, reducing the space for rational debates on the details and consequences of reforms.

Third, legitimation through authority and orientation towards Europe are common threads running through all three cases. The discourse of reforms in Albania is replete with references to the European Union, the United States, international institutions such as the IMF or the World Bank, and “standards” that must be achieved. On a superficial level, these references serve to appeal to authority: justice reform is necessary because the European Commission demands it; fiscal discipline is necessary because the IMF imposes it; action on energy is applauded by international partners. However, on a deeper ideological level, this shows that the hegemonic discourse of the Albanian transition links political legitimacy to the idea of Euro-Atlantic integration. “Reform” has become almost synonymous with “Europeanization”, a notion normatively loaded with positivity. As a result, opposition to reform can easily be labeled as opposition to progress and to European integration itself. This phenomenon coincides with what Fairclough (1995) observes about transitional discourse: it creates a “common sense” that structural reforms are the only means to become a modern “normal society”. In Albania, this mindset seems to have already become entrenched: the term “reform” in the political and media vocabulary carries essentially positive connotations, leading everyone to verbally affirm support for reforms, even when their concrete forms are debated.

Fourth, the role of the media in this discursive landscape has been twofold. On the one hand, the media, especially the mainstream and international ones, have functioned as amplifiers of the reform message. They have often reproduced the frames offered by political elites: crisis, emergency, moral necessity and international support. BIRN reports on Justice Reform, television news about the arrests of energy thieves, or economic analyses quoting IMF experts, essentially repeated the narrative that these reforms were necessary and that there was no alternative. On the other hand, the media have also provided space, however limited, for alternative discourse. By bringing in critical voices (political opposition, NGOs, affected citizens, skeptical analysts), the media have also enabled narratives of the costs of reform to be articulated: e.g., the emphasis that cleaning up the judiciary could bring about a vacuum and institutional deadlock, or that the anti-informality campaign could push the informal economy even deeper into illegality, etc. However, these critical

voices often remained peripheral to the general public discourse, which, as noted, was dominated by the official rhetoric of reform as a historical mission.

In broad terms, it can be said that in post-communist Albania of the 2010s+, language has itself been a battleground for reform. What happens at the level of laws and institutions is preceded and accompanied by the symbolic battle to shape the meaning of these changes for the public. As critical discourse analysis suggests, this battle for meaning is as important as the material actions themselves: the way we talk about “reform” influences how citizens accept or reject it, which actors are considered heroes or culprits, and what is understood as success or failure. The discourse of reforms in Albania has contributed to the creation of a “collective narrative” about the country’s transition, a narrative where obstacles are justified by the legacy of the past, difficult measures are explained as sacrifices for a better tomorrow, and the very idea of progress is inextricably linked to the continuation of reforms.

CONCLUSION

This article examines the rhetoric of economic reforms in post-communist Albania, focusing on political and media discourses around judicial reform and economic/fiscal reforms. Using the framework of critical discourse analysis, we found that the language used to describe and legitimize these reforms is not at all random, but follows specific patterns and strategies that serve political goals and the shaping of public opinion.

First, our findings show that the term “reform” itself is loaded with a highly positive and transformative meaning in Albanian discourse. Reforms are portrayed as historical necessities, as bridges to a better future and European integration, and consequently there is little discussion of their alternatives; the debate focuses more on when and how reforms should be implemented, rather than whether they should be implemented. Second, the analysis revealed a strong tendency to frame each reform as a moral battle between the forces of change and those of the status quo. This trend, although mobilizing, also brings with it the extreme polarization of public discussion: official narratives tend to delegitimize opposition in advance, attributing them to dishonest motives or a lack of understanding of the “general good”. Third, it was clear that the legitimization of reforms in Albania has been closely linked to the argument of European integration and the visible support of international actors. This has given weight and urgency to the pro-reform discourse, but at the same time has raised questions about whether the internal social debate has sometimes been suppressed under the pressure of the European “indisputable good”. Finally, the role of the media turned out to be crucial: the media as communication channels enable the circulation of dominant frames, but also open windows (small but important) for alternative and critical discussions. Through the analysis of media texts, we observed that the Albanian public has been exposed not only to pro-reform state propaganda, but also to human stories and critiques that give full meaning to the consequences of reforms. In conclusion, it can be said that the language of politics and the media in Albania has played a key role in building consensus (or lack of consensus) around major reforms. This rhetoric has helped reforms, despite the short-term pain they have caused, to be accepted by a large part of society as

necessary and inevitable. On the other hand, the same rhetoric has risked reducing the space for critical dialogue and improvement of the reform processes themselves, often presenting reforms as mobilizing myths rather than as complex policies that need to be carefully considered. For scholars of political communication, the case of Albania offers a meaningful example of how words can pave the way for deeds: the way we talk about change lays the groundwork on which that change is realized. Going forward, further studies could expand this analysis by examining counter-reform discourses or narratives of ordinary citizens, to gain a more complete picture of the social dialogue surrounding major transformations.

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ENTREPRENEURSHIP DEVELOPMENT FUND (EDF) MODEL: LESSONS FROM BANGLADESH AND PROSPECTS FOR EUROPEAN UNIVERSITIES

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Abstract

This study analyzes the Entrepreneurship Development Fund (EDF) at Daffodil International University (DIU) as a novel revolving loan-based framework for student entrepreneurship and assesses its relevance to European universities. We employed a mixed-methods approach to gather data from three surveys: EDF managers and administrators, student founders who received or requested EDF support, and the general student population. Secondary desk research and a literature review provided comparative insights into the financing mechanisms of European higher education. The results show that EDF has helped DIU become more entrepreneurial by giving money and advice to student founders at the start. But there are still problems with making sure that all three of these things repayment, monitoring, and long-term viability work. Beneficiaries said that EDF is important for helping people start their own businesses, even though there isn't much help or chance to grow after they graduate. A larger survey of students shows that many of them are interested in revolving funds like EDF. Students would rather borrow money with low interest rates that are easy to understand than money that they don't have to pay back. European universities mostly get money from grants, contests, and incubators. Few individuals utilize revolving loan structures. The study shows that colleges and universities all over the world can use EDF as a model to stay in business. European universities could help their ecosystems grow by adding revolving loan programs to their grants. This would make sure that people are responsible, keep track of their money, and have a lasting effect.

Keywords: Entrepreneurship Development Fund, revolving loan, student entrepreneurship, higher education financing, Europe

JEL: I23, L26, G21, O16

INTRODUCTION

Entrepreneurship is becoming more and more important as a way to promote sustainable development and new ideas in higher education (Etzkowitz, 2013). These days, universities are changing from places where people learn to places where businesses can grow. Early-stage funding is still a major problem, though. Students can't get traditional bank loans, and one-time grants don't last long enough to be useful. Daffodil International University (DIU) started the Entrepreneurship Development Fund (EDF) to help with this problem. The EDF is a revolving loan fund that gives student entrepreneurs interest-free seed money. When a startup starts making money, it pays back the money, which is then given to new applicants. The EDF encourages both being responsible with money and

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learning about business. European universities have developed ecosystems for innovation, but they usually depend on grants, competitions, or venture capital. These systems favor high-tech spinouts but ignore small-scale student ventures. This study investigates the structure, results, and adaptability of EDF within European higher education systems.

Objectives:

- Examine the operational structure and management of EDF at DIU.
- Evaluate student entrepreneurs' experiences and perceptions of EDF.
- Analyze general students' awareness and demand for EDF-style funds.
- Explore adaptation possibilities in European universities.

LITERATURE REVIEW

University Entrepreneurship and Financing Models

Universities across the globe now regard entrepreneurship as a tertiary mission in addition to teaching and research (Rasmussen et al., 2014). Grants, competitions, and venture partnerships are all common ways to get money (Perkmann et al., 2013). These kinds of models work well for tech-based startups, but they aren't sustainable or easy for students who don't have technical or financial advantages.

Revolving Loan Funds in Higher Education

Revolving loan funds (RLFs) are based on the ideas of microfinance, which stress self-sustaining credit cycles and social responsibility (Yunus, 2007). When used in a university setting, RLFs help students become more financially responsible and less reliant on outside donors (Meyer, 1998). But adoption is still limited around the world because of rules and institutions that get in the way.

European University Ecosystem

European universities like KU Leuven, ETH Zurich, and Cambridge have strong incubation infrastructures that are funded by the government (European Commission, 2023). But most of the money is not repayable. According to research by Clarysse et al. (2011), European ecosystems are great at turning research into businesses, but they don't help grass-roots student-led businesses because they don't have revolving microfinance systems.

The EDF Context

The EDF model at DIU combines the ideas of microfinance with the idea of university incubation. Previous internal studies show that it serves two purposes: providing financial support and helping people learn how to start their own businesses. What makes it different from traditional microcredit or grant-based models is that it doesn't charge interest, focuses on students, and is based on mentorship.

METHODOLOGY

Research Design

A mixed-method approach was employed, incorporating quantitative surveys and qualitative responses. We used structured Google Forms to collect data from three groups: EDF managers, student founders, and regular students.

Sample Distribution

Respondent Group	Number of Participants	Data Type	Purpose
EDF Managers	1	Qualitative	Fund governance, operational insights
Student Founders	7	Quantitative + Qualitative	EDF experience and satisfaction
General Students	29	Quantitative	Awareness and attitude toward revolving funds

ANALYSIS TECHNIQUES

Descriptive statistics were used to look at the quantitative data, and thematic coding was used to look at the qualitative responses. The findings were sorted into four groups: operational structure, experience, demand, and adaptation feasibility.

FINDINGS

EDF Management Insights

The EDF has operated for eight years under the Department of Innovation & Entrepreneurship, Daffodil International University. It provides interest-free loans averaging 80,000 – 100,000 BDT per student and offers incubation support. Around 50+ startups have benefited.

Table 1. EDF Manager Summary

Aspect	Description
Duration	8 years
Fund Type	Revolving interest-free loan
Avg. Ticket Size	80k–100k BDT

Aspect	Description
Repayment Cycle	3–6 months
Beneficiaries	50+ startups
Key Supports	Mentorship, incubation, networking

STUDENT FOUNDERS’ EXPERIENCE

Student founders from Department of Innovation & Entrepreneurship highlighted the EDF’s simplicity and trustworthiness. Most used the funds for prototype development, marketing, and early scaling.

Table 2. EDF Beneficiary Outcomes (n=7)

Impact Area	% of Respondents
Prototype Development	86%
Scaling Operations	71%
Hiring Employees	43%
Revenue Generation	57%
Investor Attraction	29%

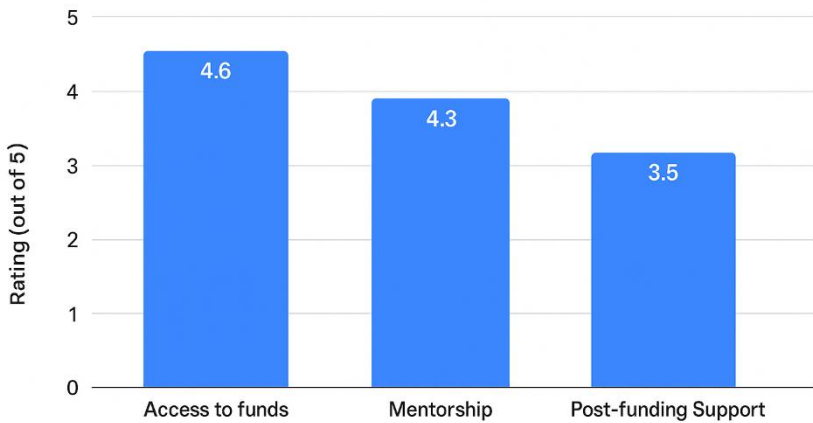


Fig. 1. (Bar Chart): Student Satisfaction with EDF

Students expressed high satisfaction with the fund’s accessibility and mentorship. The relatively lower score for Post-Funding Support (3.5) indicates a need for ongoing monitoring, market linkage, and alumni engagement programs. Overall mean satisfaction score across all categories: 4.13 / 5, suggesting that EDF is well-received and effective in early-stage startup facilitation.

General Student Attitudes

Among 29 students surveyed, 76% were aware of EDF, and 82% expressed strong interest in a similar revolving fund model. Preferred fund size ranged between €1,000–€3,000, indicating demand for small, manageable seed funding.

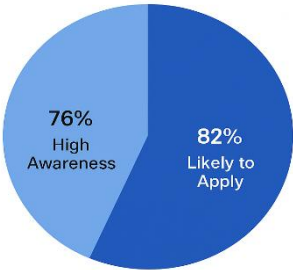


Fig. 2. (Pie Chart): Student Awareness and Willingness to Apply for EDF-Style Fund

The majority (three-fourths) of respondents were aware of EDF’s existence, reflecting effective on-campus communication. However, 24% (moderate + low awareness) represent a potential target for further outreach through workshops or promotional campaigns. The 82% willingness rate indicates strong latent demand for accessible revolving loan opportunities among students. Many students (≈60%) preferred small loans between €1,000–€3,000, suitable for prototype or pilot projects rather than large-scale operations.

Barriers: Lack of awareness (41%), limited funding (34%), short repayment time (25%).

Comparative Perspective: EDF vs. European Models

Dimension	EDF (DIU)	European Model
Funding Source	University budget	Public grants or VC partnerships
Interest Rate	0%	5–10% (if repayable)
Inclusivity	High	Moderate
Fund Sustainability	Revolving (self-sustaining)	One-time disbursement
Mentorship Integration	Structured	Partial

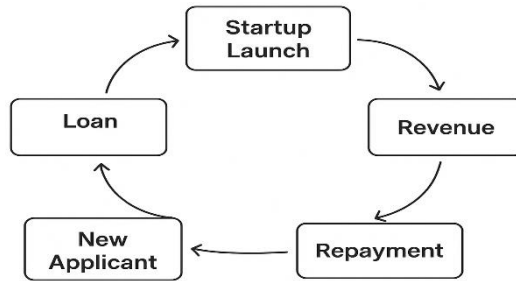


Fig. 3. (Conceptual Diagram) – EDF Revolving Mechanism

DISCUSSION

The EDF model effectively closes the financial gap for student entrepreneurs, creating a self-sustaining ecosystem where money keeps flowing. The structure based on repayment encourages responsibility and makes people less reliant on outside funding.

European universities are good at turning research into money, but they could do even better if they used these kinds of revolving models. EDF focuses on micro-level entrepreneurship and inclusivity, which are things that Western funding systems that favor high-tech ventures often miss.

Some of the problems are making sure that people pay back their loans, improving monitoring, and expanding the pool of capital. By using blended finance, which combines grants, alumni funds, and revolving micro-loans, European universities can become financially stable and give students more power.

IMPLEMENTING RECOMMENDATIONS

DIU's Entrepreneurship Development Fund (EDF) shows how a university-run revolving loan can sustainably finance student ventures while promoting accountability and innovation. European universities can replicate this through context-aware strategies integrating finance, mentorship, and education.

Institutional Framework: Establish Entrepreneurship Development Units (EDUs) or use existing innovation centers to manage loans, repayments, and reporting. Collaborate with incubators and form oversight committees for transparency and governance.

Financial Model: Adopt hybrid funding: university budgets, alumni and corporate support, and EU grants. Provide 0–2% loans (€1,000–€5,000) with a 6–12 month grace period. Reinvest repayments to sustain future funding cycles.

Academic Integration: Link funding with entrepreneurship courses or projects. Offer mentorship, financial literacy sessions, and ethical business training.

Digital Management: Use digital systems for applications, repayment tracking, and performance dashboards to ensure efficiency and trust.

Policy & Culture: Work with education authorities for legal and tax support. Promote repayment as a community contribution through peer accountability and recognition programs.

Evaluation: Track key metrics, repayment rates, startup survival, and job creation – and refine the model annually.

LIMITATIONS

This study offers valuable insights into DIU's Entrepreneurship Development Fund (EDF) and its replication potential, but faces several constraints.

- The sample of 37 respondents limits generalizability. Broader studies are needed for stronger external validity.
- Findings reflect Bangladesh's unique institutional and socio-economic context; adaptations are necessary for European settings.
- Reliance on survey responses may involve bias. Triangulating with fund records or third-party data would enhance reliability.
- European references are mostly secondary; future research should include direct institutional comparisons.
- The study emphasizes social outcomes but omits detailed financial modeling. Assessing fund performance and sustainability is recommended.

CONCLUSION

The study finds that the Entrepreneurship Development Fund (EDF) is a model for funding student entrepreneurship that can be used by other groups. Its interest-free revolving mechanism makes it possible for it to last while also encouraging responsibility. Students have said that EDF is good for early-stage development, mentoring, and hands-on learning.

European universities could change this model by adding flexible repayment terms, clear management, and rules that are specific to each country. A mix of EDF-style loans and grants can help institutions be more open and create a culture of entrepreneurship that lasts.

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CASH VS. DIGITAL: DETERMINANTS OF PAYMENT PREFERENCES IN THE EURO AREA

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Abstract

This study examines the determinants of consumer payment preferences in the euro area using data from the European Central Bank's *Study on the Payment Attitudes of Consumers in the Euro Area (SPACE 2024)*. Although digital payments are increasingly prevalent, cash remains a significant medium of exchange. Understanding the drivers behind consumer choices is essential for shaping monetary policy, financial inclusion, and retail payment strategies. Drawing on questionnaire responses, we analyze how socioeconomic factors, digital capabilities, and trust-related concerns influence preferences for cash versus digital methods. Using logistic regression with country fixed effects, we find that income, education, digital literacy, and privacy concerns are the strongest predictors of digital payment preference. Higher-income individuals are more than three times as likely as lower-income groups to prefer digital methods, while tertiary education increases digital preference by over 60%. Digital literacy raises the odds by about 25%, whereas privacy concerns lower them by around 40%. In contrast to prevailing assumptions, age exhibits no significant effect after controlling for other variables. Likewise, gender and technical issues do not demonstrate statistically significant associations with payment preferences. The findings underscore that economic inclusion, digital skills, and trust-building are more critical than demographics for digital adoption. These insights provide policymakers and payment providers with evidence to design inclusive, secure, and consumer-oriented payment systems across the euro area.

Keywords: payment preferences, cash, digital payments, digital literacy, privacy, euro area

1. INTRODUCTION

The euro area has experienced a profound transformation in consumer payment behavior over the past two decades. Digital technologies such as debit and credit cards, online transfers, contactless payments, and mobile wallets have become integral to everyday transactions (Petrikov and Koiov, 2024). The COVID-19 pandemic further accelerated this

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transition by promoting contactless payment habits and reinforcing concerns about the physical handling of cash (Baba et al., 2020). Despite this digital momentum, cash continues to play a crucial role in the euro area. It remains not only a universally accepted means of exchange but also a practical tool for budgeting, maintaining privacy, and fostering trust in financial interactions (Kaufmann et al., 2009). This coexistence of rapid digitalization and persistent cash usage illustrates a structural paradox that distinguishes the euro area from other advanced economies (Petrikov and Koiov, 2024).

Understanding why consumers continue to favor cash in an increasingly digital economy is central to the European Central Bank's policy agenda. The ECB must ensure that cash remains accessible and reliable while simultaneously advancing innovation in digital systems (Ferrari, 2022). A transition toward digital-only payment infrastructures risks marginalizing segments of the population with limited financial resources or inadequate digital competence (Alonso et al., 2020). Building inclusive and trusted payment systems therefore requires policymakers to balance efficiency and innovation with accessibility, security, and consumer confidence (Broekhoff et al., 2024).

Most prior studies attribute payment preferences primarily to demographic characteristics, particularly age, reinforcing the narrative of a generational digital divide (Khiaonarong and Humphrey, 2022). However, emerging research suggests that socioeconomic and behavioral factors, such as income, education, digital literacy, and privacy attitudes, may play a more decisive role than age alone (Bhattacharjee, 2024). Moreover, cross-country variation within the euro area remains insufficiently explored, despite particular contrasts such as Finland's advanced digital adoption and Austria's persistent reliance on cash (Kiff et al., 2020). These disparities reflect deeper institutional, cultural, and infrastructural differences that shape individual payment behavior.

This study addresses three interrelated questions. First, which factors drive consumer payment preferences beyond traditional demographics such as age and gender? Second, how do digital literacy and privacy concerns influence the likelihood of preferring digital over cash payments? Third, what policy implications emerge for developing inclusive and resilient payment ecosystems in the euro area? Using microdata from the European Central Bank's Study on the Payment Attitudes of Consumers in the Euro Area (SPACE 2024), the analysis applies logistic regression models with country fixed effects to examine how socioeconomic resources, digital capability, and trust jointly influence payment preferences across 18 countries.

The study contributes to the literature by challenging age-based digital divide narratives and reframing payment adoption as a function of economic inclusion, digital competence, and trust. By integrating behavioral and socioeconomic perspectives, it provides comparative evidence across euro area countries and delivers insights for policymakers aiming to design payment systems that are inclusive, secure, and citizen-oriented (Olit et al., 2019).

2. LITERATURE REVIEW

2.1. Theoretical Foundations of Digital Payment Adoption

The adoption of digital payment systems has been extensively examined through technology acceptance and behavioral frameworks that seek to explain why individuals choose to adopt or reject innovations. Among these, the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) remain the most widely applied in the financial technology domain. TAM posits that perceived usefulness and perceived ease of use are the primary determinants of an individual's intention to use new technologies. Within the context of payment systems, empirical studies confirm that consumers are more likely to adopt digital methods when these tools demonstrably enhance convenience, speed, or efficiency, although such effects vary across income and literacy levels (Ahmed et al., 2025). Extensions of TAM have incorporated additional dimensions such as perceived risk and trust, emphasizing that privacy and data security concerns critically shape attitudes toward digital payments (Sukmawati et al., 2022).

UTAUT expands the TAM framework by integrating constructs of social influence and facilitating conditions, offering a more comprehensive view of technology adoption. This model highlights that age, gender, and educational attainment may moderate the relationship between technological perceptions and behavioral intention (Upadhyay, 2024). Younger consumers and men, for instance, often display stronger intentions to use digital payment tools, partly due to higher digital proficiency and peer network effects. Despite its analytical strengths, UTAUT has been criticized for its rational-actor assumptions and limited attention to structural inequalities. It often underestimates emotional, habitual, and contextual influences that constrain technology adoption among individuals with lower socioeconomic status or limited digital capability. Recent contributions have proposed extending UTAUT to include trust and risk perception as core variables rather than secondary moderators, thereby improving its explanatory power across heterogeneous populations (Ahmed et al., 2025).

Behavioral economics complements these models by relaxing the rationality assumptions embedded in TAM and UTAUT. It recognizes that cognitive biases, habitual behavior, and perceived risks can override technological utility in shaping individual decisions. In the context of payments, factors such as privacy concerns, fear of fraud, and comfort with cash often drive consumer behavior irrespective of the objective efficiency of digital methods. Older adults and those with lower digital literacy display persistent preferences for cash due to anxiety over technological complexity and loss of control, while digitally proficient individuals navigate such barriers more easily (Koenig-Lewis, 2015). During the COVID-19 pandemic, these behavioral factors became particularly visible as some groups accelerated digital adoption due to health concerns, whereas others reinforced reliance on cash despite the availability of digital alternatives (Burak and Altinbasak-Farina, 2015).

A financial inclusion perspective situates digital payment adoption within broader economic and infrastructural contexts. Access to financial resources, education, and digital infrastructure not only determines an individual's ability to adopt technology but also conditions resilience to privacy and security risks. Empirical research demonstrates that populations with higher levels of digital literacy and connectivity exhibit stronger adoption of non-cash payments, often mediated by perceived ease of use and trust in institutions

(Anakpo et al., 2023). Targeted digital literacy programs have proven effective in reducing privacy-related anxieties and promoting participation in digital finance, particularly among low-income or digitally excluded groups (Amnas et al., 2024). Consequently, policy measures that enhance capability, ensure system reliability, and strengthen privacy safeguards can meaningfully reduce inequalities in digital payment participation (Balaskas et al., 2024).

Synthesizing these frameworks, the adoption of digital payments can be viewed as a multidimensional process shaped by technological perceptions, behavioral tendencies, and socioeconomic conditions. Integrating insights from TAM, UTAUT, behavioral economics, and financial inclusion yields a more comprehensive understanding of why adoption gaps persist despite widespread technological availability. The post-pandemic acceleration of digital payments has amplified the importance of trust, digital literacy, and inclusion. Empirical models that incorporate demographic variables such as age and gender alongside economic resources, digital competence, and privacy attitudes can more accurately explain the heterogeneity of payment behavior and guide the design of policies that promote equitable participation in the digital economy (Ahmed et al., 2025).

2.2. Previous Findings

Empirical studies across the European Union reveal that payment preferences are shaped by a complex interaction of demographic, socioeconomic, behavioral, and institutional factors. Early research emphasized demographic characteristics, particularly age and gender, as the dominant predictors of payment behavior. Younger cohorts, especially Millennials and Generation Z, demonstrate higher adoption of digital payments due to technological familiarity, convenience, and integration with mobile platforms, while older adults continue to prefer cash for reasons of habit, lower digital literacy, and perceived risk (Kotarba, 2017; Pintér et al., 2021; Agarwal et al., 2009). Age-related effects are often reinforced by cognitive and technological barriers that limit confidence in digital systems (Bancoro, 2023). Gender differences further intersect these patterns: men are generally more inclined toward digital tools, whereas women prioritize trust, privacy, and perceived transaction safety (Pintér et al., 2021; Bancoro, 2023). These demographic disparities reflect deeper inequalities in financial inclusion and access to digital resources (Demirgüç-Kunt & Klapper, 2012; Naceur et al., 2020).

Beyond demographics, socioeconomic resources particularly income and education emerge as decisive predictors of digital payment use. Higher income enhances access to formal financial services and digital infrastructure, while education fosters financial literacy and technological competence, both of which promote trust in digital environments (Seldal & Nyhus, 2022; Demirgüç-Kunt et al., 2015). Empirical studies in Poland and Norway confirm that financial knowledge significantly predicts non-cash payment adoption and mitigates financial vulnerability (Wecka et al., 2021). Conversely, individuals with lower income or limited education rely more on cash as a budgeting tool, constrained by liquidity needs and lack of access to secure digital systems (Mavutova et al., 2022; Vasile et al., 2021). The joint effect of income and education produces heterogeneous outcomes: highly educated, high-income individuals are the most likely to adopt digital methods, while low-income and less-educated groups remain marginalized (Dospinescu et al., 2019).

These results underscore the importance of financial inclusion policies that expand digital infrastructure and enhance financial capability across socioeconomic strata (Sebastián et al., 2023).

A growing body of research identifies digital literacy, privacy concerns, and technological reliability as critical behavioral determinants. Digital literacy acts as both an enabler and a moderator of digital adoption. Higher digital proficiency increases user confidence, reduces perceived risk, and strengthens financial inclusion, as evidenced by studies in Romania and other EU countries (Ionacu et al., 2023; Carlisle et al., 2020; Spilbergs, 2023). Nevertheless, disparities in digital skills persist across regions and demographic groups, perpetuating the digital divide. Privacy concerns remain a significant psychological barrier: loss of anonymity and fear of data misuse discourage many consumers from using digital payments (Rennie & Steele, 2021). When privacy safeguards and data governance frameworks are transparent and robust, trust rises and adoption increases, yet insufficient regulation continues to erode consumer confidence (Eckhoff & Wagner, 2017; Yan et al., 2019; Acquisti et al., 2013). Technological issues such as infrastructure gaps, cybersecurity weaknesses, and poor usability further deter adoption, particularly in regions where payment systems lack reliability (Tan & Disemadi, 2021; Baicu et al., 2020). The pandemic experience demonstrated that even during periods of rapid digitalization, uneven technological readiness limited the full replacement of cash (Hassan et al., 2020).

At the macro level, cross-country studies highlight that institutional quality, regulatory effectiveness, and cultural norms shape payment preferences. Economies characterized by higher financial inclusion, transparent governance, and public trust in financial institutions display stronger diffusion of digital payments (Kelmanson et al., 2019; Demirgüç-Kunt & Klapper, 2012). Cultural dimensions such as uncertainty avoidance and risk aversion sustain preference for cash in several euro area countries (Alesina & Giuliano, 2015; Migliore et al., 2022). These findings suggest that national context mediates the effects of individual-level factors: even equally literate and affluent consumers behave differently depending on institutional trust and payment infrastructure.

Despite substantial progress, significant gaps remain in the understanding of payment behavior across the euro area. Much of the literature continues to emphasize demographic correlates while underestimating the joint influence of economic inclusion, digital competence, and trust-related attitudes (Petrikov & Koiov, 2024; Bruno & Faggini, 2022). Moreover, cross-country heterogeneity and the interactions among socioeconomic, psychological, and technological factors are rarely analyzed within a unified empirical framework (Srouji & Torre, 2022). The present study addresses these gaps by using microdata from the European Central Bank's Study on the Payment Attitudes of Consumers in the Euro Area (SPACE 2024) and estimating logistic regression models with country fixed effects. By jointly analyzing income, education, digital literacy, privacy concern, and experience with technological issues, the research provides comparative evidence across 18 euro area countries. It thereby advances the understanding of payment behavior by demonstrating that financial inclusion, digital capability, and trust not demographic traits constitute the core drivers of digital payment adoption (van der Crujisen et al., 2015; van der Crujisen & van der Horst, 2016; Hellemans et al., 2022).

3. DATA AND METHODOLOGY

This study investigates the determinants of consumer payment preferences using micro-data from the European Central Bank's (ECB) Study on the Payment Attitudes of Consumers in the Euro Area (SPACE) 2024. This section details the data source, the construction of variables, and the empirical strategy employed in the analysis.

3.1. Data Source

This study draws on the third wave of the European Central Bank's Study on the Payment Attitudes of Consumers in the Euro Area (SPACE 2024), which includes approximately 40,000 respondents across 18 euro area countries. The survey combines two complementary components: a payment diary that records actual transaction behavior and a structured questionnaire that captures stated attitudes, preferences, and socio-demographic characteristics.

To align the analysis with the study's objective of understanding the determinants of payment preferences, the initial dataset was refined to include only respondents who expressed a clear preference between cash and digital payment methods in question QQ3. Individuals who selected "no preference," "don't know," or declined to respond were excluded. This restriction ensures that the analytical sample focuses on participants with well-defined and consistent payment attitudes, thereby improving the reliability of behavioral inference.

Additional refinements occurred during the multivariate modeling stage through list-wise deletion. This reduction reflects common data challenges in large-scale social surveys, including item nonresponse for sensitive variables such as income, and the survey's logical structure, which skipped modules on digital literacy and privacy concerns for respondents who did not use digital payment instruments. All standardized refusal and "don't know" responses were systematically coded as missing values to maintain internal consistency.

The final analytical sample comprises 9,895 respondents. This subset represents active and engaged participants in the euro area payment system, providing a robust empirical basis for identifying the socioeconomic and behavioral determinants of payment choice. While this focused sample enhances the validity of inferences about individuals with established payment preferences, it may limit generalizability to the broader population. The potential implications of this selective representation are addressed in the discussion section, where findings are interpreted within the scope of the analyzed population.

3.2. Variables

The analysis draws on variables from both the questionnaire and diary components of the Study on the Payment Attitudes of Consumers in the Euro Area (SPACE 2024), chosen to operationalize key theoretical constructs and test hypothesized determinants of payment preferences.

The dependent variable, payment preference (`pref_digital`), captures respondents' stated inclination toward digital versus cash payments. Respondents who selected "Card or other cashless payment" were coded as 1, while those preferring "Cash" were coded as 0. This binary measure complements revealed-behavior data from payment diaries and enables

assessment of attitudinal drivers of payment choice, which are particularly relevant in the context of increasing digitalization (Bagnall et al., 2016; Huynh et al., 2020).

Independent variables include socioeconomic characteristics, digital capability, trust, and prior experience with digital payments. Age (*age_group*) is grouped into 18–34, 35–54, and 55+, allowing for potential non-linear life-cycle effects. Household income (*income*) is an ordinal variable spanning five categories from €750 or less to over €4,000, reflecting economic capacity and access to financial infrastructure, both critical for digital payment adoption (van der Crujsen & van der Horst, 2019). Education level (*education*) ranges from primary to university/PhD, representing human capital and financial literacy, while gender (*female*) captures potential behavioral differences.

Digital literacy (*digital_literate*) indicates respondents' self-assessed ability to complete online, card, or mobile payments independently, serving as a proxy for technological competence (Foster & Rosenzweig, 2010). Privacy concerns (*privacy_concern*) reflect trust-related barriers, capturing worries over transaction privacy or data use that can inhibit adoption (Tang et al., 2022). Technical issues (*tech_issues*) denote whether respondents had experienced problems with card or mobile payments, highlighting perceived reliability and functionality.

To control for cross-country variation, country fixed effects (*country_fe*) are included. These account for time-invariant differences across the 18 euro area countries, such as financial infrastructure, regulatory frameworks, digitalization levels, and cultural norms, allowing the analysis to focus on individual-level determinants of payment preference within a controlled structural and institutional context.

3.3. Empirical Strategy

To model the determinants of digital payment preference, we estimate a logistic regression. This model is appropriate for a binary dependent variable and expresses the log-odds of the outcome as a linear function of the predictors. For intuitive interpretation, the results are presented as odds ratios. An odds ratio greater than 1 indicates an increased likelihood of preferring digital payments, while a value less than 1 indicates a decreased likelihood. To ensure the robustness of our standard errors against potential within-country correlation of unobservables, we employ a cluster-robust variance estimator at the country level. The model was subjected to comprehensive post-estimation diagnostics, which confirmed a good fit and the absence of multicollinearity concerns, lending strong credibility to the reported results.

4. RESULTS

This section presents the empirical findings from the analysis of the SPACE 2024 data. We begin with descriptive statistics to characterize the sample and explore payment preferences across demographics and countries. We then report the results of the logistic regression model examining the determinants of digital payment preference, followed by a discussion of model diagnostics and robustness checks.

4.1. Descriptive Statistics

The analytical sample comprises 9,895 respondents from across the euro area. As shown in Table 1, the data reveal a pronounced preference for digital payment methods, with 77.8% of respondents preferring card or cashless payments over cash. The sample demonstrates balanced gender distribution (50.2% female) and encompasses diverse age groups, with the average respondent positioned in the middle-age categories. Income levels show variation around a moderate mean of 3.24 on a five-point ordinal scale. Digital capability appears robust, with 90.3% of respondents reporting no need for assistance with digital payments. However, privacy concerns represent a significant psychological barrier, affecting 56.8% of respondents. Technical issues with digital payments are relatively uncommon, reported by only 1.0% of respondents. Educational attainment skews toward higher levels, with a mean of 2.20 on a three-point scale.

Table 1. Sample characteristics

Variable	Obs	Mean	Min	Max
Payment preferences	9,895	.78	0	1
Age	9,895	48.92	18	80
Gender	9,895	.5022739	0	1
Income	9,895	3.243658	1	5
Digital_literace	9,895	.9025771	0	1
Privacy_concerns	9,895	.5681657	0	1
Tech_issues	9,895	.9927236	0	1
Education	9,895	2.20192	1	3

Substantial cross-country heterogeneity in payment preferences emerges from the data, as detailed in Table 2. Digital preference rates span a remarkable 34-percentage-point range, from 55.7% in Austria to 90.2% in Finland. Several countries exhibit strong digital orientation, including Estonia (83.9%), Luxembourg (85.4%), and France (83.7%). Conversely, Ireland (68.8%), Lithuania (70.1%), and Malta (71.2%) demonstrate relatively higher cash preference. These pronounced national differences underscore the necessity of accounting for country-level heterogeneity in subsequent multivariate analysis.

Table 2. Cross-country variations in payment preferences

Country	0	1	Total
Austria	275	346	621
	44.28	55.72	100.00
Belgium	101	508	609
	16.58	83.42	100.00
Cyprus	74	275	349
	21.20	78.80	100.00

Country	0	1	Total
Estonia	60	312	372
	16.13	83.87	100.00
Spain	267	675	942
	28.34	71.66	100.00
Finland	66	607	673
	9.81	90.19	100.00
France	172	885	1,057
	16.27	83.73	100.00
Greece	126	410	536
	23.51	76.49	100.00
Croatia	185	609	794
	23.30	76.70	100.00
Ireland	178	392	570
	31.23	68.77	100.00
Italy	183	756	939
	19.49	80.51	100.00
Lithuania	87	204	291
	29.90	70.10	100.00
Luxembourg	41	240	281
	14.59	85.41	100.00
Latvia	48	193	241
	19.92	80.08	100.00
Malta	51	126	177
	28.81	71.19	100.00
Portugal	99	456	555
	17.84	82.16	100.00
Slovenia	44	152	196
	22.45	77.55	100.00
Slovakia	136	556	692
	19.65	80.35	100.00
Total	2,193	7,702	9,895
	22.16	77.84	100.00

4.2. Main regression results

Table 3 presents the results of the logistic regression model estimating the odds ratios for preferring digital payments. The model fits the data well, with a likelihood ratio chi-square of 672.63 ($p < 0.001$) and a pseudo R^2 of 0.064. All variance inflation factors (VIFs) are below 5 (mean VIF = 1.97), indicating no multicollinearity concerns.

Table 3. Logistic regression

	Number of obs	=	9,895
	LR chi2(29)	=	672.63
	Prob > chi2	=	0.0000
Log likelihood = -4897.7412	Pseudo R2	=	0.0643

Payment Preferences	Odds Ratio	Std.Err.	P>z [95%
Age_group			
35-54	1.029243	.0633686	0.640
55+	1.084008	.0702164	0.055
Gender	1.083358	.0546092	0.112
Income			
1001 or 2000	1.504295	.1542604	0.000
2001-3000	1.83651	.1816903	0.000
3000-6000	2.361864	.2447988	0.000
6000+	3.078482	.3776083	0.000
Digital_literate	1.253147	.0997943	0.005
Privacy concern	.5913037	.0315216	0.000
Tech issues	1.04263	.3048542	0.886
Education			
Secondary Edu	1.234305	.0871573	0.003
Higher Edu	1.628385	.1257264	0.000
Country			
Belgium	4.201045	.5828382	0.000
Cyprus	2.978309	.4703165	0.000
Estonia	5.053846	.8476897	0.000
Spain	2.584579	.2930119	0.000
Finland	7.382242	1.148745	0.000
France	4.758281	.5670432	0.000
Greece	3.326365	.4570237	0.000
Croatia	3.07241	.3740282	0.000
Ireland	1.839975	.2300132	0.000
Italy	4.003121	.4777569	0.000
Lithuania	2.380274	.3757353	0.000
Luxembourg	3.903028	.747943	0.000
Latvia	3.923054	.7296285	0.000
Malta	2.057098	.3903606	0.000
Portugal	5.248638	.7494402	0.000
Slovenia	3.020982	.5838719	0.000
Slovakia	4.076387	.533775	0.000
_cons	.4329133	.1430733	0.011

Table 3 presents the results from the logistic regression analysis examining determinants of digital payment preference. The model demonstrates strong overall fit, with a likelihood

ratio chi-square of 672.63 ($p < 0.001$) and a pseudo R^2 of 0.064. All variance inflation factors remain below conventional thresholds (mean VIF = 1.97), indicating no multicollinearity concerns.

Economic resources emerge as the most powerful predictor of digital payment preference. Compared to the lowest income category ($\leq \text{€}750$ monthly), the odds of preferring digital payments increase progressively across income brackets: 50% higher for the second income group ($OR = 1.50, p < 0.001$), 84% higher for the third group ($OR = 1.84, p < 0.001$), 136% higher for the fourth group ($OR = 2.36, p < 0.001$), and 208% higher for the highest income group ($OR = 3.08, p < 0.001$). This steep economic gradient underscores the fundamental role of financial resources in digital payment adoption.

Digital capability significantly influences payment preferences, with digitally literate respondents exhibiting 25.3% higher odds of preferring digital methods ($OR = 1.25, p = 0.005$). Conversely, privacy concerns substantially reduce the odds of digital preference by 40.9% ($OR = 0.59, p < 0.001$), highlighting the importance of trust-related psychological barriers. Educational attainment shows a clear progression, with secondary education increasing digital preference odds by 23.4% ($OR = 1.23, p = 0.003$) and tertiary education boosting odds by 62.8% ($OR = 1.63, p < 0.001$) relative to primary education.

Contrary to conventional digital divide narratives, age demonstrates no statistically significant effect on payment preferences when controlling for other factors. Neither the 35–54 age group ($OR = 1.03, p = 0.640$) nor respondents aged 55 and above ($OR = 1.08, p = 0.213$) differ significantly from the 18–34 reference category. Gender ($OR = 1.08, p = 0.112$) and technical issues ($OR = 1.04, p = 0.886$) similarly show no statistically significant relationships with payment preference.

Finnish respondents showing 7.38 times higher odds of preferring digital payments than Austrians. This stark divide reflects deep-rooted institutional and cultural factors. Finland's digital orientation, shared by countries like Estonia ($OR=5.05$) and France ($OR=4.76$), aligns with its high ECB and IMF index scores, advanced infrastructure, and high public trust (Petrikov & Koiov, 2024;Tona et al., 2024). Conversely, Austria's cash reliance stems from cultural traditions of privacy and autonomy, lower perceived benefits, and institutional caution (Kameswaran &Muralidhar, 2019). These national ecosystems of regulation, infrastructure, and trust fundamentally mediate payment behavior.

4.3. Model diagnostic and robustness

Comprehensive diagnostic analyses support the model's validity and robustness. The non-significant Hosmer-Lemeshow test ($\chi^2(8) = 6.79, p = 0.560$) indicates excellent calibration between predicted probabilities and observed outcomes. All variance inflation factors remain well below conventional thresholds (mean VIF = 1.97), confirming the absence of multicollinearity concerns. The significant Breusch-Pagan test ($\chi^2(1) = 506.46, p < 0.001$) reflects expected heteroskedasticity in binary outcome models and does not affect the consistency of parameter estimates. The model demonstrates acceptable predictive performance, correctly classifying 79.2% of cases with an area under the ROC curve of 0.72, indicating reasonable discriminatory power for behavioral data.

Table 4. Diagnostic tests

Test	Statistic	Value	p-value	Interpretation
Hosmer-Lemeshow Goodness-of-Fit	$\chi^2(8)$	6.79	0.560	Good model fit
Multicollinearity (VIF)	Mean VIF	1.97	-	No multicollinearity issues
Heteroskedasticity	$\chi^2(1)$	506.46	0.000	Expected for binary outcome

These results robustly demonstrate that payment preferences are driven primarily by economic resources, digital capability, and privacy concerns rather than demographic characteristics like age. The findings challenge age-based digital divide narratives and underscore the importance of economic inclusion, digital skills, and trust-building in promoting digital payment adoption.

5. DISCUSSION

This study uncovers that payment preferences in the euro area are primarily driven by socioeconomic factors such as income, education, digital literacy, and privacy concerns, rather than demographic traits like age or gender. These findings challenge the conventional view of the "digital divide" as something inherently generational, and instead, emphasize that the key drivers of digital payment adoption are capability and trust.

Higher income and education play a crucial role in facilitating digital adoption. Individuals with greater financial resources and higher levels of education have better access to both financial services and digital infrastructure. This access not only makes it easier for consumers to adopt digital payments but also creates a feedback loop: as more individuals engage in digital systems, they gain access to new financial tools, such as e-commerce and credit, which further enhance their financial inclusion. This dynamic highlights the importance of policies that both expand access to digital infrastructure and improve financial literacy to ensure that digital payment systems are inclusive and accessible to all.

Another key factor that enables digital adoption is digital literacy. Consumers who possess higher digital competence can navigate digital payment systems with greater confidence, significantly reducing the anxiety often associated with technology use. This aligns with established models like TAM and UTAUT, which highlight that individuals who are more comfortable with technology are more likely to trust and use it. Therefore, it is essential for policymakers to prioritize skills training and consumer education to bridge the digital gap, ensuring widespread participation in the digital economy.

However, a major barrier to the widespread adoption of digital payments is privacy concerns. Our findings show that even individuals who are capable of using digital payment systems often hesitate due to fears about data misuse and privacy violations. This highlights a critical aspect of digital adoption: the need for trust in both the technology and the institutions behind it. When consumers feel their personal data is at risk, they are less likely to engage with digital payment systems, even if they have the skills and resources to do so. As such, effective policies must place a strong emphasis on privacy protection, transparent

data governance, and clear communication to ensure that consumers feel secure when using digital tools.

Furthermore, the study reveals cross-country variation in payment preferences that cannot be ignored. Countries with strong institutional trust, such as those in the Nordic region, exhibit higher rates of digital adoption, whereas cash-reliant countries like Austria show greater resistance to digital payments. These national differences underscore the importance of considering institutional trust and cultural norms when designing digital payment strategies. In countries where trust in institutions is lower, even highly educated and digitally literate individuals may be reluctant to adopt digital payment systems. Therefore, national strategies must be context-sensitive, tailored to each country's digital infrastructure and cultural attitudes toward privacy and digital technology.

Finally, this study fundamentally reframes the concept of the digital divide. Age, once assumed to be a major determinant of digital payment preferences, is no longer a significant factor when socioeconomic and cognitive elements are controlled for. Instead, the divide is shown to be structural, driven by access to resources, education, and trust not age. This insight calls for policies that address these underlying barriers to digital adoption rather than focusing on specific age groups. By addressing the root causes of digital exclusion, such as low income, limited education, and privacy concerns, we can create a more inclusive financial system that benefits all segments of society.

5.1. Practical Implications

The findings have several important implications for policymakers, financial institutions, and regulators seeking to foster an inclusive and trusted digital payments ecosystem in the euro area.

The non-significance of age demonstrates that the so-called “age-based digital divide” is largely a proxy for deeper structural inequalities. Older individuals' lower digital payment usage in prior studies likely reflected lower digital literacy, limited income during retirement, or stronger privacy concerns not age itself (Aljaradat & Shukla, 2025). Policy approaches that target individuals solely based on demographic characteristics risk misallocating resources and reinforcing stereotypes. Efforts should instead focus on the underlying enablers of inclusion, improving digital and financial skills, fostering trust in digital systems, and removing access barriers (Agrawal, 2025).

The strong income and education gradients confirm that economic inclusion remains the foundation for digital payment participation. High-income households have greater access to formal financial services and digital tools, while higher education cultivates cognitive readiness, risk understanding, and trust in abstract systems (Fakriah, 2025). Policymakers must therefore address the economic underpinnings of digital exclusion by promoting financial access, equitable connectivity, and inclusive education. The digital divide in payments is fundamentally a divide in economic opportunity and literacy, not generational attitude (Dixit & Sharma, 2024).

Digital literacy and privacy concerns exerted opposite but equally powerful effects on digital preference. Literacy fosters empowerment; privacy fears inhibit it. This duality underscores that inclusion depends not only on technical competence but also on perceived security and autonomy. Policymakers should therefore complement digital skills training

with initiatives that build confidence in the integrity of digital payment systems. Payment providers and regulators must prioritize privacy-by-design, transparent consent mechanisms, and clear communication about data use to reduce perceived risk (Bodhgire, 2025).

The findings support the maintenance of a hybrid payment ecosystem that ensures the accessibility and continued acceptance of cash while advancing secure and user-friendly digital systems. Cash remains a vital fallback for individuals facing technological or financial barriers, while digitalization enhances convenience and efficiency. An inclusive system must thus preserve choice, enabling all citizens to transact in their preferred mode without exclusion (Singh, 2024; Harsha & Mithun, 2025).

Significant country-level differences ranging from Finland's strong digital preference to Austria's cash resilience reveal that a uniform euro-area policy is insufficient. National strategies should be context-sensitive: countries with high digital maturity may focus on innovation and privacy enhancement, while cash-oriented societies may prioritize trust-building and capability programs. Tailored national implementation within a harmonized ECB framework offers the best route to balanced inclusion across the region (Slade et al., 2015; Sadiya Khudeja & Sowmya, 2025).

This study extends the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) by demonstrating that economic enablers (income, education) and trust constructs (privacy concerns, national context) must be treated as central determinants rather than peripheral moderators. Traditional demographic predictors such as age and gender play a minimal role once these structural and cognitive factors are included. The findings reinforce a paradigm shift from demographic determinism to a socio-cognitive and inclusion-based understanding of technology adoption.

5.2. Limitations and Future Research

Despite its strong explanatory validity, the study faces several limitations that should guide interpretation and future research.

The SPACE 2024 data are cross-sectional, limiting causal inference. The relationships identified between income, literacy, trust, and payment preference represent associations, not temporal effects. Longitudinal data are necessary to establish how changes in these factors drive adoption over time.

The analysis relies on stated preferences rather than observed payment behavior. Although stated preferences are informative for attitudinal analysis, discrepancies may exist between intention and actual usage, as revealed in diary-based studies.

The analytical sample (N=9,895) includes respondents with clear payment preferences. This focus on active users provides valuable insight into digital adoption dynamics but may underrepresent the most financially or digitally excluded populations.

Future studies should combine longitudinal and experimental designs to test the causal effects of interventions such as digital literacy training, privacy assurance campaigns, or changes in payment infrastructure. Qualitative and behavioral research could explore why some economically included individuals remain loyal to cash and how perceptions of autonomy and anonymity shape their decisions. Comparative studies could also investigate institutional and cultural drivers behind the persistent cross-country heterogeneity identified here.

5.3. Conclusion

This study demonstrates that payment preferences in the euro area are primarily shaped by economic inclusion, digital competence, and trust, rather than by demographic characteristics such as age or gender. Using ECB's *SPACE 2024* microdata and country-fixed logistic models, the analysis reveals that income, education, and digital literacy substantially increase the likelihood of preferring digital payments, while privacy concerns strongly inhibit it.

These findings challenge the traditional notion of an age-based digital divide and instead reframe payment adoption as a function of capability and confidence. Age and gender lose explanatory power once structural and cognitive variables are considered, indicating that the key barriers to digital participation are socioeconomic and psychological, not generational.

For policymakers, the implications are clear: advancing digital payment adoption requires parallel investment in financial access, digital skills, and institutional trust. Privacy protection, transparent governance, and inclusive education are essential complements to technological innovation. Maintaining a hybrid payment system where both cash and digital options remain accessible will ensure that digitalization enhances rather than excludes financial participation across the euro area.

Ultimately, fostering an inclusive digital payments ecosystem depends as much on building trust and capability as on deploying new technologies.

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THE DEVELOPMENT OF SUSTAINABLE TOURISM IN ALBANIA AND TOURISTS' APPROACH TOWARDS DEVELOPMENT

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Abstract

This article analyzes the development of sustainable tourism in Albania and tourists' perceptions of this process. Tourism is one of the most dynamic sectors of the Albanian economy, with extraordinary natural and cultural potential, but also with serious challenges related to sustainability, diversification of the offer, and infrastructure improvement. The study is based on a combination of methods: a literature review on the concept of sustainable tourism and an empirical analysis through questionnaires distributed to tourists (401 individuals) and tourism businesses (1900 units).

The article relies on existing literature and data from international organizations such as UNWTO and OECD, as well as on several studies conducted in the Albanian context. The aim is to analyze the challenges and opportunities related to this form of development, as well as to examine tourists' attitudes toward sustainable practices during their visits to Albania.

The results show that 87% of tourists rated their first experience in Albania as positive, but only 13% have returned for repeat visits. This gap highlights the discrepancy between the initial experience and the creation of long-term loyalty. On the other hand, 40% of businesses consider tourism as the most attractive sector for investment, but they report difficulties in accessing finance, lack of digitalization, and insufficient institutional support.

The analysis reveals the contrast between tourists' perceptions, the enthusiasm of businesses, and the structural challenges that hinder sustainable development. The article concludes with recommendations for integrated policies, diversification of tourism products, investments in digitalization, and improvement of service quality.

Keywords: Sustainable tourism, Albania, tourist perceptions, digitalization, regional development

INTRODUCTION

Tourism is one of the fastest-growing sectors in the global economy, contributing to employment, regional development, and intercultural exchange (UNWTO, 2023). In Albania, this sector has experienced significant growth after 2010, becoming a key driver of

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national revenue. According to INSTAT (2022), Albania recorded over 7 million international visitors in 2022, marking a historical record for the country.

However, this development has not always been accompanied by long-term strategic planning. Overcrowding in coastal areas, lack of standardized infrastructure and services, as well as institutional fragmentation, pose serious risks to the sustainability of the sector (OECD, 2020). To address these challenges, it is necessary for Albania to orient itself toward a sustainable model that balances economic benefits with environmental protection and the preservation of cultural heritage.

The purpose of this article is to analyze tourists' perceptions and the capacities of tourism businesses in relation to sustainable development in Albania, highlighting the gaps between demand and supply, and providing recommendations for public policies and practical interventions.

LITERATURE REVIEW

The concept of sustainable tourism is closely linked to sustainable development, as defined by the Brundtland Commission (1987), which emphasizes the need to meet the needs of the present without compromising the ability of future generations to meet their own. UNWTO (2018) defines sustainable tourism as a process that takes into account current and future economic, social, and environmental impacts, while addressing the needs of visitors, the industry, the environment, and host communities.

Various studies show that sustainability is an increasingly important criterion for tourists in choosing destinations (ETC, 2023). In developed countries, sustainable practices have become a competitive element in the tourism market (Richards & Govers, 2019). OECD (2020) recommends integrating tourists' perceptions with an analysis of the private sector's capacities for the design of effective policies.

In the Albanian context, the literature is still emerging, but studies such as Tase and Lulaj (2022) highlight the importance of tourists' perceptions in building strategies for sustainable development. Reports from the Ministry of Tourism (2019) underline the need for diversification of the tourism offer and the strengthening of the national image.

MATERIAL AND METHOD

The study employed a combined approach that included both a literature review and empirical analysis.

- **Tourist survey:** Distributed to 401 international visitors in key tourist destinations (Tirana, Durrës, Vlorë, Saranda, Shkodra). The questions measured travel experience, satisfaction, use of technology, evaluation of infrastructure, and willingness to return.
- **Business survey:** Conducted with 1,900 tourism units (accommodation, gastronomy, transport, handicrafts). The questions focused on infrastructural capacities, digitalization, access to financing, and perceptions of institutional support.

The collected data were processed through statistical and comparative analysis, linking tourists' perceptions with the realities of businesses.

Research Question and Hypotheses

This study is guided by the research question: “*How do tourists' perceptions and business capacities influence the sustainable development of the tourism sector in Albania?*”

Specific sub-questions:

1. How do tourists experience Albania, and what factors influence their return or lack thereof?
2. What structural and financial challenges do businesses identify?
3. How are the data from the two groups related to each other?
4. What improvements are recommended for policymakers?

Main hypothesis: Alignment between demand (tourists) and supply (businesses) is a prerequisite for competitiveness and sustainability.

Linking the Questionnaires to the Research Question

To test and verify the hypotheses, two separate questionnaires were designed, with groups of questions measuring:

a) For tourists:

- Travel experience and satisfaction;
- Use of technology;
- Evaluation of infrastructure;
- Willingness to return.

This two-tiered structure of measurement instruments enables an analytical comparison between perceptions and concrete realities, highlighting structural gaps and the need for strategic interventions.

RESULTS AND DISCUSSION

Analysis of the Tourist Survey in Albania

This report summarizes the key findings from a survey conducted with tourists who visited Albania. The aim of the study was to understand their experiences, the sources of information they use, their evaluations of accommodation and services, as well as their willingness to return to the country. The collected data have been visually analyzed through relevant charts to provide a clear and understandable overview of each indicator.

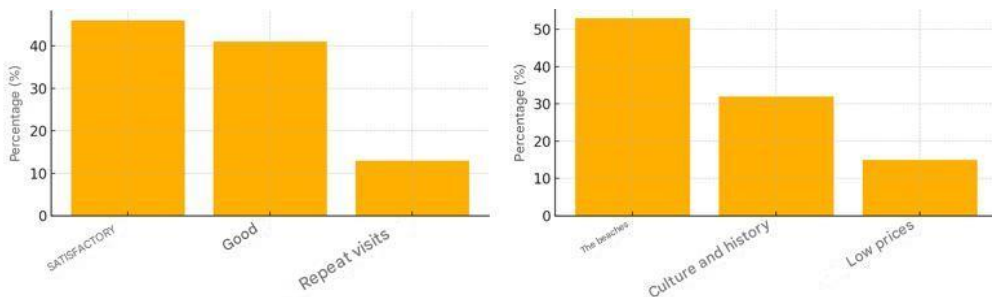


Fig. 1. (a) Evaluation of the First Visit to Albania, **(b)** Motivation to Visit Albania

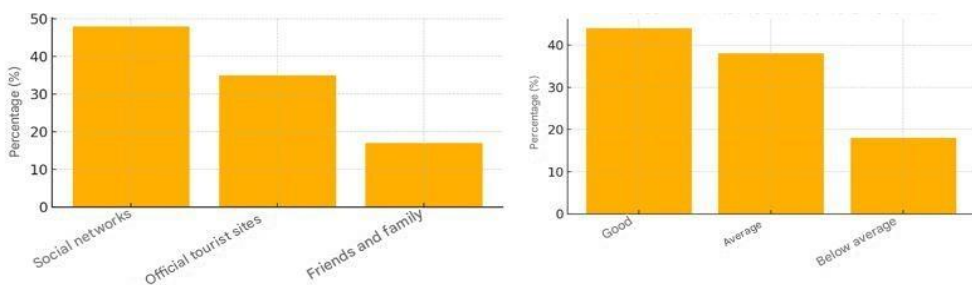


Fig. 2. (a) Sources of Information Used, **(b)** Motivation for Accommodation and Services

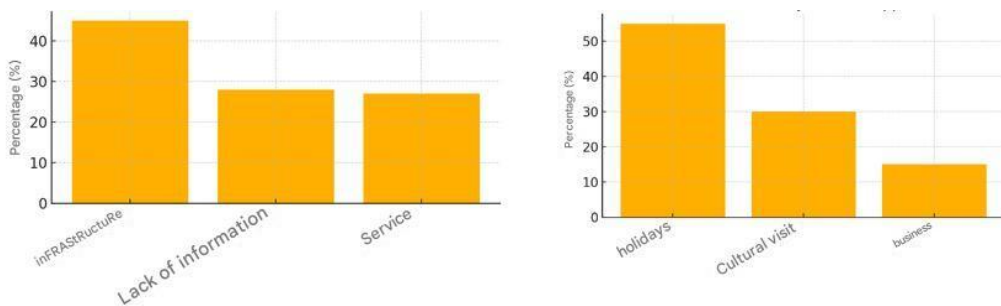


Fig. 3. (a) Main Problems Encountered by Tourists, **(b)** Purpose of Visiting Albania

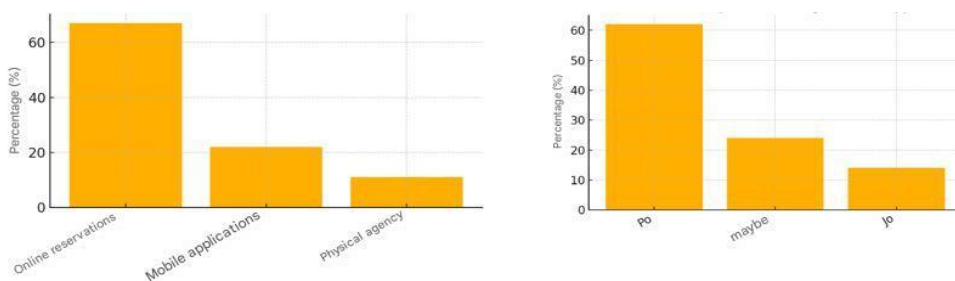


Fig. 4. (a) Use of Technology for Reservations, **(b)** Willingness to Return to Albania

RESULTS

Tourists' Experience

- 87% of tourists rated their experience as “good” or “satisfactory.”
- Only 13% returned for additional visits, compared to 30–35% in Croatia and Greece (UNWTO, 2023).
- 75% reported inadequate infrastructure, while 68% requested more natural and cultural activities.
- 67% used applications and online platforms for bookings, indicating a high level of digitalization.

Business Perspective

- 40% of businesses consider tourism the most attractive sector for investment.
- 57% report serious difficulties in accessing financing (OECD, 2020).
- Only a small share maintain an active online presence or use CRM systems for customer management.
- Businesses demand more institutional support and professional training.

Gap Between Demand and Supply

Tourists widely use technology for information and bookings, while businesses lag behind in its adoption. On the other hand, tourists' high expectations for modern services and infrastructure conflict with the limited capacities of businesses.

Discussion

The results reveal a contradictory panorama: Albania is positively perceived as a destination but struggles to maintain tourist loyalty. Compared to regional countries, the return rate is much lower. One of the main reasons lies in service quality and lack of standardization (Duro & Elmazi, 2020).

From the business perspective, enthusiasm for tourism does not align with actual financial and technological capacities. OECD (2022) emphasizes that the absence of dedicated financial schemes is a major barrier for tourism businesses in the Balkans.

In terms of policies, the lack of a national integrated tourism platform hinders access to information and inter-institutional coordination. By contrast, Croatia and Austria have developed comprehensive digital systems that facilitate the promotion and management of tourism supply (European Commission, 2023).

CONCLUSIONS

The data collected from the tourist survey provide a comprehensive overview of the current state of the Albanian tourism sector. The surveys were conducted across the entire territory of Albania, including major tourist cities such as Tirana, Durrës, Shkodër, Vlorë, Saranda, Gjirokastër, Berat, and Korçë. This geographic coverage was intended not only to understand general perceptions of tourism but also to assess whether Albania exhibits

internal differences in the organization and standardization of tourism services. In this way, the study aimed to identify regional approaches, inequalities in the quality of the tourism offer, and opportunities for harmonizing development at the national level.

Although Albania possesses significant natural, cultural, and hospitality potential, it has yet to establish a sustainable and internationally competitive tourism system. This is evident from various indicators related to visitor experiences and the capacities of businesses operating in the sector.

From the tourists' perspective, the first experience in Albania was positively rated by 87% of respondents, who described it as "good" or "satisfactory." However, only 13% returned for a second visit or more, signaling a problem with building destination loyalty. The most attractive elements were the beaches and low prices, which, although initial advantages, are insufficient to ensure repeat visits and the creation of an emotional and lasting connection with the destination. The most frequently reported issues include lack of information, poor infrastructure, and low-quality services.

On the other hand, businesses in Albania show enthusiasm for investing in tourism, with around 40% considering the sector the most attractive for investment. Nevertheless, they face challenges in accessing finance, applying for grants, and digitalizing services. Many businesses are still in the early stages of technological development, and only a small portion have clear strategies for digital marketing and customer experience management. This places Albanian businesses at a competitive disadvantage compared to regional and international operators.

Compared to established destinations such as Croatia, Greece, and Italy, Albania lags behind in building a strong tourism brand, professionalizing services, and ensuring inter-institutional coordination. Collaboration between public institutions, businesses, and communities remains fragmented, while the absence of an integrated tourism development strategy prevents the country from creating a sustainable and comprehensive system. Therefore, improving these elements is essential to transition from a destination with potential to a competitive player in the international market.

RECOMMENDATIONS

The development of diversified tourism products should be a primary priority of the national strategy. It is necessary to move beyond the current focus on coastal tourism and to develop and promote new products such as cultural, rural, gastronomic, adventure, and wellness tourism. This would help extend the tourist season and ensure a more equitable distribution of economic benefits across the country. Strengthening digitalization in the tourism sector requires support for the creation of a national platform for tourism promotion and online service provision. Training in technologies such as CRM, reservation management, and digital marketing is essential to increase efficiency and improve the visitor experience. Another priority is the improvement of infrastructure and access through investments in road networks, signage, public transport, and tourist information centers. These measures would enhance travel convenience and improve the overall image of Albania as an organized and accessible destination.

A key component is the development of human resources through the establishment of a sustainable professional training system in the field of tourism. This includes training hotel staff, tour guides, and all stakeholders in the hospitality industry. Building the “Albania” tourism brand is also essential. A unified marketing strategy is needed to promote the country in international markets, creating a distinctive identity that conveys authentic Albanian values and highlights the unique experiences visitors can enjoy in Albania.

Facilitating access to financing for tourism businesses through special grants, soft loans, and tax incentives would provide an important boost for sector development, particularly for small and medium-sized enterprises. Finally, improving inter-institutional coordination should be realized through the creation of a permanent cooperation mechanism between central public institutions, local authorities, and the private sector. Integrated planning and decentralization of competencies to municipalities would support the sustainable development of destinations and the provision of higher-quality services for tourists.

Sustainable tourism in Albania is achievable but requires deep reforms and sustained investments. Based on the data analysis, the main recommendations are:

1. Diversification of the tourism offer: Beyond coastal tourism, develop products such as cultural, rural, gastronomic, and wellness tourism (Tase & Lulaj, 2022).
2. Digitalization of the sector: Establish a national platform for managing bookings, promotion, and data collection.
3. Financial support for businesses: Implement grant schemes, soft loans, and incentives for international sustainability certifications (OECD, 2020).
4. Professional development of human resources: Provide training for hotel staff, guides, and local operators.
5. Inter-institutional coordination: Create a permanent cooperation mechanism between public institutions, local authorities, and the private sector.

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SHOULD THE BANK OF ALBANIA CHANGE ITS MAIN OBJECTIVE?

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Abstract

The circumstances and phases of Albania's development have resulted in a market where different currencies, particularly the dollar and the euro, are freely traded. There are further currencies available. The circumstances are important since there are a lot of transactions in these foreign currencies, and in everyday speech, you might find safe marketplaces where these transactions are used only or nearly only in these currencies. The Albanian Lek (ALL) seriously undermines the Central Bank's role as a protector of price stability. This is due to the fact that the Albanian Lek (ALL) fails to provide the prerequisites for achieving and maintaining price stability. The Law "On the Bank of Albania" says that "achieving and maintaining price stability" is its fundamental objective. The legislation's definition of this objective ensures the independence of the Central Bank. The central bank's instruments aim to promote economic growth, productivity, and employment in addition to price stability in order to guarantee an efficient monetary policy. By examining the central bank's policies in connection to economic development, employment, and performance, as well as the European Union, we try to analyze this phenomenon. Stated differently, objectives will be viewed as reacting to the economic situation and growth rates. The central bank must, however, define or provide an understanding of the word "price stability" in order to be open and accountable. Some of the challenges that arise in the pursuit of the main objective include defining the inflation category that the central bank chooses as a target while maintaining a balance between accountability and independence, credibility and transparency, and defining what it means to achieve and maintain price stability.

Keywords: Central Bank; Price Stability; Economic Growth; Full Employment

RESEARCH CONTEXT

In previous research (Naqellari et al., 2014), we presented a framework supporting that „financial stability“ leads to economic growth and a decreasing unemployment rate. This paper highlights the change in the fundamental objective of the Central Bank of the Republic of Albania. The objective of the new economy includes its growth and the reduction of the unemployment rate, specifically: "Financial stability, currency and price stability in the function of sustainable economic growth and the reduction of unemployment". This, according to her, would increase her responsibility for achieving macroeconomic indicators. After 11 years, returning to this topic was a necessity because other economic and political factors and agents have affected the economic situation.

We are currently in a situation where many events have occurred and moreover it has been proven that the policy of consumer price stability did not affect the lives of citizens

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and moreover it was the production rates that experienced a healthier economy and the fulfillment of the needs of citizens. Events such as the pandemic were the culmination of how the policy of price stability showed the absolute failure of this policy and that government interventions through money printing or the obligation of banks to provide loans backed by the government with sovereign funds and the payment of salaries to employees who could not go to work were reasons that this policy could not affect price stability. The increased inflation above the projected 2-4% rates that followed the post-Covid period was evidence that this stability was still vulnerable. The prices of consumer and production goods that accompanied the post-Covid period surged by more than 50%., further affecting the livelihoods of the local population. Below you can see the inflation rate graph for the period 2021-2025.



Source: (Bank of Albania, 2025).

Low wages have forced a large number of emigrations of the local population, where from a situation with a high unemployment rate the need for additional labor force was felt. So we have a completely different situation that forces us to return once again to the problem of whether this objective should be changed or not. The table 1 below shows the massive emigration of the population.

Years	Net Migration											
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Net emigration number	(18,765)	(19,773)	(20,801)	(21,785)	(20,600)	(9,473)	(14,902)	(15,030)	(23,082)	(16,684)	(32,853)	(32,497)
Cumulative emigration 2011-2022	(18,765)	(38,538)	(59,339)	(81,124)	(101,724)	(111,197)	(126,099)	(141,129)	(164,211)	(180,895)	(213,748)	(246,245)

Source: (INSTAT, 2025).

The third component is the expansion of the use of foreign currencies, particularly the euro, as a medium of exchange in domestic trade. The Governor of the Bank of Albania

also acknowledges this, confirming that the public prefers to hold a sizable portion of its assets and liabilities in foreign currency, indicating a high degree of financial euroization in Albania. This is evident in the banking industry's assets and liabilities, where there is a comparatively high level of foreign currency lending (public liabilities) and foreign currency deposits (public assets). This process has been made easier by the banks themselves, meeting their supervisory duty to maintain a more balanced foreign exchange position. In Albania, there is both monetary and real euroization, i.e. foreign currency serves as a means of payment in financial transactions, or when prices for certain products/goods (mainly durable and high-value goods) and salaries in certain sectors or strata are paid in foreign currency (euro), or indexed to its exchange rate.

The high level of euroization leads to a decrease in the effectiveness of monetary policy, limits the role of the free exchange rate as an automatic stabilizer in the event of macroeconomic shocks, in the context of the higher sensitivity of economic entities to large fluctuations in the exchange rate, and undermines the effectiveness of fiscal policy, through the possible increase in the cost of debt service and undesirable changes in its structure. Also, the high level of euroization is usually associated with costs for the central bank, in the form of an opportunity cost, to maintain a relatively higher level of "foreign exchange reserves" and the loss of "income (seigniorage)" that accompanies the "substitution of the domestic currency" with the foreign one. In terms of "financial stability", "euroization" increases the exposure of the financial system and economic operators to "adverse" exchange rate developments and situations of currency liquidity stress (G Sejko 2025)¹. In relation to December 2015, foreign currency loans in relation to July 2025 have increased by 66 million lek or 21.59%. Meanwhile, the specific weight of loans in euros has decreased from 56.34% to 42.39% in July 2025. The increase in the specific weight of loans in lek refers to the depreciation of the euro in relation to the lek. If we were to refer to the average exchange rate of December 2015, i.e. the correction for the effect of the exchange rate with which these currencies were corrected, it results that the decrease of 13.95% refers more to the fact of the decline in the exchange rate.

THEORETICAL BACKGROUND

A fundamental objective of central banks is price stability, aiming for low and stable inflation (Zeng, 2024). This is often pursued through an inflation-targeting framework, where central banks explicitly communicate a target inflation rate (Heckelman & Wilson, 2021). The theoretical underpinning for this objective stem from the understanding that high and volatile inflation can distort economic decisions, reduce purchasing power, and hinder long-term economic growth (Zeng, 2024). Studies have shown that managing inflation expectations is crucial, especially in the face of energy shocks (Shahzad et al., 2024). The concept of financial stability has gained significant prominence in central bank mandates, particularly since the 2008 financial crisis (Du et al., 2023). Financial stability refers to a resilient financial system that can withstand shocks and smoothly channel funds from

¹ <https://aab.al/wp-content/uploads/2024/12/Bankieri-41-ALB.pdf>

savers to borrowers (Čihák, 2007). The theoretical basis for this objective acknowledges the potential for financial crises, which can have severe short and long-term consequences for economic activity and productivity (Bonciani et al., 2023). Central banks employ various tools and strategies to ensure financial stability, including macro-prudential policies (Bonciani et al., 2023). These policies, such as optimal capital ratios, can strengthen the resilience of financial intermediaries to adverse shocks, leading to higher steady-state growth rates. In some cases, macro-prudential policies have been found to be more powerful than monetary policy in explaining credit and output fluctuations (Abdelbaki, 2019). While price stability is often the primary objective, central banks also contribute to fostering sustainable economic growth and full employment.

These objectives are interconnected; a stable price environment and a robust financial system are conducive to investment, consumption, and job creation. The transmission mechanisms of monetary policy, such as interest rate adjustments, influence various sectors of the economy, including investment and consumption (Singh, 2023). For example, expansionary monetary policy can stimulate economic activity, while contractionary policy can dampen it. The impact of monetary policy shocks can have significant and enduring effects on economic variables like real GDP (Laumer & Santos, 2024). Central banks navigate a complex landscape where the traditional mandate of price stability, primarily through inflation control, increasingly intersects with the critical objective of maintaining financial stability. This balancing act has become particularly prominent following global financial crises, which underscored the interconnectedness of monetary policy and systemic risk. The theoretical background for this intricate relationship reveals both complementary and conflicting aspects that central banks must address. Initially, central banking largely focused on achieving price stability, often by employing inflation-targeting frameworks. This approach posits that low and stable inflation provides a conducive environment for economic growth and efficient resource allocation. Central banks adjust interest rates to influence inflation, aiming for a target rate, as demonstrated by the Federal Reserve's adoption of an inflation-targeting regime in 2012 (Schulze & Tsomocos, 2020). The Taylor rule, for instance, provides a guideline for setting short-term interest rates based on deviations of inflation from its target and output from its potential (Wu, 2024). Deviations from this rule can be influenced by various economic factors, including unemployment rates.

METHODOLOGICAL APPROACH

In this paper, instead than using statistical or econometric models, a qualitative methodological approach to researching the relationship between price stability and monetary policy usually entails literature studies, theoretical frameworks, and institutional analysis. This method places a strong emphasis on comprehending the systems, frameworks, and external circumstances that influence how monetary policy affects or contributes to price stability. In order to investigate how monetary policy tools (such as interest rates or inflation targeting) are developed and applied to preserve price stability, particularly in the face of global

economic problems and financial crises, qualitative studies frequently synthesis findings from previous research and economic theory (Friedrich & Cunningham, 2019).

To learn how monetary policy regimes prioritize and operationalize price stability, in this paper we examine the Albanian central bank missions, legislative frameworks, and policy statements. Creating indices or typologies to contrast central banks' approaches to pricing and financial stability is one way to do this. Comparing the success of policies in other nations or economic environments is a common use of qualitative methods, which emphasize the ways in which market systems, institutional variations, and policy coordination – such as with macroprudential or fiscal policy – affect results. The practical difficulties and trade-offs faced by policymakers are demonstrated through in-depth case studies of particular nations or events (such as the implementation of inflation targeting or the reactions to financial crises).

While acknowledging the difficulties presented by market volatility and political instability, several studies use thorough literature evaluations to reconcile economic theories and prior empirical data, emphasizing how responsive monetary policy may manage inflation and help economic recovery. To put findings in context, this paper uses a mixed method by frequently consulting international policy frameworks and central bank documents. By examining governance, debt sustainability, and the efficiency of monetary policy in fostering price stability and economic development, country-specific qualitative studies investigate the particular difficulties and policy responses in many national contexts.

FINDINGS

European Union. What is the main objective of the European Central Bank?

"The main objective of the ECB is to maintain the performance of price control by preserving the purchasing power of the euro area, the ECB carries out in fact, the control of inflation "Eurozone" by maintaining an appropriate monetary policy (by controlling the monetary base or fixed short-term interest rates). According to Article 105, paragraph 1, of the Treaty establishing the European Community, in addition to the primary objective of maintaining price stability, the ECB "supports the general economic policies in the Community, with a view to contributing to the achievement of the objectives of the Community "by acting" in accordance with the principle of an open, competitive market economy. "These objectives (as defined in Article 2 of the Maastricht Treaty) are: Achieving and maintaining a high level of employment and sustainable and non-inflationary growth. For many other countries we are using the table worked out in (1), as a description of the cases has also been made.

Table 2. The summary of the same objectives by country

No.	Denomina- tion	Price Stability	Cur- rency Stabil- ity	Mone- tary Stabil- ity	Price and cur- rency stabil- ity	Price stabil- ity with a view to sus- tainable economic growth	Price sta- bility and the reduc- tion of un- employ- ment rate	Stability of the finan- cial system and the price
1	BOA	Yes						
2	Turkey	Yes						
3	Azerbaijani	Yes						
4	Czech Repub- lic	Yes						
5	India	Yes						
6	New Zealand	Yes						
7	Croatia		Yes					
8	MOLDOVA		Yes					
9	Russia		Yes					
10	Ukraine		Yes					
11	hong Kong		Yes					
12	China		Yes					
13	Mongolia		Yes					
14	Bosnia & Herze- govina			Yes				
15	Armenia			Yes				
16	Belarus			Yes				
17	Jordan			Yes				
18	Niger			Yes				
19	Pakistan			Yes				
20	Peru			Yes				
21	Malaysia				Yes			

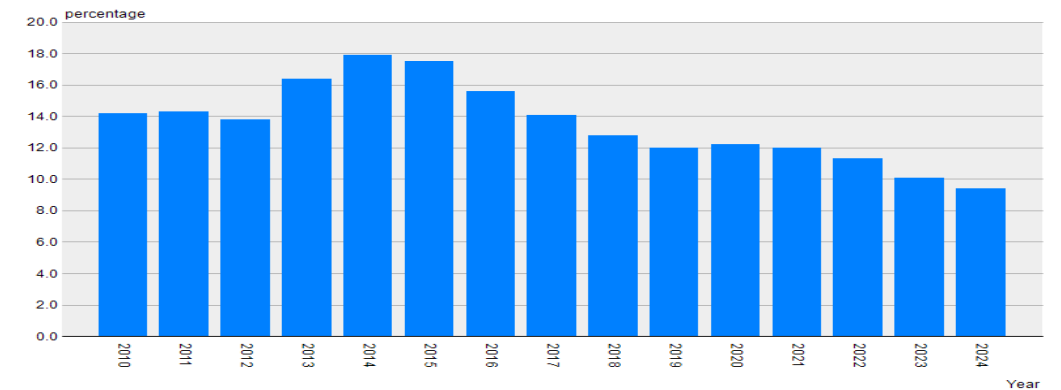
No.	Denomina- tion	Price Stability	Cur- rency Stabil- ity	Mone- tary Stabil- ity	Price and cur- rency stabil- ity	Price stabil- ity with a view to sus- tainable economic growth	Price sta- bility and the reduc- tion of un- employ- ment rate	Stability of the finan- cial system and the price
22	Indonesia				Yes			
23	Japan					Yes		
24	South Korea					Yes		
25	Philippines					Yes		
26	Singapore					Yes		
27	Thailand					Yes		
28	Australia						Yes	
29	Kosovo							Yes
30	Serbia							Yes
31	Montenegro							Yes
	Total	6	7	7	2	5	1	3

What is different is that if we refer to this table, countries that have the same objectives as Albania are not at the same stage of development and do not have the same potential resources as countries that have price stability as their objective. To date, the Central Bank cites and does not hold accountable for other macroeconomic indicators. The GDP indicator, and unemployment are seen as the responsibility of the government. Such an attitude, of disconnection and lack of coordination of the objectives of the Government with those of the bank, has affected these indicators. It has not affected the development and success of the harmonious branches of the economy. The Central Bank is constantly evaluated in positive terms, because it has only one inflation indicator as its main objective. The Central Bank, normally since it designs and implements monetary policy, is as responsible for the economy as the government is responsible for its fiscal policies. When evaluating the objectives of other Central Banks, the ECB and the Bank of Albania, it is necessary and essential that their objectives are consistent and supportive of government policies in order to support monetary policy and fiscal policies. It is precisely this coordination that will enable the realization of the overall objectives of economic growth. One reason that the Bank still maintains this objective is the fact that Albania aspires and is moving towards the EU and requires harmonization of all policies that the Albanian state follows to enter the EU and without a doubt that the Central Bank of Albania also follows the model. But this model, where the EU currency serves as a free international currency in economic

transactions both outside the EU and in Albania and the Albanian currency operates only within the Albanian territory but not in the EU, gives signals that this policy is different. What makes it even more distinct is that transactions in euros have increased significantly while deposits and loans in euros exceed 50%. This means that price stability in Albania depends on the euro and not on the lek. The strengthening of the lek against the euro has only eroded production capabilities and has not affected the increase in labor productivity. The massive departure in the form of emigration in Albania is a product of the inability of the Albanian economy to maintain the labor force and the workforce, fictitiously reducing the value of unemployment that is observed. See the Table below: Source INSTAT Albania

The unemployment rates for the years 2010-2024 are as follows. Source INSTAT Albania

Unemployment rate by Year. Total, 15-64, Total, Unemployment rate.



Source: (INSTAT, 2025).

To analyze unemployment, emigration must also be taken into account, so the emigration rate must also be added, because their contribution is not in Albania but outside it. To this must be added the level of informality, which has a significant impact on the agricultural and construction sectors. Among the main factors of emigration is clearly wages. Initiatives to increase wages are in fact attempts to maintain existing purchasing power. The fact that Albania is not able to retain its intellectual and professional elite means that the product of their work cannot be purchased at fair value, due to extremely low wages. This mass exodus is actually greater, but Albania is currently in search of cheap labor and the markets of Africa and South Asia are being seen as alternatives for labor demand. Meeting of the President Albanian Bajram Begaj during a meeting with the Prime Minister of the interim government of Bangladesh Muhammad Yunus at the United Nations General Assembly in September 2025 in New York was in focus according to the Daily Star newspaper dated September 26, 2025 interest in recruiting workers from Bangladesh for its labor market. The decline in the unemployment rate to such levels is not normal for a market like Albania, where its rate should be around 10-12%, where higher economic growth rates have been detected.

The purchasing power of Albanian wages is quite far. In 2023, the per capita income in Albania was \$8,600. Converted into daily income, the average income was \$23.5 per day, which is \$3 less than the standard set by the World Bank for a dignified life. Within the region, Bosnia and Herzegovina and North Macedonia have similar income levels to Albania, while Serbia and Montenegro enjoy a higher standard of living. These figures are indicative, as they vary depending on the methodology used. However, a large income gap remains between the Western Balkans and the European Union, where the income difference is approximately four times greater. With the population decline, as reflected in the 2023 Census data, and an economic growth rate of about 4% in 2024, the average annual income of Albanians has increased to \$9,300, reaching the prosperity standard. However, despite this increase, poverty levels remain high, affecting around 23% of the population. Average monthly wages cover total wages and salaries in cash and in kind, before any tax deductions and before social security contributions. They include wages and salaries, compensation for time not worked, bonuses and bonuses paid by the employer to employees. For most countries, wages cover the total economy and are expressed per full-time equivalent employee. This allows for comparisons across countries regardless of the length of working hours and the proportion of part-time and full-time workers.¹

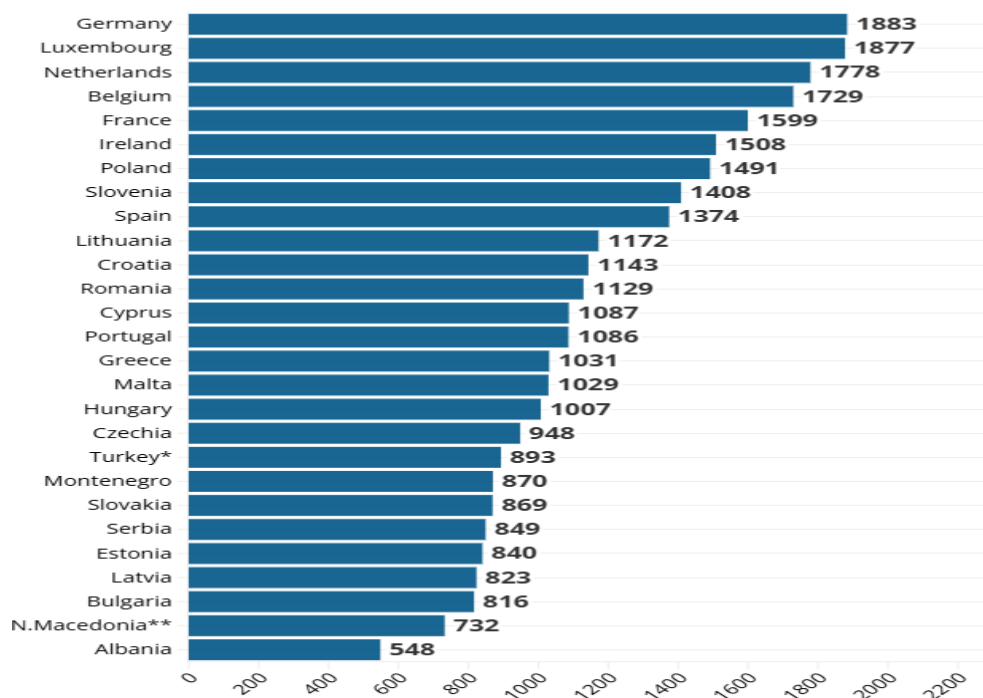
With data from Eurostat regarding the countries of the region, we are as follows (data for 2023)

	Country	Average monthly salary in \$	The difference between the maximum (Italy)
1	Albania	700.8	2223.6
2	Bosnia and Herzegovina	1076	1848.4
3	Croatia	1713	1211.4
4	Greece	1593.7	1330.7
5	Ital	2924.4	0
6	Montenegro	1067.4	1857
7	Romania	1609.9	1314.5
8	Serbia	1094.1	1830.3
9	North Macedonia	964.7	1959.7

But looking at the incomes of 2024, minimum wages according to the countries of the region, we again notice sad levels, where Albania again appears last in the region. Attached are the data on the minimum and maximum monthly wages. Here we recall that the majority are paid with minimum wages and the imbalance becomes even greater, if we consider the median method. Below is the source Eurostat wages according to purchasing power.

¹ V Mici. Telegraph newspaper, April 11, 2025. <https://telegraf.al/opinion/flet-dr-vladimir-mici-nga-politikat-e-gabuara-te-geverive-varferia-ka-perkur-reth-about-23%-te-populsise/>

**Monthly minimum wages in purchasing power standards
(January 2024)**

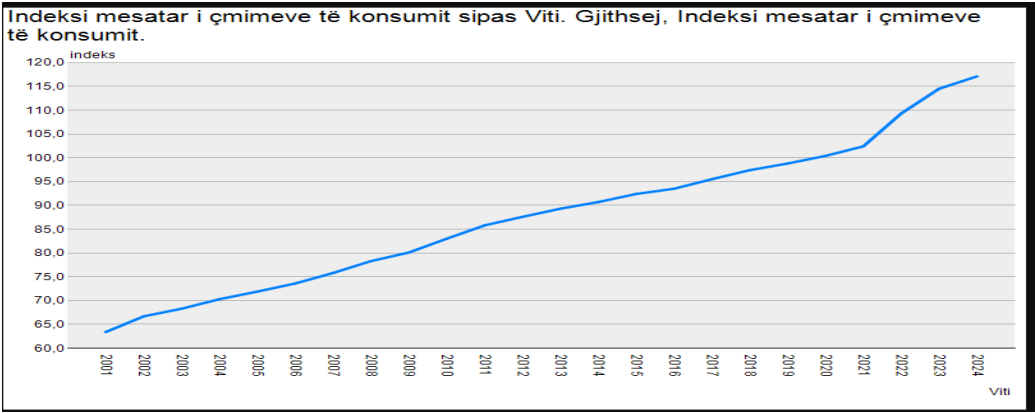


Productivity

The inflation rate of the Bank of Albania, measured in ALL, refers to the value in lek. This inflation, although currently below 3%, cannot serve as a condition for development. Without increasing productivity, it is impossible to increase the number of employees in, although the demand for free labor from those countries seems to attract them. But productivity depends on technology and education, inefficient use of labor, natural resources, financial institutions, capital infrastructure, entrepreneurial skills and government monopolies.¹ Their attitude and way of paying quickly changes their decisions where everyone sees and justifies leaving for European countries, making Albania a country of trafficking of immigrants originating from these countries. So even though unemployment has decreased, we have not increased productivity which is measured by real wages and we are still last in Europe. But productivity depends on the inefficiency of labor use. In agriculture, old techniques are still used and the inability to introduce new technologies which are conditioned by the small areas of farmers and the inability to organize in other forms of cooperation. This results in low incomes. Natural resources are another alternative and Albania is rich in them. To add mineral resources and their potential reserves which have almost not

¹ William a Mceachern Macroeconomics, a contemporary introduction 2012.

changed because investments in geological and geophysical research are almost at minimal levels. The workforce for these is aging and the distribution of the current labor structure does not match the natural distribution of the population. This creates vacuums in professions and inability to develop these sectors. Although the construction and infrastructure sectors have grown rapidly in recent years, their backwardness will still affect productivity growth. Albania comes from a totally state-owned system and entrepreneurship and people's skills are still low for reasons related to purchasing power. Finally, to increase productivity, monopolies must be removed, but the Albanian market favors monopolies due to the size of the country and as a result, their limited number suppresses the space for free markets. However, this is a challenge with time due to the introduction of artificial intelligence, which enables lower costs and higher productivity. To achieve this, we need large investments in education. Despite the right to adapt faster through faster copying of technology, there are still many challenges. In this regard, despite the introduction of private business, the funds allocated from the state budget are below the EU average. The objective of the Central Bank should change for another reason. We are mentioning two of them.



First, because it has left the Albanian currency unprotected against the euro and the dollar coins that circulate as the official Albanian currency. The implementation of the flexible exchange rate has become part of the exchange rate to exit Albania because the rates do not represent the real state of the economy. The currency that enters the territory of Albania from exports is very low compared to other sources, such as remittances, foreign investments, debts taken by road or informally in relation to imports that are increasing in absolute value. In this way, its inflows will come continuously, being exhausted and causing them to be the main source of currency to be exports. The interruption of other sources will have serious consequences for the Albanian economy because the Albanian currency will depreciate immediately and dramatically. This depreciation will directly affect the rate of price increase. The import-export table according to INSTAT presents a situation that is not at all reflective of current exchange rates.

Million lek

By Countries	ACTIVIT Y	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
EU countries	Imports	320031	320684	350183	368707	373902	364763	338437	420767	478192	429075	443930
	Exports	197780	182718	188504	210473	236554	228453	200228	264846	353119	314243	265393
CEFTA countries	Imports	43592	41092	37982	49234	44934	44378	45242	66243	72318	55373	54737
	Exports	29653	34524	33027	40499	50686	51339	48309	68821	81558	79612	68117
EFTA countries	Imports	17025	8316	6654	12868	9756	15221	10113	12469	21654	13739	9659
	Exports	1954	2478	2590	1363	2988	1112	752	2722	3597	5149	2342
TurKEy	Imports	38997	43686	45591	50740	54135	61715	57841	85801	114565	84473	96496
	Exports	10092	6943	2803	2131	2151	2055	3067	5290	6433	5139	4834
China	Imports	40301	46507	50580	49418	53617	59485	53665	65057	77331	93410	97088
	Exports	8737	6570	7452	8399	5692	6204	5003	9031	9808	10065	10418
US	Imports	12734	8114	10418	8409	8116	11312	8455	11414	11832	14553	16632
	Exports	1462	2139	1595	3442	5345	3652	3237	4911	13466	9742	7038
United Kingdom	Imports	4273	4429	3820	5104	5485	5189	4609	5972	6722	8030	8577
	Exports	439	453	521	479	1140	732	754	895	2136	1551	1479
TOTAL	Imports	476953	472828	505228	544480	549945	562063	518362	667723	782614	698653	727119
TOTAL	Exports	250117	235825	236492	266786	304556	293547	261350	356516	470117	425501	359621
% Import/ex port		191%	200%	214%	204%	181%	191%	198%	187%	166%	164%	202%

It is clearly seen that the margin between imports and exports increases in absolute value while maintaining the same ratios, even though 2024 was the peak year of tourism in Albania. This means that the exchange rates do not represent the real situation. So without strong economic growth, the economy will have major shocks. But how can the Central Bank influence it? Passive policy through interest rates does not justify growth. So the economy should be oriented towards active monetary policies in combination with fiscal policy.

CONCLUSION

The fundamental objective of the Bank of Albania cannot be price stability and financial sustainability, but rather increasing labor productivity, stimulating investments in education, technology, and natural resources. This is thanks to monetary policies combined with fiscal ones that encourage territorial development, which includes every economic resource.

Following the policies of the ECB, despite the fact that we aspire to the EU, does not mean that the same policy as the EU should be followed with the Albanian lek, maintaining inflation within the 2-4% rate. In fact, the entry of foreign capital in monetary form requires the review and stability of the currency in exchange rates, since the strengthening of the lek from 2015 to date has affected economic growth, not to the desired extent, and consequently also in the increase in wage growth. This is expressed in the lower wages that Albanians suffer today. This has given one more reason for emigration. Without another approach, we have no solution. It is imperative that Albania cannot automatically approach the EU by changing its currency, because this will destroy the economic growth it has achieved so far, leading to a stagnation of several years, as long as we do not have significant economic growth. The fundamental objective of the Central Bank should be economic growth, providing increased labor productivity, investment in technology, natural resources, and education, and long-term stability of the exchange rate and interest rates.

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FISCAL POLICY AND CONSUMER CONFIDENCE: A SURVEY-BASED STUDY OF ALBANIA

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Abstract

Fiscal policy is a crucial determinant of consumer expectations and household spending behavior, particularly in emerging economies such as Albania, where economic stability is closely tied to public trust in government measures. The research examines the interaction between the key instruments of fiscal policy, specifically taxation, public expenditure, and fiscal incentives, and consumer confidence within the Albanian economy.

Using a survey-based methodology, the research collects primary data through questionnaires administered to Albanian households, aiming to capture their perceptions of fiscal measures and their impact on consumption and saving decisions. The study addresses three central questions: (1) How do Albanian consumers perceive the role of fiscal policy in ensuring economic stability? (2) To what extent do taxation and government spending influence household consumption patterns? (3) What are the expectations of Albanian consumers regarding the improvement of fiscal governance in the context of EU integration?

The findings are expected to contribute to the literature by providing empirical evidence on the fiscal policy–consumer confidence nexus in a small, transitioning economy. From a policy-making perspective, the study offers practical recommendations for enhancing fiscal governance, strengthening consumer trust, and supporting sustainable growth in Albania.

Keywords: Fiscal policy, consumer confidence, taxation, public expenditure, Albania

JEL: E62, D12, H30, H20, O52

INTRODUCTION

Fiscal policy constitutes one of the fundamental pillars of macroeconomic management in Albania, playing a decisive role in maintaining financial stability and promoting economic growth. In a transitional economy characterized by limited monetary autonomy and the need for alignment with the fiscal standards of the European Union, it remains the primary instrument of state intervention in the economy. According to the International Monetary Fund (2025), prudent fiscal management in recent years has contributed to reducing public debt and keeping inflation under control, thereby preserving the country's macroeconomic stability. However, beyond these macroeconomic indicators, an often-overlooked dimension lies in citizens' perceptions of fairness, transparency, and the effectiveness of fiscal policies. These perceptions are essential, as they directly influence consumer behavior, willingness to comply with fiscal obligations, and trust in public institutions. Therefore, understanding the interaction between fiscal policy and consumer confidence represents a critical dimension for designing sustainable economic policies.

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This study aims to analyze Albanian citizens' perceptions of taxation, public expenditure, and fiscal governance, assessing how these factors influence public trust and consumer behavior. Specifically, it seeks to address three main research questions:

- a) The perceived role of fiscal policy in maintaining economic stability;
- b) The impact of tax changes on consumption decisions;
- c) Citizens' expectations regarding fiscal governance within the context of European integration.

Through an empirical approach based on quantitative data collected via a structured online questionnaire (Google Forms), the study contributes to understanding the link between fiscal policy and consumer confidence in Albania. The analysis of responses helps identify perceived trends regarding fiscal fairness, efficiency, and transparency, offering a comprehensive overview of the interaction between fiscal institutions and the public. In conclusion, the expected findings of this study emphasize that public trust serves as a crucial mediating mechanism between fiscal policy and the real economy. Strengthening this trust requires not only sound and equitable fiscal policies but also transparent institutional communication and continuous accountability. Only through such measures can Albania progress toward a reliable and efficient fiscal system aligned with European Union standards.

LITERATURE REVIEW

The impact of fiscal policy on consumer confidence and behaviour is one of the most well-established themes in contemporary economic literature. Theoretical approaches grounded in Keynesian models define fiscal policy as a key instrument for stimulating aggregate demand, emphasizing the role of expectations and perceptions in amplifying macroeconomic effects. Expansionary fiscal measures – such as tax cuts and increased public spending – have the potential to raise real income, improve consumer confidence, and boost private consumption through psychological mechanisms known as “confidence channels” (Tagkalakis & Konstantinou, 2010). Empirically, this relationship has been validated in several studies for advanced economies. Omohundro (2017) observes that fiscal interventions during recessions in the United States, particularly the combination of tax reductions and higher public spending, significantly enhanced consumer confidence. Similarly, Hayo and Uhl (2014), using representative data for Germany, found that more than half of households tend to increase consumption following income tax cuts, reflecting an immediate psychological response to expansionary policies. Cogan and Taylor (2010) also note that temporary tax cuts create short-term stimulative effects through optimistic expectations, demonstrating that the influence of fiscal policy extends beyond traditional income channels. In theoretical terms, discussions regarding public spending effects have evolved considerably. The classical Ricardian equivalence model (Barro, 1981) suggests fiscal neutrality – meaning that an increase in public expenditure does not affect total consumption because individuals anticipate future taxes to finance it. However, more recent empirical evidence challenges this view. Galí, López-Salido, and Vallés (2007) demonstrate the existence of a “crowding-in” effect, whereby higher government spending can stimulate private

consumption by reinforcing a sense of economic security. A similar perspective is offered by Özerkek and Çelik (2010), who argue that in developing economies, public expenditures positively influence consumer confidence, as they are perceived as signals of improving economic conditions. Conversely, when spending is financed through higher taxes, a “crowding-out” effect may emerge, reducing consumption due to the perceived tax burden (Barro, 1981). In recent decades, academic attention has increasingly focused on the role of institutional credibility and transparency as mediating factors of fiscal effectiveness. The Bank for International Settlements (BIS, 2023) contends that fiscal credibility determines whether households respond to public policies through increased consumption or saving. When citizens believe that public resources are managed responsibly, they are more likely to spend; in contrast, a lack of trust encourages conservative consumption behavior. This interpretation is supported by Polasky, Kling, Levin, and Smith (2025), who argue that in countries with weak governance, the erosion of public trust leads to a “melting of the social contract,” significantly diminishing the stimulative effects of fiscal policies. In this framework, trust functions as an “invisible multiplier” that determines the effectiveness of fiscal interventions in the real economy. In transitional economies such as Albania, the role of fiscal policy is even more critical due to limited monetary flexibility and the ongoing consolidation of institutional structures. In these contexts, the level of public trust and fiscal transparency largely determine the success of government measures (UNDP, 2024; IMF, 2016). According to the World Bank (2023) and the European Commission (2025), the broad support of Albanian citizens for European Union integration – approximately 91% – is linked to expectations of greater fiscal responsibility, budgetary discipline, and more effective public fund management. This indicates that the EU integration process serves as an institutional catalyst for strengthening fiscal credibility. Nevertheless, domestic evidence shows that Albania continues to face challenges in this regard. Levels of trust in public institutions remain low, and fiscal transparency is widely perceived as insufficient (UNDP, 2024; IMF, 2025). These limitations constrain the potential of fiscal policy to positively influence consumer confidence and private consumption growth. At the same time, the lack of in-depth research on this relationship represents a notable gap in Albanian literature (Özerkek & Çelik, 2010). The experiences of countries such as Turkey and the Central European economies suggest that the impact of fiscal policy on trust depends not only on the scale of public spending but also on the political context and the effectiveness of public communication surrounding these measures. In conclusion, existing literature demonstrates that the interaction between fiscal policy and consumer confidence is a complex process influenced by economic, institutional, and perceptual factors. Fiscal policies can generate sustainable stimulative effects only when supported by institutional credibility, transparency, and effective public communication. In the absence of these elements, even well-designed measures are likely to produce limited outcomes in terms of increasing consumption and strengthening public trust.

METHODOLOGY

This study employs an empirical approach to analyse Albanian citizens' perceptions of fiscal policy and its influence on consumer confidence. Data were collected through a structured online questionnaire titled "Fiscal Policy and Consumer Confidence in Albania", distributed via the Google Forms platform. The survey aimed to capture a diverse sample across gender, age, education, and employment status. The questionnaire consisted of five sections covering: (1) demographic information, (2) perceptions of the tax system, (3) assessment of public expenditure effectiveness, (4) the impact of fiscal changes on consumption decisions, and (5) expectations regarding fiscal governance within the framework of European integration. A total of 330 valid responses were collected, forming the basis for both quantitative and qualitative analyses. The survey included primarily closed-ended questions using a Likert scale, enabling statistical evaluation of perceptions, while a few open-ended questions provided qualitative insights. Data analysis focused on calculating frequencies, percentages, and differences among demographic groups, with the aim of identifying relationships between fiscal perceptions, public trust, and consumer behaviour. Ultimately, this methodology seeks to provide empirical evidence on how Albanian citizens perceive fiscal fairness, efficiency, and transparency, and to highlight the role these perceptions play in shaping economic trust and behavioural responses.

RESULTS

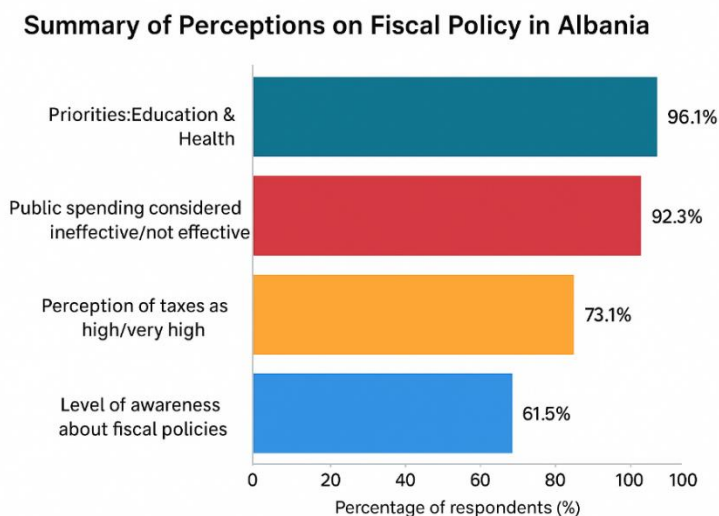
The survey results provide a clear overview of Albanian citizens' perceptions of fiscal policy and its influence on consumer confidence. The sample represents economically active age groups with a high level of education and broad participation in the labour market, ensuring the reliability of responses. Preliminary analysis indicates a significant level of awareness regarding fiscal issues, but also a relatively low level of trust in public institutions and the effectiveness of fiscal policies. The following sections present the detailed findings according to the main dimensions of the survey.

Section I. Demographic Data

The demographic data of respondents show a balanced and well-represented sample of economically active groups. Women constitute the majority (65.4%) of participants, while 50% belong to the 35–44 age group, reflecting the participation of individuals in their most productive professional stage. Educational attainment is notably high, with 88.5% of respondents holding a Master's or PhD degree, suggesting a sample with advanced analytical competencies and substantial knowledge of fiscal matters. Moreover, 80.8% of respondents are employed, offering a direct perspective on the impact of fiscal policies on the labour market. Regarding household income, 38.5% report monthly earnings above 200,000 ALL, and 27% fall within the 150,001–200,000 ALL range, indicating moderate economic stability. Only 3.8% of households report income below 50,000 ALL, showing limited representation of lower-income groups.

Section II. Perceptions of Fiscal Policy

The survey results present a comprehensive picture of public perceptions regarding fiscal policy in Albania, revealing an intersection between moderate awareness and institutional mistrust. Data analysis shows that while citizens are relatively well-informed about fiscal measures, they express deep skepticism regarding their implementation and the effectiveness of budget management. Figure 1 below summarizes four key indicators of public perception concerning fiscal policies in Albania.



Source: Author's calculations based on the questionnaire.

Fig. 1. Summary of Perceptions of Fiscal Policies in Albania

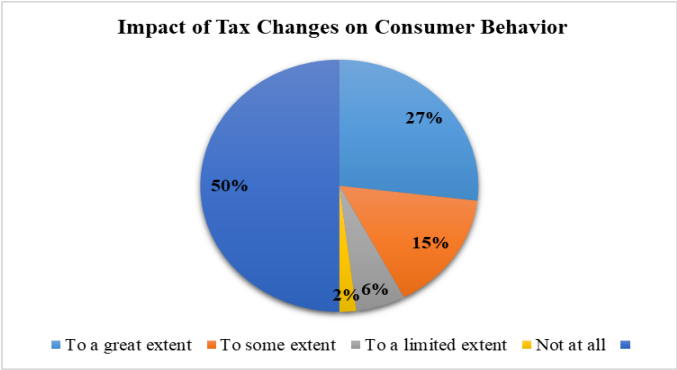
The results indicate that 61.5% of respondents' report feeling sufficiently informed about fiscal policies, suggesting a basic level of awareness but lacking depth. This implies that fiscal issues have entered the public discourse, albeit not in a detailed or systematic manner. According to reports by the Bank of Albania (2024), fiscal and financial education remains a key challenge in improving trust and enhancing civic engagement in economic processes. Regarding the perception of the tax burden, 73.1% of respondents consider the current tax system to be "high" or "very high." This assessment aligns with findings from IMF (2016) and UNDP (2024) studies, which highlight that in transition economies, citizens often perceive a disproportion between the fiscal burden and the quality of public services. This suggests that in Albania, the perception of tax inequality is closely linked to the lack of transparency and inefficiency in the use of public revenues. A critical finding from the questionnaire concerns perceptions of the effectiveness of public spending. According to the data, 92.3% of citizens believe that public funds are not managed effectively. This skepticism is directly tied to the lack of budgetary transparency and the widespread perception of institutional

corruption. As reported in ‘Trust in Governance 2023’ (UNDP, 2024), 62.7% of Albanians believe the government does not adequately uphold accountability, while over 80% perceive corruption to be widespread across different levels of the administration. These perceptions significantly shape how the public evaluates the effectiveness of fiscal policy, creating a gap between the recognition of its role and the trust in institutions responsible for its implementation. The results also clearly reflect citizens’ preference for investments in human capital. Over 96% of respondents emphasize that fiscal policy priorities should focus on education and healthcare, while sectors such as infrastructure and social assistance are viewed as secondary. This aligns with recent UNDP surveys (2024), where 54% of Albanians identify healthcare and 38% education as the most critical areas for the country’s long-term development. The focus on these sectors suggests that citizens view fiscal reform as a means to build a more equitable and inclusive model of economic development.

In summary, the data reflect considerable awareness but low institutional trust. Participants acknowledge the importance of fiscal policy for economic stability, yet express skepticism regarding its implementation and transparency. This contrast between recognition and institutional distrust highlights the need for reforms that strengthen fiscal communication, accountability, and public trust.

Section III. Consumption and Consumer Confidence

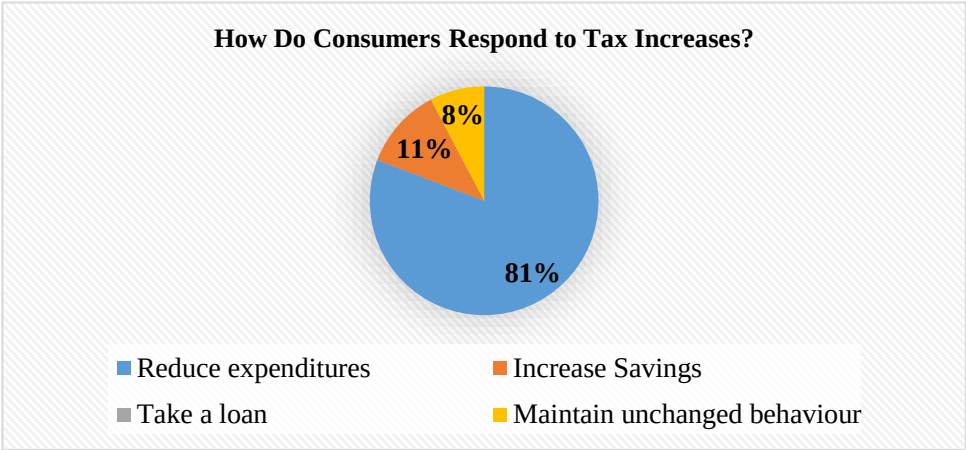
The results of this section provide a clear overview of how Albanian citizens respond to fiscal changes and how they perceive public policies in relation to their economic well-being. As shown in Figure 2, the impact of taxation on consumer behavior is significant: 53.8% of respondents’ state that changes in taxes affect their spending behavior “a lot,” while 30.8% report being affected “somewhat.” Only 11.5% report a minor impact and 3.9% no impact at all, indicating a high elasticity of consumption in response to taxation.



Source: Author’s calculations based on the questionnaire.

Fig. 2. Impact of Tax Changes on Consumer Behavior

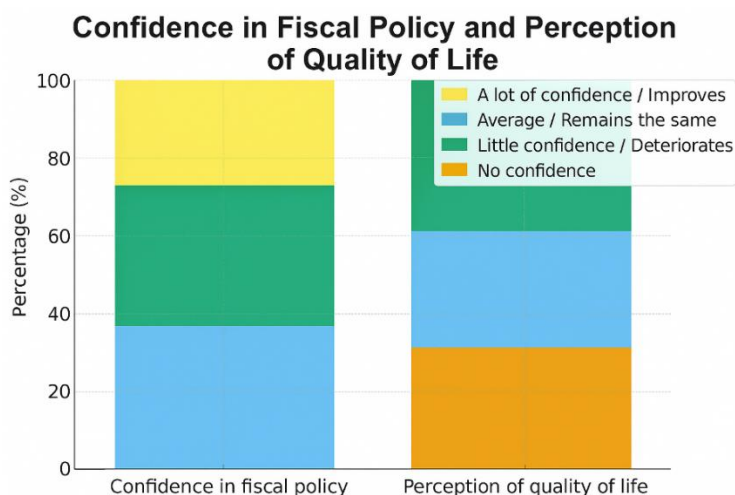
Consistent with these findings, Figure 3 illustrates that in response to tax increases, 80.8% of citizens reduce their expenditures, 11.5% increase their savings, while only 7.7% report no change in behavior.



Source: Author’s calculations based on the questionnaire.

Fig. 3. How Do Consumers Respond to Tax Increases?

This result clearly reflects a protective behavioural pattern among Albanian consumers, who respond immediately to increased fiscal burdens by reducing consumption, rather than seeking alternative sources of financing or borrowing. It indicates that Albanian households adjust their spending promptly in response to fiscal changes, thus contradicting the Ricardian equivalence principle – namely, that tax reductions tend to translate into increased consumption. This finding aligns with Hayo and Uhl (2014), who observed that more than half of German households would immediately spend the amount saved from a tax cut, highlighting the strong link between fiscal expectations and consumption behaviour. In this context, Figure 4 illustrates the relationship between trust in fiscal policy and perceptions of quality of life. The response distribution reveals a stark contrast: 80.7% of respondents’ report having “little” or “no trust” in current fiscal policies (53.8% and 26.9%, respectively), while only 19.2% express moderate trust. Notably, none of the respondents indicated having “high trust” in the institutions responsible for designing and implementing fiscal policies, pointing to a significant deficit in institutional credibility.

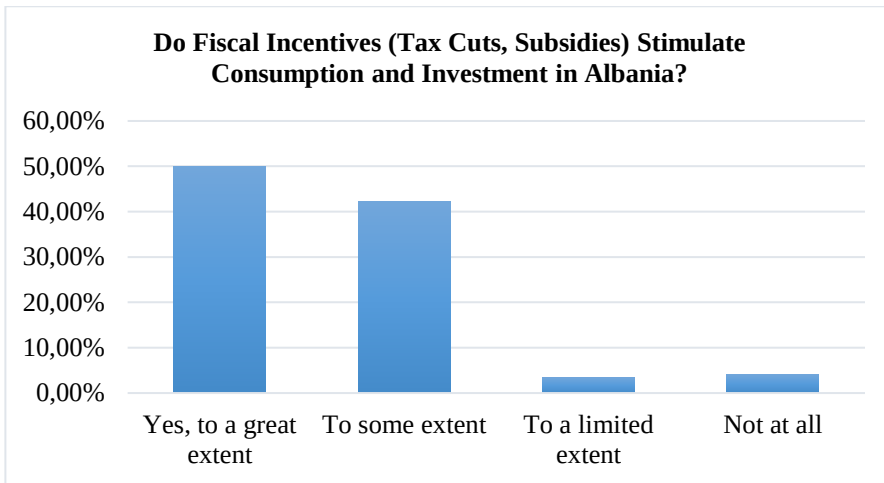


Source: Author's calculations based on the questionnaire.

Fig. 4. Confidence in Fiscal Policy and Perception of Quality of Life

Regarding the perception of quality of life, the responses indicate that 42.3% of citizens believe the situation has “worsened,” 38.5% perceive it as having “remained the same,” and only 19.2% report an improvement. This distribution reflects a generally pessimistic outlook on the actual impact of fiscal policy on social well-being, despite a public acknowledgment of its theoretical importance. The contrast between awareness of fiscal effects and distrust in institutional effectiveness represents a central finding of the survey. On one hand, citizens are aware that tax changes directly influence their consumer behaviour; on the other hand, a lack of transparency and widespread perceptions of corruption within state institutions significantly erode their trust in the sustainability of fiscal policies.

Conversely, Figure 5 shows that most respondents perceive fiscal policy as an effective instrument to stimulate consumption and investment. Specifically, 50% of participants believe that fiscal incentives – such as tax cuts, subsidies, or relief measures – would have a strong positive effect, while 42.3% consider their impact to be “moderate.” Only a small proportion, approximately 7.7%, express scepticism by evaluating the effect as “low” or “negligible.” These results suggest that Albanian citizens have high expectations for the role of fiscal policy in boosting economic activity, although a segment of the population remains cautious due to limited confidence in the practical implementation of stimulus measures.



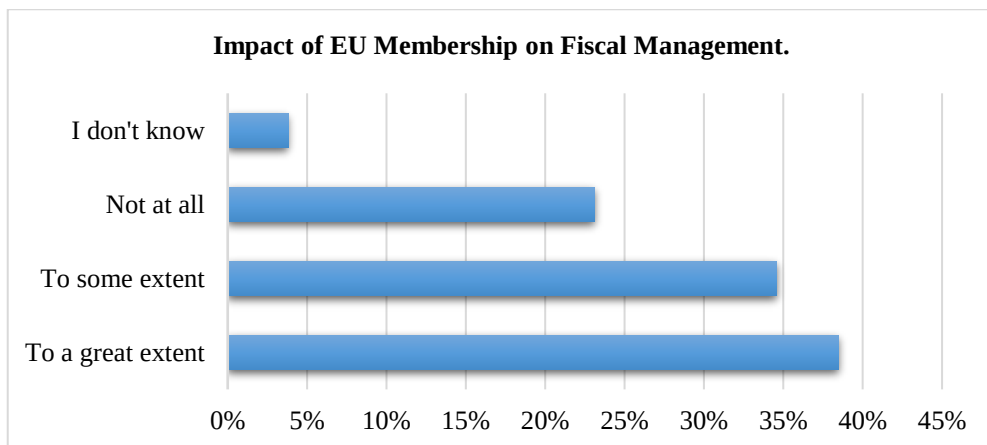
Source: Author's calculations based on the questionnaire.

Fig. 5. Do Fiscal Incentives (Tax Cuts, Subsidies) Stimulate Consumption and Investment in Albania?

The study's findings suggest that strengthening public trust requires a combination of sustainable fiscal policies, enhanced transparency in the management of public funds, and effective communication between the government and the public. In conclusion, the data indicate that Albanian citizens are aware of the influence of fiscal policy on their consumption behaviour but perceive its implementation as inefficient. The immediate reaction to tax changes and the low expectations for improvements in quality of life underscore the need for a renewed relationship of trust between citizens and fiscal institutions – a key factor for fostering sustainable consumption and improving the national economic climate.

Section IV. The European Perspective

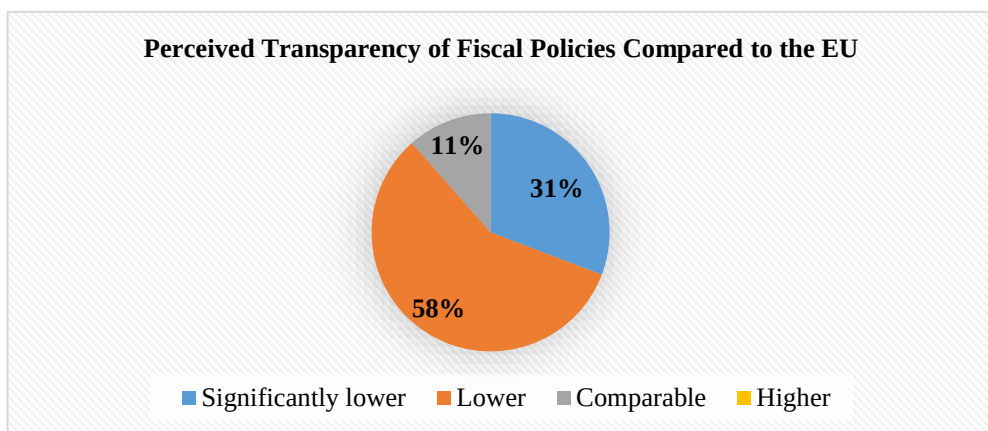
The results of this section clearly reflect Albanian citizens' perceptions regarding the impact of European integration on fiscal policy management and institutional transparency. The analysis reveals that a majority of respondents view the European Union (EU) accession process as a genuine opportunity to improve fiscal governance and strengthen public credibility. As shown in Figure 6, 38.5% of respondents believe that EU membership would positively influence fiscal management, while 34.6% respond "maybe," indicating cautious optimism regarding potential reforms. Only 23.1% believe that integration will have no direct impact, and 3.8% report no clear opinion. These percentages suggest a moderate level of optimism concerning the role of the integration process in enhancing institutional efficiency and enforcing fiscal rules aligned with EU standards.



Source: Author's calculations based on the questionnaire.

Fig. 6. Impact of EU Membership on Fiscal Management

Meanwhile, the results regarding the perceived transparency of fiscal policies in comparison to EU countries (see Figure 7) reveal a marked scepticism: 58% of respondents consider fiscal transparency in Albania to be “lower,” and 31% rate it as “much lower,” while only 11% view it as “similar.” Not a single respondent perceives transparency in Albania as “higher” than in EU member states. This assessment suggests that, although citizens associate EU integration with potential improvements in fiscal governance, there is currently a pronounced lack of confidence in the level of transparency and institutional effectiveness.



Source: Author's calculations based on the questionnaire.

Fig. 7. Perceived Transparency of Fiscal Policies Compared to the EU

The findings demonstrate broad support for the European integration process, with the majority of respondents viewing EU membership as an opportunity to enhance budgetary discipline and institutional transparency (European Western Balkans, 2025). This stance reflects the perception that alignment with European norms will improve fiscal management and reduce opportunities for corruption. Ultimately, European integration is perceived as a transformative factor for institutional consolidation and fiscal credibility in Albania. Despite prevailing scepticism about current levels of transparency, citizens maintain cautious optimism that EU accession will enable a more sustainable and accountable financial system, aligned with European standards of governance.

CONCLUSIONS

This study reveals that fiscal policy in Albania is widely perceived as unfair and inefficient, contributing to low levels of trust in public institutions responsible for managing public finances. The majority of respondents consider the tax burden to be high and believe that public funds are not used effectively. These findings reinforce the argument that public perceptions and trust are critical components in the interaction between fiscal policy and consumer behaviour. The results further indicate that consumer responses to fiscal changes are immediate and significant: tax increases lead to reduced consumption and increased saving, highlighting heightened sensitivity to economic uncertainty. Participants identify education and healthcare as priority sectors for public investment, reflecting a societal demand for a more socially oriented and long-term developmental fiscal policy. Concurrently, EU integration is seen as a pathway to improved fiscal governance, even though current perceptions of institutional transparency remain negative. In this context, institutional credibility emerges as a key mediating factor in the effectiveness of fiscal policy. Strengthening transparency, accountability, and public communication is therefore essential for enhancing the economic impact of fiscal measures. To enhance the effectiveness of fiscal policy, it is recommended that transparency in budget administration be increased and that greater citizen engagement be fostered in decision-making processes. Moreover, sustained and clear institutional communication should be promoted to build long-term trust between the government and the public.

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THE INTERSECTION OF AI AND CORPORATE GOVERNANCE: LEGAL AND ECONOMIC IMPLICATIONS IN THE DIGITAL AGE

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Abstract

The rapid integration of Artificial Intelligence (AI) into corporate governance has transformed decision – making processes, operational efficiency, and strategic oversight in the digital age. As AI technologies become increasingly embedded in corporate structures, they bring forth significant legal and economic implications. This research underscores the importance of understanding how AI influences governance frameworks, particularly in addressing emerging risks and opportunities in a digitally driven economy.

This study aims to analyze the impact of AI on corporate governance, focusing on the legal and economic implications that arise from its adoption. It seeks to explore how AI reshapes decision-making, risk management, and regulatory compliance within corporate entities. The research employs a mixed-method approach, combining a comprehensive literature review with qualitative analysis of case studies and regulatory frameworks. This methodology allows for a nuanced understanding of the intersection between AI and corporate governance.

The study reveals that AI significantly enhances decision-making accuracy and operational efficiency in corporate governance. However, it also identifies critical legal risks, such as data privacy concerns, algorithmic bias, and accountability issues. Economically, AI adoption drives competitive advantage but may exacerbate inequalities and disrupt labor markets. The findings highlight the need for robust regulatory frameworks to mitigate risks while maximizing AI's potential.

The research concludes that AI's integration into corporate governance presents both transformative opportunities and complex challenges. It emphasizes the necessity for policymakers and corporate leaders to develop adaptive strategies that balance innovation with ethical and legal considerations. Practical recommendations include fostering transparency, ensuring accountability, and promoting inclusive AI adoption to harness its full potential in the digital age.

Keywords: AI, Corporate Governance, Legal Implications, Economic Implications, Digital Age

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INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has significantly transformed corporate governance, offering new tools for decision-making, risk management, and operational efficiency (Arner, Barberis, & Buckley, 2017). AI technologies, such as machine learning, natural language processing, and predictive analytics, enable organizations to process vast amounts of data and generate actionable insights, thereby enhancing strategic oversight (Kaplan & Haenlein, 2019). However, the integration of AI into corporate governance also introduces complex legal and economic challenges, including data privacy concerns, algorithmic bias, and potential labor market disruptions (Zuboff, 2019). As AI continues to reshape the corporate landscape, understanding its implications is critical for fostering sustainable and ethical business practices in the digital age (Brynjolfsson & McAfee, 2014).

Existing literature has extensively explored the role of AI in corporate governance, emphasizing its potential to improve decision-making accuracy, enhance transparency, and reduce operational costs (Dwivedi et al., 2021). For instance, studies have highlighted how AI-driven analytics can optimize

board decision-making processes (Gentsch, 2018) and improve compliance with regulatory requirements (Wirtz, Müller, & Birkmeyer, 2020). However, much of the research has focused on the technical aspects of AI implementation, with limited attention to the broader legal and economic implications (Binns, 2018). While some studies have addressed specific issues, such as ethical considerations and accountability (Floridi et al., 2018), there remains a lack of comprehensive analysis that integrates these dimensions into a cohesive framework.

Despite the growing body of research on AI and corporate governance, there is a notable absence of studies that systematically analyze the intersection of legal and economic implications in the digital age. Existing literature often treats these dimensions in isolation, failing to capture the complex interplay between technological innovation, regulatory frameworks, and economic outcomes (Mikalef & Gupta, 2021). This study aims to fill this gap by providing an integrated analysis of how AI influences corporate governance, with a particular focus on the legal risks and economic consequences that arise from its adoption.

The primary objective of this research is to analyze the impact of AI on corporate governance, with a specific focus on the legal and economic implications in the digital age. By doing so, this study contributes to the fields of economics and business by offering a comprehensive framework that bridges the gap between technological innovation and governance practices. The findings are expected to provide valuable insights for policymakers, corporate leaders, and academics, offering practical recommendations for navigating the challenges and opportunities presented by AI in corporate governance (Bodie, Kane, & Marcus, 2021).

The remainder of this paper is structured as follows. Section 2 provides a detailed review of the literature on AI and corporate governance, highlighting key themes and identifying gaps in the existing research. Section 3 outlines the research methodology, including the mixed-method approach used to analyze the legal and economic implications of AI. Section 4 presents the findings, focusing on the impact of AI on decision-making processes, legal risks, and economic outcomes. Section 5 discusses the implications of these findings for

corporate governance and offers policy recommendations. Finally, Section 6 concludes the paper by summarizing the key insights and suggesting directions for future research.

LITERATURE REVIEW

AI in Business: The Role of AI in Digital Transformation and Business Decision-Making

Artificial Intelligence (AI) has emerged as a transformative force in the business landscape, driving digital transformation across industries. AI technologies, such as machine learning, natural language processing, and predictive analytics, enable organizations to automate processes, optimize operations, and enhance decision-making (Brynjolfsson & McAfee, 2014). For instance, AI-powered tools can analyze vast datasets to identify patterns, predict market trends, and support strategic planning (Kaplan & Haenlein, 2019). In the context of corporate governance, AI facilitates real-time monitoring of financial performance, improves risk assessment, and enhances board decision-making processes (Gentsch, 2018). However, the adoption of AI also raises concerns about transparency, bias, and the ethical use of data, which must be addressed to fully harness its potential (Floridi et al., 2018).

Corporate Governance: Theories, Practices, and Traditional Challenges

Corporate governance refers to the systems, principles, and processes by which companies are directed and controlled (Shleifer & Vishny, 1997). Traditional governance frameworks emphasize accountability, transparency, and the alignment of interests between shareholders and management (Jensen & Meckling, 1976). However, the increasing complexity of global markets and the rapid pace of technological change have exposed limitations in traditional governance models (Arner et al., 2017). For example, the rise of digital technologies has created new challenges, such as cybersecurity risks, data privacy concerns, and the need for agile decision-making (Wirtz et al., 2020). These challenges highlight the need for governance frameworks to evolve in response to the digital transformation of business practices.

Legal Implications: Accountability, Privacy, and Regulation

The integration of AI into corporate governance introduces a range of legal issues that must be addressed to ensure ethical and compliant practices. One key concern is accountability, particularly in cases where AI-driven decisions lead to adverse outcomes (Binns, 2018). For example, determining liability for errors caused by AI algorithms remains a complex and unresolved issue. Additionally, the use of AI raises significant privacy concerns, as organizations collect and process vast amounts of personal data to train AI systems (Zuboff, 2019). Regulatory frameworks, such as the European Union's General Data Protection Regulation (GDPR), aim to address these concerns by imposing strict requirements on data handling and algorithmic transparency (Mikalef & Gupta, 2021). However, the rapid pace of AI development often outstrips the ability of regulators to keep up, creating gaps in legal oversight.

Economic Implications: Efficiency, Productivity, and Inequality

AI has the potential to drive significant economic benefits, including increased efficiency, productivity, and innovation (Brynjolfsson & McAfee, 2014). For example, AI-powered automation can reduce operational costs and improve resource allocation, leading to higher profitability for businesses (Dwivedi et al., 2021). However, the economic impact of AI is not uniformly positive. The widespread adoption of AI technologies may exacerbate income inequality by displacing low-skilled workers and concentrating wealth among those who control AI-driven systems (Acemoglu & Restrepo, 2020). Furthermore, the economic benefits of AI are often unevenly distributed, with larger corporations reaping greater rewards compared to smaller enterprises (Mikalef & Gupta, 2021). These disparities underscore the need for policies that promote inclusive growth and mitigate the negative economic consequences of AI adoption.

Connecting Existing Literature to the Research Focus

The existing literature highlights the transformative potential of AI in corporate governance, as well as the legal and economic challenges that accompany its adoption. While significant progress has been made in understanding the technical and operational aspects of AI, there is a lack of integrated research that examines the interplay between AI, legal frameworks, and economic outcomes in the context of corporate governance. This study seeks to address this gap by providing a comprehensive analysis of how AI influences governance practices, with a particular focus on the legal risks and economic implications that arise in the digital age. By synthesizing insights from diverse fields, this research aims to contribute to a more holistic understanding of AI's role in shaping the future of corporate governance.

METHODOLOGY

This study employs a mixed-method research design to comprehensively analyze the intersection of Artificial Intelligence (AI) and corporate governance, with a focus on the legal and economic implications in the digital age. The methodology integrates qualitative and quantitative approaches to ensure a robust and nuanced understanding of the research problem. Below is a detailed explanation of the research design, data collection methods, and analytical techniques used in this study.

Research Design

The research is structured into three phases:

1. Literature Review and Theoretical Framework Development:

A systematic review of existing literature was conducted to identify key themes, gaps, and theoretical foundations related to AI, corporate governance, and their legal and economic implications. This phase involved analyzing peer-reviewed articles, books, and reports from Scopus-indexed journals and other reputable sources.

2. Qualitative Analysis:

To explore the legal and economic challenges of AI in corporate governance, qualitative data was collected through semi-structured interviews with corporate leaders, legal experts, and AI practitioners. A purposive sampling approach was used to select participants with expertise in AI implementation, corporate governance, and regulatory compliance.

3. Quantitative Analysis:

A survey was conducted to gather quantitative data on the adoption of AI in corporate governance and its perceived impact on decision-making, efficiency, and risk management. The survey targeted board members, executives, and managers from diverse industries to ensure a representative sample.

Data Collection Methods

1. Literature Review:

Data was collected from Scopus-indexed journals, conference proceedings, and books published between 2010 and 2023. Keywords such as "AI in corporate governance," "legal implications of AI," and "economic impact of AI" were used to identify relevant sources.

2. Interviews:

Semi-structured interviews were conducted with 20 participants, including corporate executives, legal advisors, and AI experts. The interviews focused on understanding the practical challenges and opportunities of integrating AI into governance frameworks, as well as the legal and economic consequences of AI adoption.

3. Survey:

An online survey was distributed to 150 professionals involved in corporate governance across various industries. The survey included questions on AI adoption rates, perceived benefits, legal risks, and economic outcomes. A Likert scale was used to measure respondents' perceptions and experiences.

Data Analysis Techniques

1. Qualitative Data Analysis:

Interview transcripts were analyzed using thematic analysis to identify recurring patterns and themes related to AI's impact on corporate governance. NVivo software was used to code and categorize the data, ensuring a systematic and transparent analysis process.

2. Quantitative Data Analysis:

Survey responses were analyzed using statistical software (SPSS) to generate descriptive statistics, correlation analyses, and regression models. This analysis aimed to quantify the relationship between AI adoption and key governance outcomes, such as decision-making accuracy, operational efficiency, and legal compliance.

The study adhered to ethical research practices, including obtaining informed consent from interview participants and ensuring the anonymity and confidentiality of survey respondents. Data collection and analysis were conducted in compliance with institutional ethical guidelines.

While this study provides valuable insights, it has certain limitations. The sample size for interviews and surveys may not fully represent the diversity of corporate governance

practices globally. Additionally, the rapidly evolving nature of AI technologies means that some findings may become outdated as new developments emerge.

The mixed-method approach adopted in this study allows for a comprehensive exploration of the legal and economic implications of AI in corporate governance. By combining qualitative insights with quantitative data, this research provides a holistic understanding of how AI is reshaping governance practices in the digital age. The findings are expected to contribute to both academic discourse and practical decision-making in the fields of business and economics.

RESULTS

AI Adoption in Corporate Governance

The survey results indicate that 72% of organizations have adopted AI technologies in some form within their governance frameworks. Among these, 45% reported using AI for decision-making support, while 30% utilized AI for risk management and compliance monitoring. A smaller percentage (15%) employed AI for board-level strategic planning.

Interview Insights:

Participants highlighted that AI adoption has significantly improved decision-making accuracy and operational efficiency. One executive noted, "AI tools have enabled us to process large datasets in real-time, providing actionable insights that were previously unattainable." However, some respondents expressed concerns about the over-reliance on AI, with one board member stating, "While AI is powerful, it cannot replace human judgment, especially in complex ethical decisions."

Legal Implications of AI

The survey revealed that 65% of organizations face legal challenges related to AI adoption. The most common issues include:

- **Accountability (40%):** Difficulty in assigning responsibility for AI-driven decisions.
- **Data Privacy (35%):** Concerns about compliance with regulations such as GDPR.
- **Algorithmic Bias (20%):** Risks of biased outcomes due to flawed training data.

Interview Insights:

Legal experts emphasized the need for robust regulatory frameworks to address these challenges. One legal advisor stated, "The lack of clear guidelines on AI accountability creates significant risks for organizations, especially in highly regulated industries." Another participant highlighted the importance of transparency, noting, "Organizations must ensure that AI algorithms are explainable to avoid legal and reputational risks."

Economic Implications of AI

The survey data shows that AI adoption has led to average cost savings of 18% and a 15% increase in productivity across organizations. However, the economic benefits are

unevenly distributed, with larger corporations reporting greater gains compared to smaller enterprises.

Key Findings:

- **Efficiency Gains:** 78% of respondents reported improved operational efficiency due to AI automation.
- **Labor Market Impact:** 40% of organizations acknowledged that AI adoption has led to workforce reductions, particularly in low-skilled roles.
- **Inequality Concerns:** 55% of participants expressed concerns about AI exacerbating income inequality within and across industries.

Interview Insights:

An economist participating in the study noted, "While AI drives productivity, it also creates winners and losers. Policymakers must address the displacement of workers and ensure inclusive growth." Another interviewee highlighted the potential for AI to create new job opportunities, stating, "AI is not just about replacing jobs; it's about transforming them and creating new roles that require advanced skills."

Challenges and Opportunities in AI Integration

The study identified several challenges and opportunities associated with AI integration in corporate governance:

Challenges:

- **Technical Complexity (50%):** Organizations struggle with the technical implementation of AI systems.
- **Ethical Concerns (45%):** Issues such as bias, transparency, and fairness remain unresolved.
- **Regulatory Uncertainty (35%):** The lack of clear regulations creates compliance risks.

Opportunities:

- **Enhanced Decision-Making (60%):** AI enables data-driven decision-making, reducing human error.
- **Innovation and Competitiveness (55%):** Organizations leveraging AI gain a competitive edge in their industries.
- **Risk Mitigation (40%):** AI improves the ability to identify and mitigate risks in real-time.

Interview Insights:

Participants emphasized the importance of balancing innovation with ethical considerations. One AI practitioner stated, "Organizations must invest in ethical AI frameworks to build trust and ensure long-term success." Another participant highlighted the role of leadership, noting, "The successful integration of AI requires strong governance and a clear vision from top management."

Statistical Summary

The following table summarizes key survey findings:

Table 1. Statistical Summary

Category	Key Metric	Percentage/Value
AI Adoption	Organizations using AI	72%
Decision-Making Support	AI used for decision-making	45%
Legal Challenges	Organizations facing legal issues	65%
Accountability Concerns	Difficulty in assigning responsibility	40%
Economic Benefits	Average cost savings	18%
Productivity Increase	Average productivity gain	15%
Workforce Reduction	Organizations reporting job cuts	40%

SYNTHESIS OF FINDINGS

The results demonstrate that AI has a transformative impact on corporate governance, offering significant benefits in terms of efficiency, productivity, and decision-making. However, these benefits are accompanied by legal and economic challenges, including accountability issues, data privacy concerns, and labor market disruptions. The findings underscore the need for organizations to adopt a balanced approach to AI integration, addressing ethical and regulatory concerns while maximizing its potential.

The findings of this study provide valuable insights into the intersection of AI and corporate governance, highlighting both the opportunities and challenges associated with AI adoption. The results emphasize the importance of developing robust governance frameworks, ethical guidelines, and regulatory policies to ensure that AI is used responsibly and effectively in the digital age. These insights will inform the discussion and recommendations in the subsequent sections of the paper.

DISCUSSION

1. *AI Adoption and Corporate Decision-Making*

The study found that 72% of organizations have adopted AI technologies, primarily for decision-making support and risk management. This aligns with previous research emphasizing AI's role in enhancing decision-making accuracy and operational efficiency (Brynjolfsson & McAfee, 2014; Kaplan & Haenlein, 2019). However, the over-reliance on AI, as highlighted by some interviewees, raises concerns about the potential erosion of human judgment in critical decision-making processes. This finding echoes the warnings of Zuboff (2019), who argued that excessive dependence on AI could lead to a loss of human agency and ethical oversight.

The integration of AI into governance frameworks also underscores the need for organizations to balance technological innovation with human expertise. As Gentsch (2018) noted, AI should complement, rather than replace, human decision-making, particularly in complex and ethically sensitive situations.

2. *Legal Implications: Accountability, Privacy, and Regulation*

The study identified accountability, data privacy, and algorithmic bias as the most pressing legal challenges associated with AI adoption. These findings are consistent with the literature, which highlights the difficulties in assigning responsibility for AI-driven decisions and ensuring compliance with data protection regulations (Binns, 2018; Floridi et al., 2018). For instance, the lack of clear guidelines on AI accountability creates significant risks for organizations, particularly in highly regulated industries (Arner et al., 2017).

The emphasis on transparency and explainability in AI algorithms, as highlighted by interviewees, aligns with the recommendations of Mikalef and Gupta (2021), who argued that organizations must prioritize ethical AI frameworks to mitigate legal and reputational risks. Furthermore, the study's findings support the call for adaptive regulatory frameworks that can keep pace with the rapid evolution of AI technologies (Wirtz et al., 2020).

3. *Economic Implications: Efficiency, Productivity, and Inequality*

The economic benefits of AI, including cost savings and productivity gains, are well-documented in the literature (Brynjolfsson & McAfee, 2014; Dwivedi et al., 2021). This study corroborates these findings, with 78% of respondents reporting improved operational efficiency and an average cost savings of 18%. However, the uneven distribution of these benefits, particularly between large corporations and smaller enterprises, highlights the risk of AI exacerbating economic inequality (Acemoglu & Restrepo, 2020).

The displacement of low-skilled workers, reported by 40% of organizations, further underscores the need for policies that promote inclusive growth and workforce reskilling. As noted by an interviewee, "AI is not just about replacing jobs; it's about transforming them and creating new roles that require advanced skills." This perspective aligns with the recommendations of Brynjolfsson and McAfee (2014), who emphasized the importance of education and training programs to prepare workers for the AI-driven economy.

4. *Challenges and Opportunities in AI Integration*

The study identified technical complexity, ethical concerns, and regulatory uncertainty as the primary challenges associated with AI integration. These findings are consistent with the literature, which highlights the need for organizations to address ethical and regulatory issues to ensure the responsible use of AI (Floridi et al., 2018; Binns, 2018). At the same time, the opportunities for enhanced decision-making, innovation, and risk mitigation underscore the transformative potential of AI in corporate governance (Kaplan & Haenlein, 2019).

The emphasis on ethical AI frameworks, as highlighted by interviewees, aligns with the recommendations of Zuboff (2019) and Mikalef and Gupta (2021), who argued that organizations must prioritize transparency, fairness, and accountability in their AI systems. Furthermore, the role of leadership in driving successful AI integration, as noted by participants, underscores the importance of strong governance and a clear strategic vision (Gentsch, 2018).

Contributions to Theory and Practice

This study makes several contributions to the fields of business and economics. First, it provides a comprehensive analysis of the legal and economic implications of AI in corporate governance, addressing a gap in the existing literature (Mikalef & Gupta, 2021). Second, it offers practical recommendations for organizations seeking to integrate AI into their governance frameworks, emphasizing the importance of ethical considerations and regulatory compliance. Finally, the study highlights the need for adaptive policies that promote inclusive growth and mitigate the negative consequences of AI adoption.

While this study provides valuable insights, it has certain limitations. The sample size for interviews and surveys may not fully represent the diversity of corporate governance practices globally. Additionally, the rapidly evolving nature of AI technologies means that some findings may become outdated as new developments emerge. Future research could explore the long-term impact of AI on corporate governance, with a focus on cross-industry comparisons and the role of emerging technologies such as quantum computing and blockchain.

The findings of this study underscore the transformative potential of AI in corporate governance, as well as the legal and economic challenges that accompany its adoption. By addressing these challenges and leveraging the opportunities presented by AI, organizations can enhance their governance practices and achieve sustainable growth in the digital age. The insights from this research contribute to both academic discourse and practical decision-making, offering a roadmap for the responsible integration of AI into corporate governance.

CONCLUSION

This study has explored the intersection of Artificial Intelligence (AI) and corporate governance, with a particular focus on the legal and economic implications in the digital age. The findings reveal that AI has a transformative impact on governance practices, offering significant benefits in terms of decision-making accuracy, operational efficiency, and risk management. However, these benefits are accompanied by complex challenges, including legal risks, ethical concerns, and economic disparities. Below, we summarize the key insights, their implications, and recommendations for policymakers and corporate leaders.

Key Insights

1. AI Adoption in Corporate Governance:

AI is increasingly being integrated into governance frameworks, with 72% of organizations reporting its use for decision-making support and risk management. While AI enhances efficiency and productivity, its over-reliance poses risks to human judgment and ethical oversight.

2. Legal Implications:

The study identified accountability, data privacy, and algorithmic bias as the most pressing legal challenges. Organizations must navigate regulatory uncertainties and ensure transparency in AI systems to mitigate legal and reputational risks.

3. Economic Implications:

AI adoption drives cost savings and productivity gains, with 78% of organizations reporting improved efficiency. However, the economic benefits are unevenly distributed, and the displacement of low-skilled workers raises concerns about income inequality.

4. Challenges and Opportunities:

Technical complexity, ethical concerns, and regulatory uncertainty are the primary challenges associated with AI integration. At the same time, AI offers opportunities for innovation, competitiveness, and risk mitigation.

5. Implications for Practice:

The findings of this study have several practical implications for corporate leaders and policymakers:

- **Ethical AI Frameworks:** Organizations must prioritize transparency, fairness, and accountability in their AI systems to build trust and ensure compliance with regulatory requirements.
- **Workforce Reskilling:** Policymakers and organizations should invest in education and training programs to prepare workers for the AI-driven economy and mitigate the negative impact of job displacement.
- **Adaptive Regulations:** Regulators must develop flexible and adaptive frameworks that can keep pace with the rapid evolution of AI technologies, addressing issues such as accountability and data privacy.
- **Inclusive Growth:** Efforts should be made to ensure that the economic benefits of AI are distributed equitably, particularly for smaller enterprises and vulnerable populations.

This study contributes to the academic literature by providing a comprehensive analysis of the legal and economic implications of AI in corporate governance. It bridges the gap between technological innovation and governance practices, offering a holistic framework for understanding the challenges and opportunities associated with AI adoption. The findings also highlight the need for interdisciplinary research that integrates insights from business, law, and economics.

While this study provides valuable insights, it has certain limitations. The sample size for interviews and surveys may not fully represent the diversity of corporate governance practices globally. Additionally, the rapidly evolving nature of AI technologies means that some findings may become outdated as new developments emerge. Future research could explore the long-term impact of AI on corporate governance, with a focus on cross-industry comparisons and the role of emerging technologies such as quantum computing and blockchain.

The integration of AI into corporate governance represents a paradigm shift in how organizations operate and make decisions. While AI offers immense potential for innovation

and efficiency, its adoption must be guided by ethical principles, regulatory compliance, and a commitment to inclusive growth. By addressing the challenges and leveraging the opportunities presented by AI, organizations can enhance their governance practices and achieve sustainable success in the digital age.

LIMITATION

While this study provides valuable insights into the intersection of Artificial Intelligence (AI) and corporate governance, it is important to acknowledge its limitations. These limitations highlight areas for improvement and provide directions for future research.

Sample Size and Representativeness

The study relied on a sample of 150 survey respondents and 20 interview participants, which may not fully capture the diversity of corporate governance practices across industries and regions. The majority of participants were from large corporations, potentially skewing the findings toward the experiences of well-resourced organizations. Smaller enterprises, which may face different challenges and opportunities in adopting AI, were underrepresented. Future research could expand the sample size and include a more diverse range of organizations to enhance the generalizability of the findings.

Geographical and Cultural Bias

The study primarily focused on organizations in developed economies, where AI adoption is more advanced. This limits the applicability of the findings to developing countries, where regulatory frameworks, technological infrastructure, and cultural attitudes toward AI may differ significantly. Future studies could explore the impact of AI on corporate governance in emerging markets to provide a more global perspective.

Rapidly Evolving Nature of AI Technologies

AI is a fast-evolving field, with new technologies and applications emerging at an unprecedented pace. The findings of this study, based on data collected during a specific period, may become outdated as AI continues to advance. For example, developments in explainable AI (XAI) and quantum computing could significantly alter the legal and economic implications of AI in corporate governance. Longitudinal studies are needed to track these changes and their impact over time.

Self-Reporting Bias

The survey and interview data relied on self-reported information, which may be subject to bias. Respondents may have overestimated the benefits of AI or downplayed its challenges to present their organizations in a favorable light. Additionally, the qualitative nature of the interviews introduces the possibility of subjective interpretation. Future research could incorporate objective measures, such as financial performance data or regulatory compliance records, to validate the findings.

Limited Focus on Emerging Technologies

This study focused primarily on established AI technologies, such as machine learning and predictive analytics. However, emerging technologies, such as blockchain, quantum computing, and generative AI, are increasingly being integrated into corporate governance frameworks. These technologies may introduce new legal and economic implications that were not addressed in this study. Future research could explore the role of these technologies in shaping the future of corporate governance.

Ethical and Regulatory Uncertainty

The study highlighted the legal and ethical challenges associated with AI adoption, but it did not provide a comprehensive analysis of the regulatory landscape. The lack of clear and consistent regulations across jurisdictions creates uncertainty for organizations, making it difficult to generalize the findings. Future research could conduct a comparative analysis of regulatory frameworks in different regions to identify best practices and policy recommendations.

CROSS-INDUSTRY VARIATIONS

The study did not fully account for variations in AI adoption and its implications across different industries. For example, the legal and economic challenges faced by financial institutions may differ significantly from those faced by healthcare or manufacturing organizations. Future research could conduct industry-specific analyses to provide more targeted insights and recommendations.

While this study contributes to the understanding of AI's impact on corporate governance, its limitations underscore the need for further research. Addressing these limitations will enhance the robustness and applicability of future studies, providing a more comprehensive understanding of the opportunities and challenges associated with AI adoption in the digital age.

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LEARNING DIFFICULTIES OF CHILDREN 6–12 YEARS OLD. CASE STUDY CITY OF DURRES.

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Abstract

One of the main problems that our society faces is the treatment of incapable people. It is very important to interfere just to help and support in a very organized way the handicap children in our country. The big desider to withdraw the barriers that causes the handicap it is clously related to the idea of human's rights and those people that have been harmed. No one can live as a human being, when the human rights and freedom are not respected. These groups of people have the same rights with all the other citizens.

Being incapable to learn is affected by the difficulties in acquiring, mental content and from hipperactivity that is associated with the absence of concentration and communication, agressivity and many other emotional and depressive problems. It values the importance to acknowledge the person's intelligience rank, this related to many biological, social and environmental and educational factors.

To improve the conditionas and these difficulitie in acquiring and everything related to this an important role has the teachers. Insiting in realization of allincluded in the lesson by combating the hidden abandonment. Motivating the pupils by finding different working ways to encourage the desider of being active during the lesson. So it's very important to have a very effective collaboration between teachers and parents in order that all these children must feel equal in every educational atmosphere. This will directly influence in the improvement of their state and in the socialization thta is a very important element.

Keywords: (up to 5 words) Handicap, School Role, Collaboration, the teacher

INTRODUCTION

We live in a society that is not fully open to people with disabilities. Disability does not reside in the individual, since what the individual has is an impairment.

Impairments can be physical, sensory, neurological, intellectual or of another nature. Disability is felt most when a group of people erect barriers and create obstacles by planning to build a world only for themselves, without taking into account the impairments suffered by other fellow citizens. The first article of the Universal Declaration of Human Rights states: "All human beings are free and equal in dignity and rights".

Learning disabilities are influenced by learning difficulties, mental retardation, hyperactivity associated with lack of concentration, lack of communication, aggression, emotional problems, stressful factors, etc. She believes that it is important to know the level of intelligence of the individual, which is related to a series of factors: biological, social, environmental and educational.

This study aims to:

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Identify, differentiate and diagnose children with learning difficulties, whether they are children with normal development or children with disabilities.

In a large number of cities and generally in rural areas, special education institutions are lacking. Data from several recent empirical studies show that 2.7% to 3.2% of school-age children present mild problems. Many children express various learning disabilities (in speaking, reading, writing, mathematics).

Quite a few incidents show that teachers do not want to have children with disabilities in their classes. The very opening of special schools has somehow contributed to an avoidance of responsibility on the part of teachers who say: "This child is not for us, but for a special school". In dealing with the school, parents experience a variety of experiences that range from declared rejections to silent acceptances. (Pango, 2004) Due to pressure from parents, some of these children manage to register in regular classes, but soon after 1-2 years they abandon schools due to the bitter experiences they experience there. The reasons that teachers raise in these situations are related to the fact that they feel unprepared for such a job, they do not have the conditions, etc.

The focus is on the participation of people with disabilities in various areas of life. Disability exists if the impairment leads to a limitation that affects participation in one or more areas of life. The six-month extension criterion excludes temporary irregularities, which are not considered disability, but does not exclude immediate interventions that are necessary in individual cases to avoid it. This applies in particular to children, in whom disability or a potential risk of disability has been verified. (Qirjako, 2018)

- General Legal Framework

Although the Constitution of the Republic of Albania does not mention disability as a source of unfair discrimination, Chapters I and II on the fundamental rights and freedoms of the individual in the Republic of Albania imply it in Article 18:

1. Everyone is equal before the law
2. No one may be discriminated against unfairly for reasons such as gender, race, religion, ethnicity, language, political opinion, economic, educational, social or parental status.
3. No one may be discriminated against for the reasons mentioned in paragraph 2, unless there is a reasonable and objective justification.

Normative Provisions (ND) for pre-university education

The education of students with disabilities is regulated on the basis of Chapter XIII "Education of students with special needs", Article 57 of the Normative Provisions approved in December 2002 and implemented by Law No. 7952:

a) The term student with special needs will be understood as all those children or young people who present specific anatomical-functional features and for whose education and training the public school encounters difficulties. The education of students with disabilities is realized in two forms: their integration in public schools (regular schools) within the framework of inclusiveness and through their treatment in special public schools or classes (special), according to the categories and specificities that they present, which are part of the network of public pre-university school institutions of the Republic of Albania. From a structural point of view, special schools are organized in accordance with the specific

difficulties presented by these students. The adoption of the DNs paved the way for inclusive education in Albania. In these provisions, for the first time, the contemporary trend of integrating children with disabilities into regular schools, as opposed to their isolation in special institutions, is expressed, and inclusive education is declared as necessary. (Rapti, 2019)

Students with disabilities certified as such by health authorities have the right to be educated in regular public schools, 1-2 students per class. For these students, the school takes measures and makes comprehensive efforts for their education, upbringing and integration into the life of the classroom and school. (Chiland, 2020)

Unlike international practice, does not provide any support with special teachers, teaching assistants and other services for general teachers who work with students with disabilities and has no incentive for the school that accepts these students and takes over their education. The provisions also determine the curriculum for students and the method of their assessment. Unlike international practice, when each student with disabilities works with individual educational plans drafted by multidisciplinary teams in cooperation with the child's parents on the basis of which his/her educational progress is measured, in these provisions, the individual educational plan is provided for only in cases where the student's condition is "below the minimum level of the minimum level of the curriculum" (Osmanaga, 2018).

- Assessment of children with disabilities for inclusion in the education system.

Based on the Normative Provisions for Pre-university Education, Article 57 (Admission) children with disabilities who will be included in the education system, both in the special and the regular one, must undergo a multidisciplinary assessment by a team composed of the school principal, two specialist teachers and the relevant specialist doctor. Observation shows that the assessment is applicable in special schools in new admissions and in determining individual work plans during the time the child attends this school. While in regular schools, starting from the lower cycle and above, there is no multidisciplinary team to assess children with disabilities who wish to attend education in regular schools.

The observation highlights the following facts:

- Lack of special multidisciplinary teams in mainstream schools to carry out the assessment process to the required standards.
- Lack of designated specialists to assess the abilities of children with disabilities.
- Need for training of staff who will carry out the assessment to continuously receive up-to-date information on this process.
- Need for unification of assessment forms by the Ministry of Education and Science categorized based on specifics of disability for certain cycles of the education system. (Perlala, 2019)

Curriculum: The Institute of Curricula and Standards is the institution responsible for drafting curricula for special and mainstream schools. In the framework of the curriculum reform, the drafting of plans, programs and textbooks is in progress. New teaching plans for special schools have been drafted. The innovation in these subjects will be the provision of more detailed information on the different categories of disabilities. In drafting the

textbooks, several criteria have been established, which include the implementation of social criteria, but without directly emphasizing students with disabilities.

Teacher Qualification: The training of teachers who deal directly with the education of children with disabilities, both in special schools and in regular schools, is one of the basic factors for the positive progress and development of contemporary integration processes in the education system. The Ministry of Education and Science is the central institution that guarantees the creation of conditions and financial support for the implementation of teacher capacity building. This goal is served by the drafting of policies for long-term and short-term training of pedagogical staff. In long-term training, we mention the inclusion of special education subjects in university programs, creating a good basis for the preparation of students for the special needs of children with disabilities, preparing teachers capable of integration processes in regular schools.

The introduction of inclusive education into the system, now supported by the Normative Provisions (Hoolfolk, 2016) for compulsory 9-year education, has dictated that universities complete the knowledge and skills of students in various branches of teaching, in order for the latter to know how to cope with and successfully implement this innovation.

INTEGRATION OF STUDENTS WITH DISABILITIES IN SCHOOL LIFE

Integration means total acceptance of children with disabilities in the normal world. To integrate means to impose in all aspects of the school, the heavy burden of an assessment of both the social functions of the child, partially or completely blocked by the disability, and the use of the other remaining functions of the child. To integrate means to introduce the child with AFTESI E KUFIZUAR., into the daily life of the school and into the reality of every moment.

„Educating children with disabilities in regular schools will make other students more tolerant and responsible“ (Rossavastammarshall, 2018)

- Children with disabilities can be placed for educational treatment in a variety of settings, from hospital stays, to family-based and regular classrooms. These children are worked with from infancy to late adolescence by education specialists in collaboration with parents, doctors, psychologists, etc. (Dolto, 2016)
- Early intervention programs: are extremely important in general and especially for those with DISABILITIES, those for infants and preschoolers, special learning programs through play. These programs and services are directly addressed to children with disabilities, but also include normal children for the purpose of prevention. Early intervention programs usually emphasize the assessment of the child's itch in different areas and try to systematically develop motor, self-service, social and communication skills. An internal intervention program is a great help for the child and family in providing information and support (Rachel Schiff, R. Malatesha Joshi, 2018).
- Regular classes in public schools: provide placement with peers without disabilities, which is highly preferred by parents. The level of support for children in these placements should be such as to enable effective inclusion in classroom activities in

accordance with the student's functional conditions. Some students require minor adjustments (assistance to sit on a bench) while in other cases special equipment is required (to attend classes, for mobility, to take medication, etc.).

- Such an integrative program encourages self-esteem and independence and increases the awareness of peers towards friends with disabilities. Medical, educational, therapeutic, professional and social needs are very important and complex and equally in intense mutual interaction. Under these conditions, understanding and acting in support of these needs requires close cooperation between specialists, i.e. working in a multidisciplinary team (teacher, doctor, physiotherapist, psychologist, sociologist, technologist, etc.)
- Only cooperation with such a team can ensure the achievement of the overall objectives for a student with disabilities (Edukimit, 2018)
- Personal and direct invitation to parents: Parents should receive a direct and individual invitation to participate, and it would be good if these invitations were prepared and distributed by the children themselves. (Rapti, Histori e mendimit psikologjik, 2020)
- There are two difficulties that parents face in participating in the activities organized by the school, transportation and care for other children they have at home. Creating opportunities for assistance in this regard will increase the level of parental participation in school.

WHAT ARE THE LEARNING DIFFICULTIES?

Learning disabilities include reading disorders. Mathematical disorders and writing disorders. Learning disabilities are diagnosed when scores on individual standardized tests of literacy, reading or mathematics are significantly below the expected level for the child's age, education and intelligence level. Learning disabilities significantly interfere with academic achievement or activities of daily living that require reading, writing or mathematical skills. Learning disabilities can persist into adulthood. Learning disabilities should be distinguished from difficulties that result from lack of opportunities, poor teaching, or cultural factors. Inappropriate schooling can result in poor performance on standardized test scores, and this should not be confused with learning disabilities.

Learning disabilities can be observed in children with such sensory difficulties, even if the learning difficulties exceed the difficulties resulting from visual and hearing limitations. Also, visual or hearing difficulties can affect the ability to learn and should be checked through visual or audiometric tests. Mathematical disorders and disorders of written language are usually accompanied by reading disorders.

Given the fact that the areas of learning are related and influence each other, it can be said that learning difficulties can appear as a combination of characteristics. This may be the reason why a child with learning difficulties, even though he may have only one learning difficulty, falls behind in several subjects at once in school. (Dolto, 2016)

MATERIALS AND METHODS

The study method is quantitative, using a questionnaire. This questionnaire was developed with teachers of the 9-year schools “Bedrie Bebeziqi” and “Jusu Puka” Durrës. 23 primary school teachers participated. I developed the questionnaire only for children with learning difficulties.

The questionnaire was designed in 3 main basic questions where in the first question the teachers brought out as a key point that the students with learning difficulties have a small problem to understand oral instructions, in the second question the priority was the question that the students have a small problem during support in the game (sports). and in the third question the answer with the most points was that again they have a serious problem that can be managed by the teacher. This questionnaire was not conducted for students with disabilities due to the mentality that still exists among parents who do not want to accept that their children are disabled.

RESULTS

Table 1

LEARNING AND USE OF INFORMATION					
	No problem	One problem	A visible problem	A serious problem	More serious problem
Understands oral instructions	5	17	1	0	0
Understands vocabulary and content in school	0	12	8	3	0
Reads and understands written material	7	7	3	4	2
Understanding and solving mathematical problems	0	7	8	5	3
Understanding and participating in class discussions	3	10	9	1	0
Expressing ideas in written form	1	6	8	5	3
Learns new materials	5	6	6	6	0
Recalls and applies previously learned materials	4	5	6	7	1
Applying problem-solving skills during class discussions	1	10	6	0	6

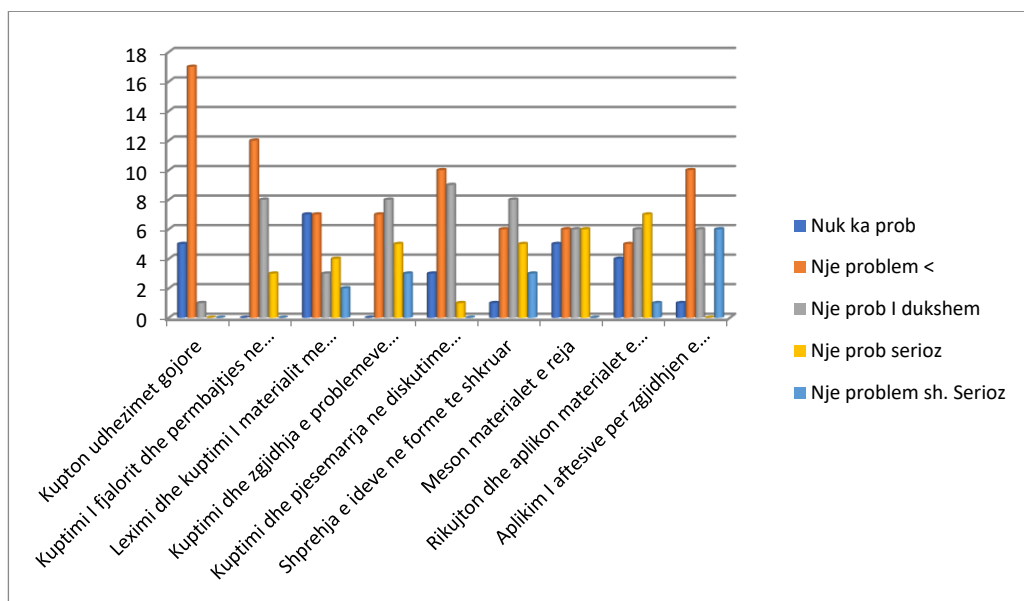


Table 2

PARTICIPATION AND PERFORMANCE OF TASKS					
	No problem	One problem	A visible problem	A serious problem	More serious problem
Sustaining attention during sports games	6	14	3	0	0
Pausing for long periods of time to complete a given task	1	6	7	7	2
Refocusing on the task when necessary	3	5	7	6	2
Completing the task with only one instruction	2	7	8	4	2
Completing the task with several instructions	3	7	7	5	1
Completes the task in order	8	3	7	5	0
Organizes own things or school supplies	6	6	7	2	2
Completes homework/classwork	4	6	1	9	3
Completes work accurately, without errors	1	6	8	5	3
Works without distracting self or others	1	5	8	8	1
Completes the task on time	0	10	5	3	5

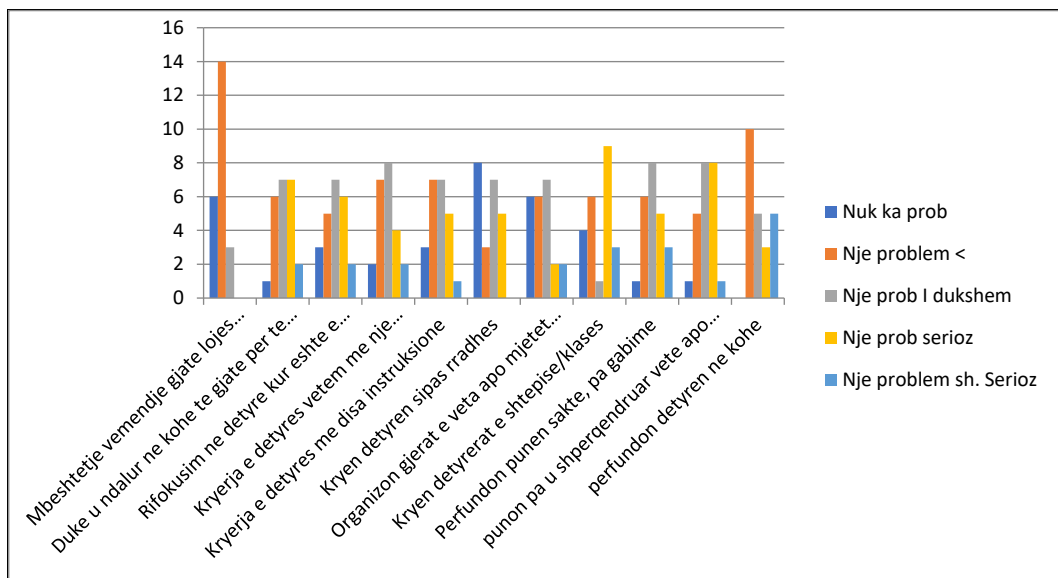
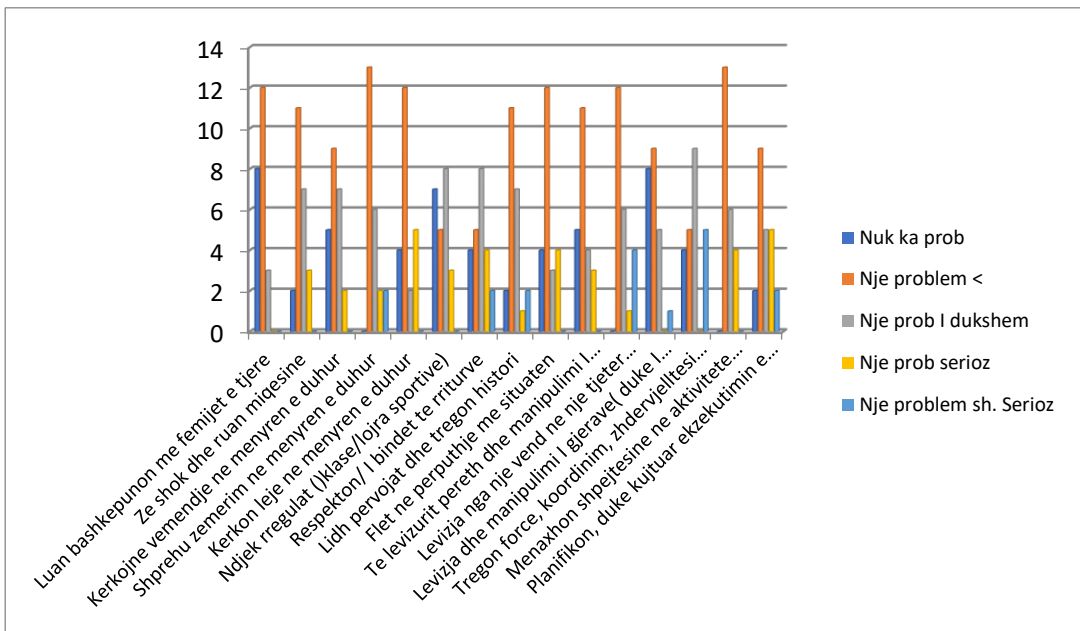


Table 3

COOPERATION AND RELATIONS WITH OTHERS					
	No problem	One problem	A visible problem	A serious problem	More serious problem
Plays cooperatively with other children	8	12	3	0	0
Makes friends and maintains friendships	2	11	7	3	0
Seeks attention appropriately	5	9	7	2	0
Expresses anger appropriately	0	13	6	2	2
Asks permission appropriately	4	12	2	5	0
Follows rules (classroom/sports)	7	5	8	3	0
Respects/obeys adults	4	5	8	4	2
Relates experiences and tells stories	2	11	7	1	2
Speaks appropriately	4	12	3	4	0
Moving around and manipulating objects	5	11	4	3	0
Moving from one place to another (kneeling, walking, etc.)	0	12	6	1	4
Moving and manipulating things (pushing, pulling)	8	9	5	0	1
Shows strength, coordination, agility in activities or tasks	4	5	9	0	5
Manages speed in physical activities or tasks	0	13	6	4	0
Plans, remembering to execute controlled motor movements	2	9	5	5	2



RECOMMENDATIONS

1. Every teacher should know well the individuality of the student with whom he speaks, communicates, explains, obtain information about other family, social, environmental factors, etc. During his work, the teacher should take into account the characteristics of the development of students.

2. The teacher and the parent should cooperate with the school psychologist or specialized centers to psychologically test the child with poor results, to determine whether the child has learning disorders, or mental retardation, attention deficit disorder and hyperactivity.

3. The ways in which children reflect the various concerns they have are different. If a child constantly has outbursts of anger and shows aggression or isolates himself from family life and other children, parents should not neglect him. Also, other indicators that a child is anxious are insomnia, recurring nightmares, refusal to eat, or complaints of various headaches.

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GENERATIVE AI AS A CO-FOUNDER: HOW LANGUAGE MODELS MEDIATE ENTREPRENEURIAL COMMUNICATION AND EARLY-STAGE TRACTION

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Abstract

Generative language models now help founders draft the words that launch new ventures: pitch decks, landing pages, outreach emails, and product microcopy. We treat a capable LLM as an “AI co-founder” for the communication function and lay out a research agenda that links four micro-rhetorical levers – clarity, cohesion, specificity, and call-to-action (CTA) strength – to early traction: click-throughs, sign-ups, replies, and first sales. Building on evidence that wording can move behavior and that AI support may narrow capability gaps, we pose research questions about whether, how, and for whom AI-assisted language changes outcomes. We outline measurement strategies for the four levers, suggest study designs (observational pipelines, field A/B programs where feasible, and causal-mediation plans), and spell out equity, credibility, and safety considerations to guide future work. We close with a practitioner toolkit and open instruments to help founders apply these ideas and to make progress cumulative.

Keywords: generative AI, entrepreneurship, research agenda, rhetoric, persuasion, startup traction

INTRODUCTION

Words move markets. Beyond product and technology, the way founders frame the problem, structure the story, and ask for action shapes investor judgments and customer behavior. Classic persuasion work explains why language influences people [1, 2], and entrepreneurship research links rhetorical strategy to resource acquisition [3]. Generative AI delivers sizable gains on professional writing tasks [4] and can especially help less-experienced workers [5]. Human–AI co-writing studies also suggest that *how* assistance is

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structured matters for outcomes and user experience [6]. At the same time, model-driven persuasion raises real opportunities and risks [7]. **Premise.** We recast the LLM as an *AI co-founder* for language-intensive entrepreneurial work: drafting and iterating decks, landing-page copy, investor/customer emails, and product microcopy. Our central idea is *rhetorical mediation*: improvements in concrete language features— clarity, cohesion, specificity, and CTA strength – are the likely pathways from AI assistance to behavioral traction (clicks, sign-ups, replies, first sales), not just higher judge scores.

Gaps. Despite rapid adoption, three gaps stand out. First, few studies tie AI-shaped language to *market behavior* rather than subjective evaluations. Second, we lack clean mediation evidence that connects specific rhetorical features to outcomes. Third, equity and safety are under-specified: do LLMs narrow capability gaps for non-native English founders, and what are the credibility risks from overclaiming or hallucination [8]

What this paper offers. We do not report experiments. Instead, we set an agenda. We propose research questions, outline measurement for the four levers, sketch study designs that different teams can run in the field, and compile ethics and credibility practices suitable for founder-facing deployments.

Table 1. Agenda focal points and what future studies should examine

Focal point	What’s new vs. prior work	What future studies should examine
AI as <i>co-founder</i> (not just a tool)	Treat LLMs as active partners in venture communication workflows	Compare human-only vs. human+AI workflows across decks, landing pages, and outreach in real settings
Communication traction link →	Shift from judge scores to <i>behavioral</i> outcomes	Where feasible, link language variants to CTR, sign-ups, replies, and first sales using field A/Bs or natural experiments
Rhetorical mediation	Identify which features carry any gains	Pre-registered mediation plans using clarity, cohesion, specificity, and CTA strength as candidate pathways
Ecological validity	Keep tasks close to actual founder work	Partner with incubators; use blinded expert panels alongside behavioral readouts when possible
Equity angle	Understand distributional effects	Test whether assistance benefits non-native English founders and those with lower baseline writing skill
Credibility guardrails	Balance performance and trust	Evaluate retrieval-backed fact-checks, disclosure language, and light-touch compliance screens
Open instruments	Make progress cumulative	Share de-identified prompts, rubrics, and templates; encourage common reporting standards

Contributions. We aim this paper at entrepreneurship, HCI, and computational social science:

- **Conceptual spine.** We frame an “AI co-founder” view of the communication function and formalize four rhetorical levers: clarity, cohesion, specificity, and CTA strength.
- **Research questions.** We set testable questions connecting those levers to early

traction metrics (CTR, sign-ups, replies, first sales).

- **Measurement and instruments.** We lay out practical ways to measure the four levers and provide reusable materials (prompt templates, coding rubrics, feature extractors) to standardize studies.
- **Study designs and reporting.** We suggest observational pipelines, field A/B patterns, and mediation plans, and we recommend reporting basics: preregistration where appropriate, coder reliability, and false-discovery control.
- **Ethics and credibility.** We provide guidance on disclosure, retrieval-backed fact-checks, and lightweight compliance review for founder-facing use.
- **Practitioner toolkit.** We collect proposed heuristics that founders and incubators can use immediately, flagged as guidance until stronger evidence accumulates.

Roadmap. Table 1 previews the agenda. Next, we review work on entrepreneurial rhetoric, human–AI co-writing and persuasion, conversion science, and AI safety, and then we lay out our research questions and methodological directions for future studies.

LITERATURE REVIEW

Entrepreneurial Communication and Early Traction

A long line of work in entrepreneurship shows that how founders talk about their ventures shapes whether outsiders see the business as real, worthy, and fundable. Research on *cultural entrepreneurship* argues that stories help founders turn fuzzy opportunities into credible identities that attract resources [9]. Narrative structure and rhetorical choices matter for investor judgments and access to capital [10, 11], and symbolic cues can substitute for hard proof in the earliest phases, helping teams win legitimacy before metrics exist [12, 13].

Zooming in on measurable language, studies link concreteness, clarity, and audience fit to behavior in markets. Specific, concrete language increases satisfaction and downstream engagement [14], and linguistic style and affect shift conversion in reviews and brand messaging [15, 16]. In founder-facing settings, the wording in crowdfunding pitches predicts funding success [17]. Still, most entrepreneurship work stops at investor ratings, expert scores, or funding totals. We rarely see a tight chain from language to the *earliest traction metrics* founders actually chase (email replies, landing-page sign-ups, first sales).

Language That Moves Markets: Evidence from Marketing and IS

Outside entrepreneurship, marketing and information-systems research has run large-scale field tests showing that small wording choices move real outcomes. Personalized subject lines lift email opens and downstream response [18]. Emotion, directive speech acts, and message structure change sharing and conversion at scale [15, 16, 19]. These literatures offer validated, quantifiable levers (e.g., concreteness,

specificity, directive strength) that can be ported into founder communications and evaluated against traction metrics such as CTR, sign-ups, and purchase.

Generative AI as a Writing Partner

Recent evidence shows that generative AI raises knowledge-worker productivity and writing quality, with the largest gains for less-experienced workers . Separate work finds that GPT-4 can be highly persuasive in conversational settings, especially when messages are personalized [20]. For ventures, the upshot is straightforward: a language model can act as a hands-on collaborator that helps make founder messaging clearer, more persuasive, and better targeted—potentially offering even bigger lifts for newer or non-native-English founders. What the entrepreneurship literature has not yet done is evaluate LLMs as an *active partner* in the communication function end-to-end, or map any benefits onto early traction metrics.

Table 2. What we know vs. what remains open (gap analysis)

Stream	Key findings (representative evidence)	Open questions for the field
Entrepreneurial rhetoric & legitimacy	Stories and identity claims shape investor judgments and resource access [9–13].	Move beyond expert/investor judgments to <i>behavioral traction</i> (CTR, sign-ups, first sales) and pinpoint which rhetorical features matter most.
Marketing/IS language effects	Concreteness, directives, and personalization change real behavior in the field [14–16, 18, 19].	Port validated levers into founder tasks (deck, landing page, outreach) and evaluate them against venture-relevant KPIs with appropriate field methods.
Generative AI for writing	LLMs boost writing productivity/quality; gains are larger for less-experienced workers.	Treat LLMs as <i>co-founders</i> of the communication function and examine effects on early traction in real workflows.
Persuasion with LLMs	GPT-4 can outperform humans in conversational persuasion; personalization matters [20].	Identify <i>which</i> rhetorical features (clarity, cohesion, specificity, CTA) likely mediate any benefits and for whom those benefits are largest.
Risk and credibility	Hallucinations are measurable and mitigable but persistent [21, 22].	Co-measure credibility/compliance risks (over-claiming, factuality) alongside any performance gains; build guardrails into the workflow.

Risks and Guardrails

Any performance gains have to be balanced against credibility and compliance. Work in *Nature* documents both the prevalence of hallucinations and emerging detection methods [21, 22]. For founders, overconfident or fabricated claims can backfire with customers and regulators. Future studies should therefore co-measure

benefits *and* risks, and make guardrails—retrieval-backed fact checks, clear disclosure, and lightweight compliance screens—part of the design.

Where the Literatures Leave Us

Table 2 contrasts what we know with what remains open. In short, prior work shows that (i) language moves outcomes, and (ii) generative AI can lift writing performance, especially for novices. What the field still lacks is a cumulative, field-grounded evidence program that links AI-assisted founder language to early traction—and opens up the black box via four rhetorical channels: clarity, cohesion, specificity, and CTA strength. This paper lays out that agenda: the questions to ask, the measurements to use, and study patterns teams can adapt in the wild.

Positioning

Relative to prior work, this agenda (i) treats the LLM not as a spell-checker but as a co-founder for the communication stack, (ii) focuses attention on *behavioral* traction in real founder tasks, decomposes likely pathways through clarity, cohesion, specificity, and CTA strength, and

(iii) insists on auditing credibility and compliance risks alongside performance.

CONCEPTUAL FRAMEWORK AND RESEARCH QUESTIONS

Conceptual grounding

Founders don't just build products; they build belief. Decades of persuasion research show that *clarity*, *coherence*, and *specificity* shape how people process ideas and decide to act [1, 2]. In the earliest stage of a venture, the actions that matter are concrete: click, sign up, reply, buy. We treat a capable language model as an *AI co-founder* that helps founders do this communication work better and faster.

The core idea is **rhetorical mediation**: improvements in a few concrete features of the message—clarity, cohesion, specificity, and the strength/placement of the call-to-action (CTA)—are the most plausible pathways from AI assistance to early traction. This view sits comfortably with entrepreneurship work that emphasizes action under uncertainty and iterative stakeholder communication [23]. It also lines up with fresh evidence that generative AI can lift writing quality and help less-experienced workers close performance gaps [4, 24], and with marketing/IS findings that small wording choices move real behavior at scale [25].

Conceptual model: rhetorical mediation.

AI-supported workflow: LLM as co-founder for message creation and iteration

↓ (improves the message-making process)

Mediators: clarity, cohesion, specificity, CTA strength

↓ (shapes audience processing and willingness to act)

Outcomes: CTR, sign-ups, replies, first sales; expert scores (as a secondary readout)

Context/moderators: baseline writing skill; non-native English status

Fig. 1. How AI-assisted language could translate into early traction

Constructs at a glance

Table 3 summarizes the key constructs, their role in the framework, and how future studies can operationalize them.

Table 3. Key constructs, roles, and suggested operationalizations for future work

Construct	Role in frame-work	Intuition and how to measure
AI co-founder	Focal factor/workflow	Guided LLM support that helps founders draft, revise, and test stronger messages (documented prompts, revision loops).
Clarity	Mediator	Simple, concrete wording reduces effort and friction to act [1]; measure with readability plus human ratings.
Cohesion	Mediator	Smooth logic and signposting keep readers oriented; measure via discourse/transition cues and panel ratings.
Specificity	Mediator	Concrete details raise credibility and reduce ambiguity; measure with concreteness/specificity scores.
CTA strength	Mediator	Direct, well-placed CTAs convert intent to action [25]; measure with rule-based placement + panel coding.
Early traction	Outcome	Behavior that matters now: CTR, sign-ups, replies, first sales (where applicable).
Expert score	Secondary outcome	Blinded panel judgment of message quality to complement behavior.
Baseline writing skill	Context / moderator	Capability substitution: bigger lifts when starting weaker [24] (pre-task writing screen).
Non-native English	Context / moderator	AI may narrow language gaps via scaffolding [4] (self-report + proficiency).

Research questions

We keep the questions tight and testable. They are written to guide future observational and field studies.

Main effects.

RQ1 (Behavioral lift). Do AI-supported founder workflows improve early traction—higher landing-page CTR and sign-up rates, higher outreach reply and positive-reply rates, and (where applicable) higher first-sale conversion—relative to business-as-usual?

RQ2 (Message quality). Do AI-supported workflows produce messages that blinded experts rate higher on clarity, coherence, specificity, and overall persuasiveness?

Mediation.

RQ3 (Rhetorical mediation). To what extent do clarity, cohesion, specificity, and CTA strength *carry* any gains to early traction?

Equity and heterogeneity.

RQ4 (Capability substitution). Are gains larger for founders with lower baseline writing scores?

RQ5 (Language equity). Are gains larger for non-native English founders, and on which levers are differences most pronounced?

Risk and credibility.

RQ6 (Risk-managed gains). Which guardrails (retrieval-backed fact checks, disclosure language, light compliance screens) preserve credibility while sustaining performance?

Cross-artifact consistency.

RQ7 (Consistent story, stronger results). Does telling a consistent story across the deck, landing page, and outreach—measured by overlap in claims and arguments—amplify traction?

Why this matters theoretically

If future evidence supports RQ1–RQ3, we move past the vague “AI helps” claim and get a usable account of *how* language carries any benefits to behavior. If RQ4–RQ5 hold, we learn whether assistance narrows capability gaps that many founders face. And RQ6 keeps the conversation honest: performance without credibility isn’t progress. Together, the framework offers a practical, falsifiable path to understanding when and why an AI co-founder improves the odds of early traction.

RESEARCH AGENDA: STUDY DESIGNS (GUIDANCE, NOT A REPORT)

This paper does not report an experiment. Instead, it offers practical guidance for teams who want to test the framework in the wild. Think of this as a field playbook—what to measure, how to keep it credible, and where to watch for risk—without locking anyone into a single design.

Settings and participants (what typically works)

If you plan to run studies, recruit early-stage founders from incubators, university programs, or operator communities. Keep tasks close to real work: a short pitch deck, a simple landing or lead-capture page, and a brief outreach email. Make participation lightweight and respectful; avoid anything that feels like homework for its own sake.

Outcomes that matter (keep them behavioral)

The early traction signals that matter most are straightforward: click-through on the main CTA, confirmed sign-ups, replies (and positive replies), and—where offered—first sales. Expert ratings are useful as a secondary readout, but they should never substitute for behavior. When possible, keep windows short (about a week) so results reflect the message, not month-long drift.

Measuring the four rhetorical levers (simple and transparent)

The framework lives or dies on four features. Here's a practical way to track them without overfitting:

- **Clarity:** combine readability and plain-language checks; let human raters flag jargon that the metrics miss.
- **Cohesion:** look for clear signposts and connective logic; simple discourse cues go a long way.
- **Specificity:** prefer concrete claims over vague promises; sentence-level specificity scores can help.
- **CTA strength:** check that the ask is direct, visible, and above the fold; code placement and phrasing on a short scale.

If you use panels, train raters with a two-page rubric and report basic agreement (e.g., Krippendorff's α) so others can reuse your setup.

Study patterns (pick what fits your context)

There isn't one "right" design. Three patterns tend to travel well:

1. **Observational pipelines:** version your copy over time and connect changes in the four levers to shifts in CTR or sign-ups. Great for scrappy teams with steady traffic.
2. **Field A/Bs:** where volume is available, compare language variants head-to-head. Keep splits fair and predefine what "good" means before you launch.
3. **Causal-mediation plans:** if you have the data, test whether clarity, cohesion, specificity, and CTA strength actually *carry* any gains. Keep the plan short and public.

Equity and heterogeneity (don't just look at the average)

Track who benefits. Two moderators are especially informative: baseline writing skill and non-native English status. If support mostly lifts newer writers or non-native founders, say so; that's the kind of result that helps programs decide where to invest.

Credibility and safety (bake in guardrails)

Performance without trust isn't progress. Pair any assistive workflow with light guardrails: retrieval-backed fact checks for claims, brief disclosure when the model shaped the text, and a simple checklist for compliance in sensitive domains. Log what gets flagged and why.

Reporting basics (make the work reusable)

Small details make future studies easier to compare:

- Share prompts, rubrics, and scoring instructions.
- State the outcome windows and any filters you used (e.g., bot screening, bad emails).
- If you run panels, include the rater guide and the agreement stats.
- If you run A/Bs, record traffic splits and total exposure. None of this needs to be perfect; it just needs to be clear.

•

Data sharing (only what's safe and helpful)

If you publish artifacts, scrub identities and sensitive details and share just enough to be useful: drafts, prompts, final text, panel scores, and high-level outcome aggregates. Avoid raw user data unless you explicitly have permission and a safe way to host it.

MEASUREMENT AND REPORTING (FOR FUTURE STUDIES)

This paper does not collect or analyze data. The goal here is simple: leave a clear, lightweight guide that future teams can use when they test the framework in the wild.

What to collect (at minimum)

Keep it practical and privacy-safe.

- **Text artifacts:** the final deck, landing/lead-capture page, and outreach email. Version history is helpful but optional.
- **Behavioral outcomes:** click-through on the main CTA, confirmed sign-ups, replies (and positive replies), and—where offered—first sales.
- **Optional expert panel:** blinded ratings for clarity, cohesion, specificity, and overall persuasiveness as a secondary readout.

Behavior-first outcomes (short windows)

Use short, predeclared windows so results reflect the message, not drift: about 7 days for CTR, sign-ups, and replies; up to 14 days for first sales (if applicable). Expert scores are useful, but they do not replace behavior.

The four rhetorical levers (simple, transparent measures)

These features are the spine of the framework. Measure them in ways others can copy.

- **Clarity:** readability plus a plain-language pass. Readability indices (e.g.,

Flesch; Grade Level) and a small jargon checklist are usually enough [26, 27].

- **Cohesion:** clear signposting and connective logic. Simple discourse cues and referential overlap work well; save the heavy NLP for later [28].

- **Specificity:** concrete details over vague promises. A sentence-level specificity score is useful; summarize at the artifact level.

- **CTA strength:** a direct, visible ask placed where people actually see it. Combine a short coder scale (1–5) with a couple of automatic checks (imperatives per 100 words; above-the-fold flag).

Panels and reliability (keep it honest, not heavy)

If you use human raters, give them a two-page rubric with a few gold examples. Report inter-rater agreement (e.g., Krippendorff's α) and keep the rubric public so others can reuse it [29].

Traffic hygiene (basic but important)

A few guardrails go a long way: filter obvious bots, drop zero-engagement sessions that last only a couple of seconds, and keep fair exposure when you compare variants. For outreach, use vetted lists and strip auto-replies from the totals.

Privacy and sharing (only what helps)

If you share artifacts, scrub names and identifiers. It's usually enough to release prompts, final text, panel scores, and high-level outcome aggregates. Avoid raw user data unless you have clear permission and a safe home for it.

RESULT REPORTING GUIDE (FOR FUTURE STUDIES)

This paper does not present results. To keep the work useful, this section spells out what a future results write-up should include when a team runs a study based on the framework.

What to summarize up front

Keep it short and concrete:

- **Who and where:** number of teams or artifacts, the setting (incubator, course, live product), and which artifacts were tested (deck, landing page, outreach).

- **Exposure:** basic traffic or outreach volume and the time windows used (e.g., 7 days for CTR/sign-ups; up to 14 days for first sales).

- **Outcomes:** which behavioral metrics were analyzed (CTR, sign-ups, replies, positive replies, first sales) and whether expert ratings were collected as a secondary readout.

Behavioral outcomes first

Lead with actions from real audiences. Report base rates, effect sizes with confidence intervals, and the exact *N* behind each outcome. If volume differs by artifact (e.g., first sales apply to a subset), say so plainly.

Rhetorical mediation (if measured)

If you measured the four levers—clarity, cohesion, specificity, CTA strength—show how they relate to the outcomes. When possible, report simple, transparent mediation or at least clear associations, and explain how each feature was scored.

Who benefits (equity and heterogeneity)

Break out key subgroups: baseline writing skill (e.g., quartiles) and non-native English status. If the gains concentrate for newer writers or non-native founders, state that directly and show the supporting numbers.

Credibility and safety

Include light but honest checks: overclaiming, factuality concerns, and whether disclosure was clear when AI assisted. Report how often issues were flagged and what changed after fixes.

Robustness you can trust

Note any alternative filters or model specs you tried (e.g., bot filters, different specificity metrics) and whether the main patterns held. Keep this to a paragraph unless something truly changes the story.

One-paragraph takeaway

Close with two or three sentences in plain language—what moved, how big the movement was, and where the effect was strongest or weakest. Skip the hype; readers will appreciate the clarity.

DISCUSSION AND IMPLICATIONS

What this agenda says in plain terms

Treat the language model like a partner for the communication work. Make the message clearer, keep the story tight, add real specifics, and ask directly. Then watch what people do: click, sign up, reply, and—if you have a price—buy. The simple idea is cause and effect through words: change the wording, change the odds.

Back to the big picture

The framework lines up with classic persuasion: clarity eases processing, specificity builds trust, and a visible call-to-action reduces friction to act [1, 2, 25]. In entrepreneurship terms, it's language-as-effectuation: tell the story → get a response → adjust [23]. Evidence from knowledge work suggests assistance can narrow gaps for less-

experienced writers [4, 24]. Taken together, a practical research path emerges: test whether these levers move early behavior, for whom, and with what trade-offs.

A practical playbook for founders

Table 4 turns the framework into steps you can run next week. The idea is simple: make language measurable and let quick tests arbitrate taste.

Table 4. Founder playbook: turn language into traction (proposed steps)

Step	What to do	Why it helps	KPI to watch
Frame the problem	Open with a one-sentence, concrete problem claim; strip jargon	Lowers cognitive load (clarity)	Time on-page first screen
Propose the change	State the “how it works” in 2–3 simple sentences	Keeps readers oriented (cohesion)	Scroll depth to CTA
Make it specific	Name the audience, context, and numbers (e.g., “save 3 hrs/wk”)	Increases credibility (specificity)	Positive reply rate
Ask directly	Use an above-the-fold CTA with a concrete verb	Reduces friction (CTA strength)	CTR on primary CTA
Test two versions	Swap one lever per test (clarity vs. specificity)	Clean learning loops	Sign-up rate lift
Disclose honestly	Add a short “assisted by AI” note when applicable	Maintains trust	Credibility flags (down)

What incubators can operationalize

- **Structured clinics.** Run 60-minute “language design sprints”: draft with the AI co-founder, evidence-check claims, and produce two A/B-ready variants.
- **Templates that matter.** Offer a small library mapped to the four levers (clarity, cohesion, specificity, CTA). Fewer, better templates beat large menus.
- **Measurement by default.** Stand up a simple dashboard with CTR, sign-ups, reply rate, and credibility flags at the team level each week.
- **Equity focus.** Provide extra office hours for non-native writers; push checklists that emphasize plain language and directive CTAs.

Policy and ecosystem implications

Digital tools don’t just save time; paired with measurement and basic guardrails, they can raise inclusion—especially where English is a second language or copywriting talent is scarce.

Light-touch guidance on disclosure and claim substantiation helps avoid the “fast but flimsy” failure mode.

When *not* to lean on an AI co-founder

The agenda is not “use AI everywhere.” Table 5 lists common cases where the tool should sit in the back seat.

Table 5. When to be cautious or avoid AI-led copy (proposed guidance)

Context	Why caution is warranted	Better move
Regulated claims (health/finance/edtech)	Risk of overclaiming or missing required disclosures	SME/legal review before launch
Novel technical claims	Confident tone can mask errors	Human rewrite with citations and diagrams
High-stakes investor negotiation	Tone and nuance matter more than speed	Draft with AI, then human rewrite and re-hearse
Tiny or biased traffic	A/B results won't be trustworthy	Qualitative tests (5-use read-aloud), then go live
Strong brand voice constraints	Templates can flatten distinctiveness	Co-write for structure; hand-craft the final voice

What likely travels beyond early-stage ventures

Clearer, more specific, better-directed language should matter in other language-heavy moments: hiring pages, partnership outreach, pilot proposals, even customer support macros. The mechanism is the same: small wording changes that lower effort, raise credibility, and make the ask unmistakable.

Limits of this agenda

This paper sets direction; it does not present results. The near-term focus is on short windows and early behavior, not long-run brand effects. The text features are proxies, not ground truth for human understanding. And while guardrails are practical, sensitive domains will need domain-specific checks.

What to do on Monday

Pick one page (pricing or lead capture). Write two clean variants with one lever changed. Set a real CTA, disclose assistance, and run a fair split for a week. Let the numbers pick the winner. Then move to outreach with the same discipline. Small, repeated lifts compound.

ETHICAL AND VALIDITY CONSIDERATIONS (FOR FUTURE STUDIES)

This paper sets direction; it does not present results. The goal here is simple: outline what future studies should do to keep findings believable, comparable, and safe. Internal validity: keep the comparisons fair

- **Assignment and exposure.** If you compare variants, keep exposure fair (balanced splits, fixed windows) and avoid overlapping tests on the same page [30].
- **Tool leakage.** If one group should not use a tool, spell that out and ask participants to disclose what they used. Note any deviations; don't bury them.

- **Demand effects and blinding.** Give all groups identical briefs and timelines. If you use panels, blind raters to the variant and the team.
- **Measurement hygiene.** Filter obvious bots, drop zero-engagement sessions that last a couple of seconds, and define windows in advance so nobody cherry-picks a “good day.”
- **Missingness.** Say when traffic fell short or outreach bounced. Show how many artifacts each outcome actually includes.
- **Multiple outcomes.** If you test a family of outcomes, acknowledge the multiple-comparisons problem; simple false-discovery control is enough to keep you honest.
- **A/B interference.** Run one live test per page. Stagger tests rather than stacking them.

External validity: where results will (and won’t) travel

- **Population and setting.** Early-stage, software-leaning teams will not look like every venture. Expect smaller effects where copy matters less, and larger effects where copy is the product.
- **Tasks and channels.** Decks, landing pages, and outreach are close cousins to pricing pages, ads, and job posts; they are less like PR or investor negotiation.
- **Models and scaffolds.** Effects reflect the bundle (model + prompts + guardrails). Swap the bundle and magnitudes may change, but the mechanism—clearer, more specific, better-directed language—should carry.

Ethics and credibility: do the simple things well

- **Consent and transparency.** Get informed consent from founders. For outreach, use vetted lists and offer a clean opt-out. If AI meaningfully shaped the copy, add a brief disclosure on public pages.
- **Privacy by default.** Minimize personal data. Scrub names and identifiers before sharing artifacts; release prompts, final text, panel scores, and high-level aggregates—not raw user data.
- **Claim substantiation.** Back factual claims with a quick retrieval check. For regulated or sensitive domains, route copy through a subject-matter review before it goes live.
- **Stop rules.** Decide in advance what triggers a pause (e.g., repeated spam complaints, high credibility-risk ratings) and what happens next.

Diagnostics at a glance

Table 6. Common threats, what they look like, quick checks, and good practice

Threat	What it looks like	Quick check	Good practice
Imbalanced exposure	One variant gets most traffic or a better time window	Traffic split by day/hour	Fix splits; use fixed windows
Tool leakage	“Control” quietly used external tools	Exit survey; basic logs	Report it; analyze both ways

Threat	What it looks like	Quick check	Good practice
Bot or junk traffic	Bursts of 1–2s sessions; odd UAs	UA/IP heuristics; event mix	Filter bots; drop zero-engagement
Outcome peeking	Results reported from a cherry-picked day	Predeclared window vs. used	Stick to the plan; note deviations
Rater bias	Panels favor one variant	Blinding; agreement stats	Calibrate; report α or κ
Overlapping tests	Multiple changes on one page	Change log	One live test per page
Overclaiming	Vague or inflated benefits	Credibility check-list	Rewrite or remove claims

Lightweight sensitivity checks worth running

A paragraph is plenty. Try stricter bot filters, a different outcome window, an alternate specificity or cohesion score, or a different panel cut. If the story changes, say how; if it doesn't, say that too.

CONCLUSION

Early-stage ventures live and die on whether their words move people to act. This paper treats a modern language model as an *AI co-founder* for that job and lays out a practical research agenda. The core idea is simple: small, deliberate changes in four levers—*clarity*, *cohesion*, *specificity*, and *CTA strength*—should be the pathways from better writing to early traction (clicks, sign-ups, replies, and, where relevant, first sales).

The guidance is straightforward. Treat message-making as part of the product surface. Write to those four levers, then measure what people do. Keep windows short so feedback reflects the copy, not drift. Start with one page or one outreach list, test two clean variants, and let behavior—not taste—pick the winner.

Credibility has to ride alongside performance. That means quick fact checks for claims, a brief disclosure when AI meaningfully shaped the text, and a lightweight compliance pass in sensitive domains. None of this needs to be heavy; it just needs to be clear.

There are limits. The agenda focuses on short-horizon, language-first moments—decks, landing pages, and outreach. Long-run brand building, complex enterprise sales, and tightly regulated claims need more human judgment and domain review. Future studies should also look beyond English and test richer collaboration modes (voice, visuals, data-backed claims) across sectors and channels.

To make progress cumulative, we include open instruments—prompt templates, coding rubrics, and measurement checklists—and encourage teams to share de-identified artifacts and high-level outcome summaries when they run studies. Replication, reuse, and critique will move this topic faster than any single project. The north star is simple: clearer language, honest measurement, steady guardrails—and an AI co-founder that helps more founders get their first “yes.”

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APPENDIX A: PROMPT TEMPLATES (SHAREABLE)

A1. Deck drafting prompts

Problem framing (clarity pass).

Goal: Explain the problem in one sentence anyone can follow. Constraints: No jargon. Replace buzzwords with concrete language.

Template: "For [specific user], [observable pain] causes [measurable downside]." Checklist: Short, concrete, no hedging.

Solution fit (cohesion pass).

Goal: Connect problem -> how it works -> why it works.

Template: "We do [how it works in 2-3 steps]. This matters because [mechanism]." Checklist: Use "so", "because", "therefore" to signpost logic.

Evidence (specificity pass).

Goal: Add credible numbers or examples.

Template: "In a pilot with [N users/companies], we saw [metric change]." Checklist: Prefer concrete counts, time saved, or money saved.

Ask (CTA pass).

Goal: Make the next step explicit.

Template: "Join the pilot: [link]" or "Book a 15-min call: [link]". Checklist: One ask, above the fold.

A2. Landing page prompts

Hero and subheader (clarity + specificity).

Hero: "[Audience] save [X] doing [task] in [Y] minutes."

Sub: "Set up in [time]. Works with [integrations]. Free trial." Checklist: Avoid adjectives; use numbers and nouns.

CTA variants (CTA strength).

"Start free trial" / "Get early access" / "Book a 15-min demo" Place the primary CTA in the first screen; repeat once below.

Proof strip (specificity).

"Used by [named segments]." "[N] teams saved [X hours/week]." Include one line of social proof or a real quote if available.

A3. Outreach prompts

Cold investor email.

Subject: "Quick intro: [one-line result]"

Hi [Name]—we help [audience] get [result] by [how]. In a [pilot/alpha] with [N], we saw [metric].

Would you be open to a 15-min intro next week? [link]

—[Your name]

Customer discovery note.

Subject: "Sanity check on [problem]"

Two-line context, one-line what you tried, single concrete ask: "Could I get 10 mins to see if this solves [specific pain]?"

A4. Fact-check and disclosure prompts

Fact-check (regulated/claims).

Highlight any factual claim (numbers, market size, regulated benefits). Add a source note or remove claims you cannot substantiate.

Disclosure.

"Some copy on this page was assisted by AI; all claims are verified." Use when model assistance materially shaped public copy.

APPENDIX B: CODER RUBRICS (SHAREABLE)

B1. CTA strength (1–5)

Table 7. CTA strength rubric (1–5)

Score	Descriptor
1.	No clear ask; generic language; CTA buried; vague verbs (“learn more”).
2.	Ask exists but is soft or below the fold; verbs are weak or abstract.
3.	Clear ask with a concrete verb; visible once; some friction remains.
4.	Strong, specific ask; above the fold; low friction (few fields).
5.	Singular, compelling ask; above the fold; friction minimized; mirrors value promise.

B2. Credibility/compliance (1–5; lower is better)

Table 8. Credibility & compliance rubric

Score	Descriptor
1.	Claims are specific and referenced; risks disclosed if relevant; no red flags.
2.	Minor puffery but factual core is sound; disclosures adequate.
3.	Some vague or absolute claims without support; disclosures partial.
4.	Multiple unsubstantiated claims; missing required disclaimers; risk of mis- leading.
5.	Material misrepresentation or regulated claims without basis; must be pulled.

B3. Positive-reply coding guide

Table 9. Positive-reply coding (binary)

Label	Operational definition (examples)
Interested (1)	Contains an affirmative intent to meet, try, or buy (e.g., “Let’s book a call,” “We’d like to pilot,” “Send the contract”).
Not interested (0)	Neutral or negative responses; information requests without commitment; auto-responses.

SUSTAINABLE DEVELOPMENT AND PUBLIC ADMINISTRATION

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Abstract

This paper analyzes how public administration contributes to sustainable development by evaluating the policies and strategies implemented by state institutions to achieve a balanced approach to economic, social, and environmental growth. Sustainable development is a worldwide aim that necessitates collective commitment from the public sector, private sector, and civil society. As an all-encompassing concept, it seeks to maintain equilibrium between economic advancement, environmental stewardship, and social welfare, tackling current challenges without jeopardizing the prospects for future generations. Public administration functions as an institutional and organizational system that enables the state's operations and enforces public policies at both national and local levels. It comprises a variety of structures and processes that are tasked with delivering public services, managing state resources, and ensuring effective and sustainable governance. Traditionally, public administration can be defined as a governmental executive mechanism that implements laws and regulations to facilitate the functioning of an organized society. This paper examines the sustainable development objectives set by the 2030 Agenda, emphasizing the concrete measures Albania has taken to reach these goals at both central and local levels. The research focuses on Albanian public administration policies related to renewable energy, waste management, sustainable transportation, and environmental protection. Additionally, the paper discusses the challenges and opportunities faced by the Albanian public sector in advancing sustainable development and offers suggestions for enhancing current practices and policies. The objective of this study is to provide a comprehensive analysis of the involvement of Albanian public administration in achieving sustainable development and to assist in formulating more effective policies to secure a sustainable future for the nation. In a modern and progressive society, public administration is vital in both the creation and execution of policies that significantly impact citizens' lives. Its efficiency and transparency are critical elements in ensuring effective governance and fostering sustainable development.

Keywords: sustainable development, public administration, public services, Agenda 2030

INTRODUCTION

In a contemporary and developed society, public administration is essential in creating and executing policies that directly influence the lives of citizens. Its efficiency and openness are vital components in fostering good governance and facilitating sustainable development. As an all-encompassing concept, sustainable development seeks to strike a balance

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among economic growth, environmental safeguarding, and social welfare, tackling the challenges of today while ensuring opportunities for future generations.

In a democratic country, public administration serves as a crucial mechanism for government operations and the delivery of services to citizens. To ensure an effective and accountable administration, its activities must be grounded in fundamental principles that guarantee transparency, efficiency, and the protection of citizens' rights. These principles contribute to the establishment of an administration that advocates for sustainable development, upholds the rule of law, and fosters public confidence in governmental institutions.

Sustainable development is a concept that has matured into a core principle in both global and local governance, concentrating on creating conditions that provide long-term welfare for future generations while considering the balance of economic, social, and environmental demands. The idea was initially articulated in the 1987 report from the World Commission on Environment and Development, known as the Brundtland Report, which characterized sustainable development as “the expansion of people’s ability to meet their own needs without compromising the ability of future generations to meet their own needs.” This straightforward yet comprehensive definition has facilitated the global adoption of sustainable development, leading to its integration into the policies and practices of nations and international entities.

Sustainable development aims to establish a balanced approach to the utilization of natural resources, economic advancement, and enhancement of social living standards. It includes various dimensions, such as managing natural resources, environmental conservation, improving living conditions, and ensuring equal opportunities for all individuals. Achieving sustainable development effectively demands a collective commitment from all sectors of society, which includes governments, the private sector, civil organizations, and individuals.

A crucial aspect of sustainable development involves fostering opportunities for sustainable economic progress, grounded in responsible production and consumption growth. This initiative seeks to boost productivity and generate employment for everyone, bolstering local businesses and making them competitive in global markets. Nevertheless, economic advancement needs to occur without depleting natural resources or harming the environment. Therefore, it is vital for all economic activities to ensure an equitable distribution of wealth and opportunities across all societal segments, fostering social equality and diminishing economic and social disparities.

Proper management of natural resources and environmental preservation is a crucial element of sustainable development. In light of significant environmental challenges like climate change, pollution, and loss of biodiversity, sustainable development is vital for maintaining a healthy planet for future generations. This concept entails utilizing natural resources in a responsible and regulated way, ensuring they remain available for future use while minimizing the environmental consequences of human actions. Practices such as renewable energy, sustainable farming, water management, and biodiversity protection are integral to this approach.

Beyond economic and environmental considerations, sustainable development significantly emphasizes the social aspect, which pertains to enhancing the quality of life for all members of society. This implies that sustainable development should facilitate equal

access to education, healthcare, job opportunities, and participation in political and social spheres. This dimension also addresses the issues of poverty and inequality, creating opportunities for individuals from diverse social, ethnic, and economic backgrounds. Enhancing the quality of life necessitates a concerted effort to develop public services, improve infrastructure, and support the most vulnerable individuals with special needs.

Sustainable development plays a crucial role in ensuring the security and quality of life for future generations. With the escalating global issues such as climate change and the excessive consumption of natural resources, sustainable development is essential for allowing future generations to live with dignity. Unsustainable practices that harm the environment can result in the destruction of ecosystems and jeopardize vital resources like clean water and air. By adopting sustainable development practices, we can prevent ecological damage and secure a healthier future for our planet.

Sustainable development is not merely a local concern; it demands a worldwide commitment and collaboration among nations. Climate change is another significant challenge affecting global progress and necessitates coordinated international responses. Agreements such as the Paris Agreement regarding climate change and the United Nations Sustainable Development Goals (SDGs) exemplify opportunities to foster sustainable development through global cooperation. These accords seek to establish commitments and cooperative actions among countries to tackle worldwide issues and promote sustainable development on a planetary scale.

The concept of sustainable development involves a comprehensive and balanced approach that encompasses the economy, environment, and society. It aims to fulfill the needs of the present without jeopardizing the ability of future generations to satisfy their own needs. The significance of sustainable development continues to grow due to the pressing global challenges we are confronted with, including climate change, the decline of biodiversity, and rising social inequalities. Sustainable development offers a pathway to establish a brighter and healthier future for everyone, harmonizing the interests of individuals and the planet within a collective global vision.

2. SUSTAINABLE DEVELOPMENT GOALS UNDER THE 2030 AGENDA

The 2030 Agenda for Sustainable Development is an international commitment embraced by 193 United Nations member states, which comprises a series of objectives and goals focused on enhancing living standards, safeguarding the environment, and fostering economic and social advancement. This agenda is made up of 17 Sustainable Development Goals (SDGs) and 169 specific targets, designed to ensure inclusive and sustainable progress by the year 2030. These goals represent a comprehensive framework that covers various aspects of development and presents an opportunity to tackle the most pressing challenges the world is currently facing. (European Court of Auditors, 2021).

Eradicating poverty in all its forms everywhere

A key goal of the 2030 Agenda is to eradicate poverty in all its manifestations. This involves not only aiding individuals in extreme poverty but also generating opportunities

for those experiencing moderate poverty through access to education, healthcare, and job opportunities. Achieving this aim necessitates a coordinated approach that concentrates on diminishing inequalities and offering assistance to the most vulnerable populations. (European Court of Auditors, 2021) *Eradicate hunger, achieve food security and promote sustainable agriculture*

This objective seeks to guarantee that every person has access to adequate and safe food to lead a healthy and active life. It encompasses the promotion of sustainable farming, the safeguarding of natural resources, and the encouragement of environmentally friendly practices, while minimizing the adverse effects of land and resource utilization. (Albanian Ministry of Environment, 2020)

Ensure health and well-being for all at all ages

The third objective focuses on enhancing health and well-being by providing affordable and equitable healthcare access to everyone. This objective encompasses the enhancement of both mental and physical health conditions, tackling communicable and non-communicable diseases, and ensuring that quality health services are available to all citizens, particularly the most vulnerable populations. (EBRD, 2020)

Ensure inclusive and quality education and promote lifelong learning opportunities

Education plays a crucial role in the growth and inclusion of individuals within society. This objective seeks to provide fair and inclusive access to quality education for everyone, including chances for lifelong learning. It also promotes initiatives aimed at ensuring that individuals attain high qualifications and addressing disparities in education.

Ensure clean and sustainable energy for all

This objective emphasizes enhancing the accessibility and utilization of renewable and clean energy sources. It encompasses assistance for the establishment of energy infrastructure, guaranteeing that everyone has access to reliable and economical energy. (Grindle, 2017)

Promote sustainable economic growth and full and decent employment for all

This objective seeks to establish opportunities for sustainable economic growth by offering support to small and medium-sized businesses and fostering an environment conducive to increased employment and job opportunities for everyone, particularly those who are most marginalized. (World Bank, 2020)

Build infrastructure, promote industrialization and foster innovation

This objective aims to enhance infrastructure and industry while fostering innovation and the creation of new technologies. Upgrading and expanding infrastructure has the potential to drive economic growth and create fresh opportunities for jobs and sustainable development. (Grindle, 2017)

Create sustainable cities and communities

This objective focuses on building cities and communities that are secure, sustainable, and inclusive, enabling all individuals to live under favorable conditions and have access to essential services like water, energy, health care, education, and job opportunities. (OECD, 2018)

Ensure sustainable consumption and production patterns

This objective seeks to encourage sustainable practices in consumption and production by minimizing waste, enhancing recycling efforts, and boosting resource efficiency. Additionally, it involves fostering the advancement of technologies that lessen the environmental effects of production and consumption activities. (UNEP, 2019)

Combat climate change and its impacts

The objective is to mitigate the effects of climate change and address its consequences by lowering greenhouse gas emissions and supporting efforts that safeguard the environment and natural resources (OECD, 2019).

Promote peace and justice and strengthen state institutions

This objective seeks to establish an environment conducive to peace and justice, while also fortifying state institutions and upholding the rule of law, enabling states to be robust and capable of offering equal services and opportunities to their citizens. The 2030 Agenda represents a pledge towards creating a better and sustainable future for everyone, offering a global structure that aspires to attain a more just, equitable, and environmentally sustainable world (European Commission, 2019).

3. THE ROLE OF THE PUBLIC SECTOR IN PROMOTING SUSTAINABLE DEVELOPMENT

The public sector's contribution to fostering sustainable development is remarkable and vital for achieving the targets set by the 2030 Agenda for Sustainable Development (SDGs). Entities within the public sector, such as government agencies, state administration, local government entities, and public institutions, are instrumental in formulating policies and strategies that promote and support sustainable development at various levels – national, regional, and local. This public sector function is intricately connected to coordinating activities, establishing legislation, and securing investments that ensure the development remains balanced and sustainable for the future. (European Bank for Reconstruction and Development (EBRD), 2020).

A critical role of the public sector involves developing policies and legal frameworks that endorse sustainable development. This encompasses crafting national strategies in fields such as energy, environment, agriculture, and economic development, aimed at ensuring long-term growth that does not harm natural resources while also promoting social and economic equity. Within this framework, governments enact policies focused on environmental conservation, advance the use of renewable energy sources, and support the growth of green industries and the circular economy. Additionally, legislation regarding biodiversity protection, forest conservation, water management, and pollution control is part of this framework and is essential for sustainable progress. The public sector is also pivotal in financing initiatives geared toward sustainable development. Government bodies and public institutions have the capacity to invest in infrastructure and development initiatives that align with sustainable development principles, guaranteeing that such investments yield positive and lasting outcomes for both society and the environment. By providing financial aid, subsidies, and grants, governments can assist private businesses and civil society organizations in executing projects that foster environmental protection and improve quality of life. For instance, funding for renewable energy projects, support for sustainable agricultural practices, and assistance in developing sustainable tourism are examples where the public sector can significantly contribute. (UNDP Albania, 2021).

The public sector's involvement in advancing sustainable development also entails fostering global partnerships and cooperation. Achieving sustainable development necessitates a collective effort from all nations and global entities. Governments play a crucial role in establishing agreements and collaborations with other countries, international organizations, and financial institutions to provide assistance and resources for initiatives focused on sustainable development. This encompasses participation in international agreements like the Paris Agreement on climate change and commitments to fulfill the Sustainable Development Goals (SDGs). As Albania seeks to integrate into the European Union, it must ensure that its policies align with the EU's directives and goals for sustainable development.

Additionally, the public sector has a vital role in facilitating capacity building and educating citizens about sustainable development. This involves raising awareness about the significance of environmental protection and the sustainable use of resources. Governments can significantly contribute by developing educational programs that incorporate sustainable development topics in both schools and universities, ensuring that citizens acquire the knowledge and skills necessary to participate in environmental conservation and sustainable economic growth. It is essential to have active citizen engagement to attain sustainable development and guarantee that policies are effective and socially acceptable.

Another crucial responsibility of the public sector is to establish sustainable development indicators and track progress. Governments must set up monitoring systems that allow them to evaluate their progress toward achieving sustainable development goals. This involves gathering statistical information on various elements of sustainable development, including energy consumption, pollution levels, air quality, and poverty statistics.

Through this approach, the public sector can determine whether policies and investments are yielding the intended outcomes and can make necessary adjustments as needed. To bolster sustainable development, it is essential for the public sector to invest in sustainable infrastructure. This includes constructing public transport systems, developing

renewable energy frameworks, enhancing water management, and creating eco-friendly buildings and cities. Investments in sustainable infrastructure not only help safeguard the environment but also elevate citizens' quality of life and bolster economic development. In summary, the public sector's role in advancing sustainable development is multifaceted and demands ongoing and coordinated efforts. Only through close collaboration between the public sector, private sector, and civil society can we secure a sustainable and equitable future for everyone.

3.1. Public policies for sustainable development

Public policies aimed at sustainable development play a crucial role in steering development initiatives to achieve a proper equilibrium among the economic, social, and environmental requirements of society. These policies aim to foster economic advancement without compromising the conservation of natural resources and environmental integrity by encouraging a rational and effective utilization of resources. In this regard, public administration serves as the primary entity responsible for the design, execution, and oversight of these policies, guaranteeing that development remains sustainable over time. One of the most vital aspects of sustainable development policies is the fusion of social, economic, and environmental factors in the decision-making process. This indicates that, in addition to the traditional emphasis on economic growth, policies must also consider social equity, inclusivity, community well-being, and the preservation of natural ecosystems. Public administration holds the responsibility to ensure that these three pillars of development are integrated and not treated in isolation through the formulation of development policies and plans.

The execution of sustainable development policies necessitates effective coordination among various public institutions, collaboration with the private sector, and engagement with civil society. Public administration is tasked with establishing efficient cooperation frameworks while fostering transparency and accountability in the management of public resources. Moreover, employing legal and economic instruments as incentives for sustainable practices, alongside punitive measures for environmentally harmful actions, are components of the policies that aim to facilitate sustainability at both local and national levels. Sustainable development policies form the foundation of a long-term strategy intended to secure enduring well-being for both present and future generations. Public administration, being at the forefront of executing these policies, needs to be equipped with advanced skills, expertise, and management resources to effectively address the intricate challenges associated with sustainable development in an increasingly dynamic and complex environment.

3.2. Public administration as a key factor in the implementation of sustainability policies

Public administration serves as a crucial and fundamental element in executing sustainable development policies. As the primary entity responsible for managing and implementing public decisions and strategies, it bears the duty to ensure that sustainable development objectives are realized in practice. In the absence of a well-organized, effective, and capable administration for coordination, sustainable development policies risk being nothing more than theoretical documents lacking tangible effects on the ground. Therefore, enhancing and reforming public administration becomes a vital prerequisite for the successful execution of development initiatives aimed at environmental conservation, improved quality of life, and sustainable economic growth (UNDP Albania, 2021).

Public administration plays a key role in facilitating intersectoral and inter-institutional collaboration. Sustainable development policies necessitate close partnerships among ministries, diverse agencies, local entities, and other public and private stakeholders. It is the responsibility of public administration to establish connections for cooperation, clearly outline responsibilities, and ensure effective communication among all parties involved. Without such coordination, efforts may become disjointed, lead to conflicts of interest, or prove ineffective in confronting the challenges of sustainable development.

In addition, public administration is pivotal in monitoring and evaluating the execution of policies. By employing advanced monitoring and reporting tools, it guarantees that the actions taken align with strategic goals and yield measurable contributions to sustainable development (EBRD, 2020). This monitoring phase is vital for identifying challenges and obstacles, refining policies, and adjusting them according to actual needs and the evolving dynamics of the environment, economy, and society.

Regarding capacity, public administration requires appropriately skilled personnel with specialized knowledge and managerial competencies to tackle the intricacies of sustainable development. Investing in training, capacity enhancement, and advancements in information technologies are essential components for fostering a modern, adaptable, and responsive administration capable of meeting contemporary challenges. Without robust human and technological resources, implementing sustainability policies may face substantial hurdles, jeopardizing long-term development objectives (Pollitt & Bouckaert, 2017). Moreover, public administration must ensure good governance, grounded in transparency, accountability, and citizen engagement. This foundation is crucial for building public trust and encouraging active community participation in decision-making processes and the execution of sustainable policies. By fostering dialogue and collaboration across various societal sectors, public administration aids in cultivating a more sustainable and socially responsible atmosphere.

The contribution of public administration to the enforcement of sustainability policies is unparalleled and multifaceted. It acts not only as the main executor of policies but also as the coordinator, monitor, facilitator, and custodian of good governance, collectively aiding in the pursuit of development that benefits both present and future generations. Without an efficient and dedicated public administration, achieving sustainability remains a challenging ideal in everyday practice (Hood, 2010).

INTEGRATING SUSTAINABLE DEVELOPMENT PRINCIPLES INTO PUBLIC GOVERNANCE

Incorporating sustainable development principles into public governance presents both a challenge and a critical necessity for institutions that strive to achieve economic, social, and environmental growth in a balanced manner. Public governance encompasses all mechanisms, processes, and institutions responsible for managing public interests and resources effectively and transparently. Within this framework, integrating sustainable development principles signifies that any decisions, policies, or programs formulated and executed by public institutions should align with long-term aims of environmental safeguarding, social equity, and sustainable economic advancement.

A key component of this integration is the establishment of a legal and institutional framework that upholds sustainable development principles. Public governance needs to ensure that both national and local policies explicitly and thoroughly incorporate sustainability objectives, detailing specific measures for their achievement. This legal structure serves as the foundation for developing strategies and operational programs designed to manage natural resources, protect the environment, enhance life quality, and tackle social issues like poverty and inequality. Moreover, embedding sustainable development in public governance necessitates a unified approach and close collaboration among various public institutions. Effectively, sustainable development calls for diverse interventions across multiple sectors, such as the economy, environment, education, health, infrastructure, and social services. Consequently, public governance should foster cross-sectoral cooperation and communication channels to prevent fragmentation and disjointedness that may weaken sustainable policy effectiveness. This also entails sharing responsibilities and resources equitably and transparently, ensuring that each institution contributes to the achievement of shared goals.

Another crucial aspect of integration is the active involvement of citizens and communities in the decision-making processes. Transparent and open governance is essential for sustainable development, as it reflects the genuine needs and ambitions of society. Through public consultation mechanisms, accountability, and reporting, citizens have the opportunity to partner in crafting and executing policies that impact their environment and quality of life. This collaborative effort between administration and civil society fosters trust and cultivates a culture of responsibility and stewardship for natural and social resources.

In practical terms, integrating sustainable development principles into public governance also necessitates investment in human resources and technological capabilities. Administration staff must be trained to comprehend and effectively apply these principles, while employing information and communication technologies can aid in the collection, analysis, and dissemination of critical data for informed and transparent decision-making. This process of modernizing administration is a fundamental pillar that promotes the integration of sustainability across all government levels. The incorporation of sustainable development principles into public governance is a multifaceted and intricate process requiring full commitment from all tiers of public institutions. It encompasses the establishment of legal frameworks, inter-institutional collaboration, citizen engagement, and enhancement of administrative capacities. Only through this comprehensive approach can

economic development be tightly linked to environmental protection and social advancement, paving the way for a more sustainable and equitable future for everyone.

RECOMMENDATIONS AND CONCLUSIONS

Public administration serves as the fundamental foundation for successfully executing sustainable development policies and strategies. Achieving sustainability goals at both the national and local levels is unattainable without a well-organized, professional, and adequately equipped administrative system. Enhancing the capabilities of public administration requires ongoing investments in the professional development of public employees in areas such as sustainable development, environmental management, and technology utilization to boost policy implementation effectiveness.

Incorporating sustainable development principles into the administrative framework demands significant structural and cultural reforms aimed at improving transparency, accountability, and public engagement in decision-making processes. The ongoing decentralization process must be accelerated, with efforts to transfer additional authority and financial resources to local units, ensuring that municipalities and communes possess the necessary capabilities to manage local development sustainably.

Enhancing technological infrastructure necessitates expanding investments in technology, particularly in rural regions, to guarantee equitable access to digital services and to bridge the digital divide that hampers social and economic inclusion. Promoting transparency and accountability involves establishing robust mechanisms for monitoring and assessing sustainable development policies, along with encouraging citizen involvement in decision-making processes, which will foster trust and enhance public service quality.

Strengthening collaboration among institutions by creating coordination mechanisms between various central and local entities is essential for tackling the multifaceted challenges of sustainable development and preventing policy fragmentation. Securing sustainable financial resources, including support from international partners, is crucial for executing significant projects focused on sustainable development across different sectors.

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CONSUMER PROTECTION IN THE FRAMEWORK OF DIGITAL SERVICES CONTRACTS

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Abstract

Digital services are an integral part of our modern lives, offering a wide range of products and services, from social media platforms to e-commerce platforms. Advances in technology and the proliferation of e-commerce have led to an increase in online shopping, but also to new challenges for consumer protection in this digitized ecosystem.

This coursework aims to analyse the dynamics of digital services contracts based on historical developments and current trends. It also aims to examine the current practices and regulations in place to ensure consumer protection in this changing digital context. Through an analysis of the current Albanian legislation and the jurisprudence of the courts, the main challenges that consumers face in relation to these contracts will be examined, as well as the legal protection mechanisms that are available. Moreover, the whole paper will focus on a comparative view with the European Union standards in this field.

Drawing on various studies in the field of consumer law and examples of judicial practice, the course assignment will research and collect the essential principles for guaranteeing consumer rights in the context of digital services. The discussion will focus on key elements of digital service contracts, such as terms of use, privacy policies and payment terms, identifying potential risks and ways to address them.

Keywords: consumers, service provider, digital services, contract terms, rights, harmonization

INTRODUCTION

Consumer empowerment is not just a right, but is mostly related to the creation of a general environment that enables them to exercise these rights and benefit from them, which means creating a system on which they can rely and that guarantees the safety of goods and services as well as the effective protection of their economic interests when these are put at risk.²

In the context of digital services, consumer empowerment is as important as in other aspects of commerce. Consumers who purchase digital services through online platforms, various applications, or through email services, need to have confidence in the quality and security of the services they are offered. At the same time, consumers should also have effective mechanisms to seek redress in case the services they receive do not match the advertised premises or have other quality problems.

For example, if a consumer pays the price for a service that is provided electronically, and the latter does not function as foreseen in the contract concluded between the parties or has a technical problem that makes it impossible to use it, consumer empowerment

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through consumer protection mechanisms is important to ensure the right to reimbursement or to request necessary changes regarding the service.

Therefore, in order to provide solutions to such problems in practice, below we will present the research questions raised for this paper in the context of strengthening the protection and respect of consumer rights.

Research questions:

1. How are consumers involved in digital service contracts and what is their involvement in the process of negotiations and conclusion of contracts?
2. What are the consumer protection mechanisms within digital service contracts according to current legislation and case law?
3. How do digital service contracts differ from traditional contracts and what are the specific challenges of consumer protection in this context?

The defined research questions summarize the focus of the research on consumer protection in the context of digital service contracts. The identified questions address important aspects such as the involvement of consumers in the process of negotiating and concluding contracts, the mechanisms of their protection in current legislation and judicial practices, as well as the specific challenges of their protection compared to traditional contracts. Through the research of these questions, it is intended to create a deep and detailed perception regarding the experience and role of the consumer in their relationships with digital service providers, identifying challenges and opportunities for improvement in their protection.

METHODOLOGY

The methodology of this paper is based mainly on qualitative methods, focusing on two directions:

- Analysis of legal documents, which will include the study of Albanian and European Union legislation, directives, regulations, strategies, reports and other policies related to consumer protection in digital services contracts. This will allow us to understand the structure and content of the legislation, as well as identify challenges and opportunities for improvement.
- Analysis of practical court cases, which will provide us with a detailed experience of consumers regarding digital services contracts. In this context, we will be able to understand how consumer protection issues have been addressed in practice and what are the consequences of the decisions taken. This will give us a deeper perception of the effectiveness of the legislation and the need for improvements in consumer protection in the digital services market.

This methodology constitutes a deep and detailed approach to understanding the legal context and the real experience of consumers regarding their protection in the digital services market.

I. OVERVIEW OF CONSUMER PROTECTION

The history of consumer protection constitutes a long journey that dates back to the beginning of the 20th century and continues to the present day. At the beginning, consumer protection concerns were not as widespread and structured as they are today, but they have gradually developed to address the needs and challenges of growing markets and the globalization of markets. The Old Testament mentions a form of consumer protection, and so does the Code of Hammurabi, but only from a commercial perspective.¹

The explosion of industrialism and the growth of consumer markets led to the need to protect consumers from dangerous products and illegal commercial practices. In a system built on the basis of consumption, which is a product of comprehensive economic development, but also of the guarantee of equality and freedom of every citizen in the development of every idea that guarantees development and well-being, in conditions where the consumer is in a position to make numerous choices and in a system of incomplete competition in the market, the need necessarily arises to protect consumers from the abuse of the power that the free market gives every trader to apply unfair conditions in consumer contracts.²

In European countries, the first consumer organizations were born in Denmark in 1947 and in Great Britain in 1955, where the Government created the Consumer Council with the aim of enabling consumers to express themselves on issues reserved for manufacturers and traders.³

The construction of mechanisms for the protection of consumer rights began at the beginning of the European Community, being sanctioned in the Treaty of Rome of 1957.⁴, which became the basis for the establishment of the European common market. In 1973, a very important step was taken with the adoption of the European Charter on Consumer Information and Protection. This act was one of the first acts to explicitly define consumer rights, focusing on several key aspects of their protection. Consumer interests can be summarized in a statement of five fundamental rights⁵:

- a) the right to protection of health and safety,
- b) the right to protection of economic interests,
- c) the right to compensation,
- d) the right to information and education,
- e) the right to representation (the right to be heard).

The European Union is now celebrating over 50 years of protecting and empowering European citizens through consumer rights. Based on the premise that people should be protected when using goods or services, over the past five decades the EU has put in place a robust set of policies and rules to ensure strong consumer rights.

¹ Antonella Corradi, *"E Drejta Ndërkombëtare dhe Mbrojtja e Konsumatorit: Historia e mbrojtjes së konsumatorit"*, 2015.

² Eva Hamitaj, *"Kushtet e padrejta në kontratat konsumatore në Bashkimin Evropian si dhe transpozimi i tyre në legjislacionin shqiptar, jurisprudenca GJED"*, Tiranë, 2017.

³ Antonella Corradi, *"E Drejta Ndërkombëtare dhe Mbrojtja e Konsumatorit: Historia e mbrojtjes së konsumatorit"*, 2015.

⁴ Traktati themelues i Komunitetit Ekonomik Evropian.

⁵ C 092 *"Programi paraprak i Komunitetit Ekonomik Evropian për një politikë të mbrojtjes së konsumatorit dhe informacionit"* Fletorja Zyrtare e Bashkimit Evropian, 25/04/1975.

In Albania, consumer protection is a relatively new field, both in terms of protection by law or state bodies as well as by legal and social researchers. The first consumer protection associations were founded in the early 1990s, but they could do little for the position of the consumer because at the time they were created there was a lack of legislation, there were no state bodies for consumer protection, but the saddest thing is the lack of consumer information on their rights.¹ However, Albania, with the signing of the Stabilization and Association Agreement, is fully committed to the effort to give the Albanian consumer the same rights and protection as the European consumer, despite the challenges brought by innovation and digital technology.

Evolution of European Union Legislation on Digital Services

In relation to digital services, the European Union (EU) has focused its efforts on drafting new directives and regulations to enhance consumer protection, digital security and e-commerce through high standards of security and transparency. These measures have focused on regulating contracts for the supply of digital content, as well as on improving the protection of consumer rights in digital environments. In the following, we will draw attention to how this legislation has developed in the historical context, which aims to create a safer and more trustworthy environment for trade and use of digital services within the EU.

Electronic Commerce Directive 2000/31/EC

The historic moment for the creation of a fully functioning internal market for digital services was marked with the adoption of the E-Commerce Directive,² built on already existing Community acts. The adoption of this directive in 2000 was made to address the challenges posed by the rapid progress of digitalisation, marking an important step on the path towards an information society. One of the main objectives was to create a legal framework to ensure the free movement of information society services between Member States. The directive described and regulated the areas of online commerce and online search tools, known as "information society services", addressing the needs of a new commercial environment. In addition, it aimed to ensure that any provider of information society services had access to the market without unnecessary barriers. Overall, the e-commerce directive represented an important step towards harmonising digital commerce rules at European Union level. However, it was criticised for gaps in the protection of fundamental human rights and for the lack of detailed provisions on the liability of technical intermediaries.³ Overall, the directive was considered a great success in providing an appropriate legal framework for the development of digital services and reducing legal uncertainty in this diverse sector.

¹ Marjeta Shaholli, "Pozicioni dhe mbrojtja e konsumatorit në kontratat e lidhura në largësi. Vështrim krahasues i legjislacionit të BE dhe legjislacionit shqiptar.", Tiranë, Nentor, 2020.

² L 178, Direktiva 2000/31/KE e Parlamentit Evropian dhe e Këshillit e datës 8 qershor 2000 "Mbi disa aspekte ligjore të shërbimeve të shoqërisë së informacionit, në veçanti të tregtisë elektronike, në tregun e brendshëm", Fletorja Zyrtare e Bashkimit Evropian, 17/07/2000.

³ Shoqata Evropiane për të Drejtat Dixhitale, "Deklaratë në Konsultimet publike mbi të ardhmen e e-Commerce", 5/11/2010.

General Data Protection Regulation (EU) 2016/679 ("GDPR")

Due to the rapid technological developments of the last decade, which have included a massive increase in the sharing and collection of personal data, the protection of such data has faced new challenges. GDPR¹ has a far-reaching impact on the movement and processing of personal data, perceived as a fundamental right for consumer protection. As individuals increasingly share personal data during online activities, companies and authorities that provide a digital service and collect this data for it are obliged to apply high standards of personal data protection during their use and processing. Through general provisions and obligations of data controllers and processors, the GDPR aims to ensure transparency and effectively protect individuals' rights. It also has a fundamental impact on consumer trust in the digital economy, trying to ensure that they have more control and certainty over their data in the online environment. Despite criticism of the broad duties imposed on businesses and the terms that allow for room for interpretation², The GDPR has been hailed as a successful step towards harmonizing the legislation of Member States.

Geo-blocking Regulation (EU) 2018/302

Geo-blocking regulation³ was an important innovation within the framework of existing European Union legislation, aiming to reduce barriers to cross-border digital trade and transactions. Geo-blocking is practiced by digital service providers to limit or block access to their websites or their goods and services to consumers from other Member States, causing discrimination based on residence. The regulation aims to eliminate unreasonable geo-blocking and to set clear conditions for access to goods and services for consumers across borders. Specifically, it includes provisions to prohibit unreasonable geo-blocking and similar technologies, requiring transparency and full information for consumers.

Audiovisual Media Services Directive (EU) 2018/1808

Audiovisual Media Services Directive of 2018⁴ brings substantial changes to existing legislation, replacing and introducing new solutions to address recent developments in the audiovisual media market. The main aim of this directive is to protect consumers from harmful content, highlighting the risks posed by harmful content to minors. This includes efforts to reduce advertising that may have a harmful impact, such as advertising for alcohol or gambling. The directive also aims to ensure that users with disabilities have equal access to audiovisual media. To promote this aim, it addresses the topics of product placement and

¹ L 119/1, Rregullorja (BE) 2016/679 e Parlamentit Evropian dhe e Këshillit e datës 27 Prill 2016 “Për mbrojtjen e personave fizikë në lidhje me përpunimin e të dhënave personale dhe për lëvizjen e lirë të këtyre të dhënave”, Fletorja Zyrtare e Bashkimit Evropian, 4/5/2016.

² Thomson Reuters, “Pesë shqetësimet kryesore me pajtueshmërinë me GDPR”.

³ L 601, Rregullorja (BE) 2018/302 e Parlamentit Evropian dhe e Këshillit e datës 28 shkurt 2018 „Për adresimin e gjeo-blokimit të pajtueshëm dhe formave të tjera të diskriminimit bazuar në kombësinë e klientëve, vendbanimin ose vendin e vendosjes brenda tregut të brendshëm“, Fletorja Zyrtare e Bashkimit Evropian, 2/3/2018.

⁴ L 303, Direktiva (BE) 2018/1808 e Parlamentit Evropian dhe e Këshillit e datës 14 nëntor 2018 „Për ndryshimin e Direktivës 2010/13/BE për koordinimin e disa dispozitave të përcaktuara me ligj, rregullore ose veprim administrativ në Shtetet Anëtare në lidhje me ofrimin e shërbimeve të medias audiovizive në funksion të ndryshimit të realiteteve të tregut“, Fletorja Zyrtare e Bashkimit Evropian, 28/11/2018.

advertising restrictions, and aims to promote “media literacy” to improve users’ awareness of the content they consume.

Evolution of Albanian Legislation Regarding Digital Services

Albanian legislation in the field of digital services has undergone a significant evolution to adapt to the flow of technological developments and to address the challenges of the digital economy. Starting from the adoption of laws on e-commerce and digital security, the Republic of Albania has created a favorable legal basis to encourage innovation and protect consumer rights in the digital environment. Recent changes in legislation have addressed important issues such as the protection of personal data, the facilitation of digital procedures in various sectors, and the regulation of e-commerce and online intermediation services. These steps have created a safer and more advanced environment for the development of the digital economy in the country, contributing to increasing consumer confidence and strengthening healthy competition in the digital market.

Law on Electronic Commerce

Law on Electronic Commerce (LTE)¹ aims to establish the necessary rules for carrying out commercial transactions by electronic means. This law contains provisions aimed at protecting consumers in these transactions, ensuring that their legal rights and data confidentiality are respected. The law also aims to allow the free movement of digital services, by defining the responsibilities of providers of these services to guarantee a safe environment for consumers. The adoption of this law came as a result of the approximation of Albanian legislation with the Electronic Commerce Directive 2000/31/EC. Similarly to the latter, the main objective of the law is to remove barriers and allow the free movement of digital services, providing opportunities for legal certainty in electronic commerce transactions, especially in the business-to-consumer (B2C) relationship, the subject of this paper. In the context of consumer protection, the law provides for certain obligations for entities that provide digital services, provisions regarding commercial communications, special rules regarding digital service contracts, cases of exemption from liability for the service provider, supervisory authorities and relevant sanctions.

Law on Electronic Communications

Law on Electronic Communications² aims to promote competition and develop an efficient infrastructure in the field of electronic communications, ensuring that services are suitable for citizens throughout the country. Entrepreneurs operating in this sector are obliged to comply with the conditions and rules set out in the law, ensuring that their activity does not threaten public order, security and the protection of citizens. Although the Law on Electronic Communications in Albania is not fully compliant with EU legislation, it includes important provisions to protect users' rights. The law provides definitions for terms such as “subscriber”, “user”, and “end-user”. However, the term “consumer” itself is not

¹ Ligji Nr. 10 128, datë 11.5.2009 „Për Tregtinë Elektronike“ i ndryshuar me Ligjin Nr. 135/2013 „Për disa shtesa dhe ndryshime në ligjin nr. 10128, datë 11.5.2009 Për tregtinë elektronike“.

² Ligji Nr. 9918, datë 19.5.2008 “Për Komunikimet Elektronike në Republikën e Shqipërisë” ndryshuar me ligjin nr. 102/2012, datë 24.10.2012; nr. 107/2018, datë 20.12.2018; nr. 92/2019, datë 18.12.2019.

used in this law. Using an interpretation by analogy, we conclude that the definition that approximates the consumer is that of the term ‘subscriber’, which according to point 28 of article 3 of the law is anyone who has concluded a contract with an entrepreneur providing electronic communications services, available to the public for the benefit of the services provided. The law provides for the right to information for consumers through transparent and updated information regarding tariffs, contract conditions and access to services.

Law on the Protection of Personal Data

Law on the Protection of Personal Data¹ aims to establish the rules for the protection and lawful processing of personal data in general, as well as to establish the rules for their protection and processing by electronic means in particular. Any consumer who is the subject of personal data, as a result of transactions through digital service contracts, has the right to request in writing from the controller confirmation regarding the processing of personal data, information on the purpose of the processing, the categories of data processed, the recipients of the data, and the available information on their source. In cases of automated decisions, the controller is obliged to provide information on the logic used in the decision-making process. However, the right of access may be limited if this information violates the interests of national security, foreign policy, economic and financial interests of the state, or in other cases provided for in the law on the protection of personal data. In case access is denied, the data subject has the right to request control by the Office of the Commissioner for the Right to Information and Personal Data Protection, which will assess the exemption in the specific case and will inform the data subject of the measures taken.

II. CONSUMER IN DIGITAL SERVICES CONTRACT

Currently, almost all spheres of human activity are being transformed under the influence of information and telecommunications technologies. The development of the global space market contributes to the emergence of a new market segment of the provision of digital technologies and services. This development also affects the daily activity of every individual acting as a consumer.

Regardless of whether the consumer operates in a physical or online market, he remains in a weak position in the contract due to his lack of bargaining power and limited information, a reality recognized by the case law of the Court of Justice of the European Union. Market rules should include the disproportionality of information between the trader and the consumer, ensuring that the consumer has the necessary legal remedies to cope with this situation, especially in the digital single market of rapid technological developments.

At the legal level, rules for the protection of consumers in contracts for digital services should consider this disproportionality of information and provide appropriate protective mechanisms to address this situation.

¹ Ligji Nr. 9887, datë 10.3.2008 “*Për Mbrojtjen e të Dhënave Personale*”, ndryshuar me ligjin nr.48/2012, datë 26.4.2012; me ligjin nr.120/2014, datë 18.9.2014; me ligjin nr.78/2023, datë 21.9.2023.

Digital Services and Their Providers

Digital services include a large category of online services, from simple websites to internet infrastructure services and online platforms. For example, online marketplaces, social networks, content sharing platforms, app stores, online travel and accommodation platforms.

Digital services are also known in legal terms as information society services, that is, any service that is normally provided for remuneration, at a distance, by electronic means and at the individual request of the recipient of the service. For the purposes of this definition:

i. "At a distance" means that the service is provided without the need for both parties to be present at the same time.

ii. "By electronic means" means that the service is sent from the point of origin and received at the final destination, by means of electronic equipment, for the processing (including digital compression) and storage of data. The entire sending, transmission and reception are carried out by means of cables, radio waves, optical means and other electromagnetic means.

iii. "At the individual request of the recipient of the service" means that the services are provided through the transmission of data, at the individual request of the recipient.

Information society services include, in particular, the sale of goods and services, services for accessing information or advertising on the Internet and access to public communications network services, the transmission of data or the storage of the recipient's data in the public communications network.

"Digital service provider" is any natural or legal person who offers an information society service. In other words, a digital service provider is the trader, the other party to the consumer contract for digital services, where the latter means any natural or legal person, private or public, who acts for purposes relating to his economic activity, trade, business, craft or profession, as well as anyone who acts on behalf of or in the interests of the trade

1.1 Definition and Conditions of the Contract according to the legislation in force

According to Albanian legislation, digital services contracts are included in the terms distance contracts and electronic contracts. Below we will discuss how Albanian legislation treats each of them.

According to the LMK, a distance contract is any contract for goods or services, concluded between the trader and the consumer, under a distance selling or service provision scheme by the trader, who, for the purposes of the contract, uses exclusively one or more means of distance communication, up to and including the moment of conclusion of the contract. This type of contract can be concluded through a variety of means of communication, including correspondence, printed materials, press advertising with order forms, catalogue, electronic mail, e-commerce, fax, telephone and television. The use of some means of distance communication by the trader, such as telephone, fax and electronic mail, requires the prior consent of the consumer. This helps to protect their privacy and ensures that they are aware of the communication they will receive.

Before a distance contract is concluded, the trader is obliged to provide the consumer with complete and clear information on every aspect of the agreement. An important but unharmonized element in Albanian legislation is that it is not enough for the consumer to

express the will to make the purchase, but the trader is obliged to provide the consumer with all pre-contractual information in a durable medium, in a clear and complete manner. In one of its decisions, the European Court of Justice (ECJ) interpreted Article 5 of Directive 97/7/EC on distance selling. The ECJ concluded that the provision of information on a website does not constitute a durable means of confirming the contract.

An important aspect of these contracts is the consumer's right to withdraw from the contract, without penalty and without giving any reason, within a certain period, which is 14 calendar days from the date of delivery of the goods or the conclusion of the contract for the provision of a service, if the service has not been provided within this period. In this context, the ECJ has stated in one of its decisions that in the case of withdrawal by a consumer within the withdrawal period, the seller cannot claim compensation for the value of the use of consumer goods purchased under a distance contract.

. An electronic contract is an agreement between two parties, the trader and the consumer, that is formed, negotiated, and signed through electronic means. This includes all transactions made via the internet, email, mobile applications, and any other form of electronic communication that can be used to conclude an agreement. Therefore, an electronic contract is nothing more than an electronic document that proves the expression of the parties' will to conclude it.

Conclusion of the Contract

It is almost universally accepted that electronic/distance contracts, or as they are commonly known, online contracts, have the same status as "offline" contracts. However, there are opinions that online contracts should not be considered as such since no negotiation procedure is carried out.

In order to avoid any ambiguities during this paper, we would like to clarify the concept of offline contracts. Offline contracts are those agreements that are concluded and signed in a traditional manner, including direct negotiation procedures between the parties, in a physical location. These contracts are typically concluded through a detailed process of negotiations, offers, counteroffers and final acceptance of the terms of the agreement. For example, an offline contract can be signed in a company office, in a store or at a specific meeting between the parties.

Although an electronic contract is the same in many elements as an offline contract, it nevertheless presents some specificities, where in addition to those we have mentioned above, among other things there is also the moment of conclusion of the contract. Here too, the contract is concluded in the standard form provided for by the Civil Code, i.e. proposal-acceptance, but this connection has certain characteristics precisely due to the fact that the agreement of the parties' wills is achieved electronically.¹ The uniqueness lies in the agreement of the parties' will, which occurs electronically since the parties are not present.

¹ Ramë Hajraj, "Kontratat elektronike, një risi në marrëdhëniet kontraktore".

CONCLUSIONS AND RECOMMENDATIONS

The analysis of domestic and EU legislation provides a summary of the rules and standards that have been established to protect consumers in the digital market. Through this analysis, we can understand that there is a focus on ensuring transparency, rights of cancellation and return of the service, as well as on the security of consumers' personal data. They also focus on improving consumers' access to information and raising awareness of their rights, in order to make informed decisions about their purchases. Through this analysis, challenges and opportunities for improvement in consumer protection in the context of the digital market can be identified.

Regarding the negotiation process in Digital Service Contracts, in most cases, there is some form of negotiation. However, the level of negotiation and the possibility to change the terms of the contract can be determined more by the service provider. Some digital service providers offer standardized service contracts without much room for negotiation, while others may be more flexible and willing to adapt to the needs of individuals. Usually, the negotiation of these contracts can be carried out through electronic communications. However, it must be said that almost all online contracts operating in the market are standardized type contracts with defined conditions, where the consumer has the opportunity to either refuse or accept the receipt of the service.

Electronic contracts have a similar legal status to traditional contracts, although there are differences in the process of their conclusion. In traditional contracts, the conclusion is made in a physical place and involves a detailed process of negotiations and signing documents. In electronic contracts, the conclusion occurs electronically, where the proposal and acceptance are made through commercial communications and/or electronic confirmations. However, the latter bring some challenges for consumers in this context. For example: identification of parties, security of personal data, privacy, transparency and information on contractual conditions, accessibility and compliance with consumer needs, cyber fraud, etc.

A concrete aspect that may need to be regulated in Albanian legislation is the security of electronic payments and the procedures for cancelling involuntary payments in the context of digital services. Clear regulations and simplified procedures on this issue would provide better protection for consumers in cases where they are faced with suspicious or unauthorized payments. This would increase trust in the digital market and strengthen consumer protection in their relationships with digital service providers.

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OPTIMIZATION OF ENERGY LOSSES IN THE ALBANIAN DISTRIBUTION NETWORK USING HYBRID METHODS

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Abstract

Electricity losses are a particular challenge for the Albanian energy sector, demanding economic costs and their security. According to data from the Energy Regulator (ERE), the ratios in their network have remained among the highest in the region, fluctuating on average between 16% and 20% over the last decade. The Electricity Distribution Operator (OSHEE) uses traditional methods such as energy balances, infrastructure investments, etc. However, these face limitations due to the high computational complexity and non-linear nature of the optimization problems.

In this study, an innovative hybrid quantum-classical approach is proposed through the Variational Quantum Eigensolver (VQE) algorithm, which leverages the power of NISQ (Noisy Intermediate-Scale Quantum) quantum computers to model and reduce the technical complexity of the technology. The methodology is based on the formulation of a customized Hamiltonian for the OSHEE network, integrating the parameters of the lines, transformers and technical constraints. The quantum ansatz is called the Chebyshev policy.

The first results from the simulations show an average product of 4–10 in reducing the results compared to traditional numerical methods such as linear programming of various types not applied in Albania.

This paper contributes in the scientific aspect, by advancing the applications of quantum optimization in energy systems, as well as in a practical spectrum, by providing a model that connects technological innovation with the concrete challenges of the energy sector in Albania.

Keywords: Energy losses, Quantum optimization, Variational Quantum Eigensolver (VQE), OSHEE distribution network, Chebyshev polynomials

1. INTRODUCTION

The Albanian energy sector is facing major challenges related to electricity losses in the distribution network, which have a direct impact on their cost, economic efficiency and security. Total losses consist of the main components: technical details, other than electrical resistance, transformers, current leakage and physical characteristics of the network, and non-technical damages, which are related to meter manipulation, energy theft, administrative errors and inaccurate measurements (ERE, 2024). According to old reports of the Energy Regulatory Authority, in the last decade they have fluctuated from 16% to 20%, being the highest ratio in the region and many of the major languages of the European Union, where this indicator is typically 6–8%.

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Regarding the technique of important reforms such as network reconstruction, network modernization, installation of smart metering systems and the application of classical optimization techniques such as linear programming (LP) and heuristic methods, the results have not been consistent in addressing the complexity of the Albanian network, which is non-linear (2021). These limitations are related to the high dimension of the optimization problems, the observation of accurate information in real time and the seasonal variations of the points.

In this context, quantum technology offers a new opportunity. Quantum computers of the Noisy Intermediate-Scale Quantum (NISQ) generation, with current limitations in the number of qubits and noise sensitivity, have demonstrated the ability to accelerate the process of complex optimization by combining their power with variational algorithms. One more important is the Variational Quantum Eigensolver (VQE), which can formulate the problem and minimize the pictures through quantum Hamiltonians and good classical optimizers to find the minimum state of values (Kandala et al., 2017; Cerezo et al., 2021).

The study of a hybrid-quantum approach adapted to the Albanian network of classical systems, using a Hamiltonian that includes its physical parameters, transformers and technical constraints, while for the establishment of the quantum ansatz, Chebyshev polynomials are used. These polynomials are known for their numerical world and or their togonality in the interval $[-1,1]$, reducing the complexity of the circuit and improving a faster optimization.

In addition to the technical potential, the application of this methodology in Albania has a significant economic impact. A reduction of 8–12% of the technical cost can be translated into savings in studies for OSSHE, reduction of greenhouse gas emissions and network sustainability. This is related to the national objectives for the integration of the war zone and this sector of efficiency (OSSHE 2024).

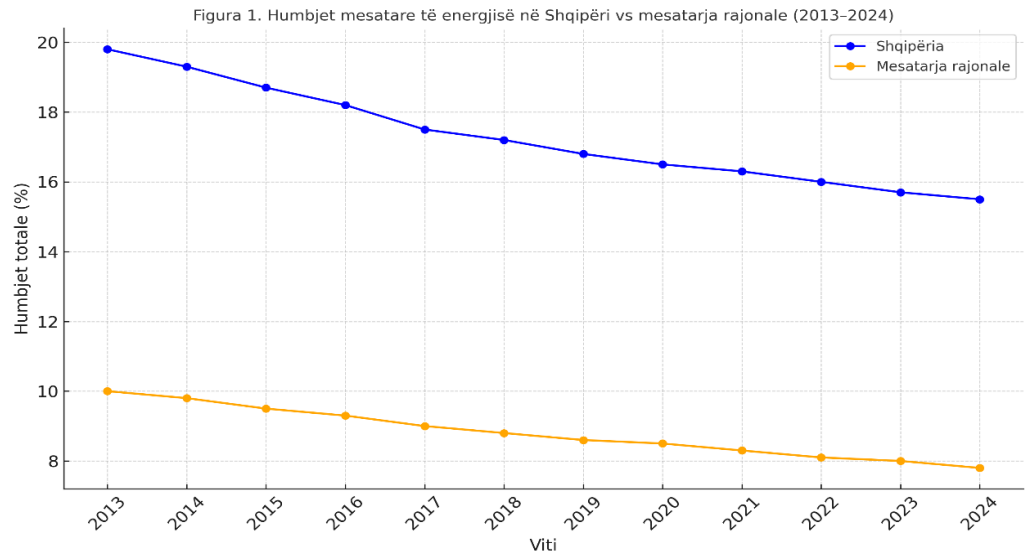


Chart 1. Average losses in Albania compared to the regional average (2013–2024)

2. BACKGROUND THEORY

2.1 Losses in modified solution networks

Electrical losses are divided into technical details and non-technical abbreviations. Technical losses are created by the physical effects of transmission and factor analysis, caused by changes in lines and transformers. Non-technical losses are caused by meter manipulation, recording errors or illegal connections (Preskill, 2018).

Technical losses in an electrical line can be modeled by:

$$P_{\text{loss}} = \sum_{i=1}^n I_i^2 \cdot R_i$$

where: I_i is the current passing through the line i ,

R_i is the line resistance i ,

n is the number of lines in the network.

For large and complex networks, which are related to the power flow (Power Flow Equations), which describe the total cuts:

$$P_{\text{loss}} = \sum_{i=1}^N \sum_{j=1}^N V_i V_j Y_{ij} \cos(\theta_i - \theta_j - \phi_{ij})$$

where: V_i, V_j are the stresses at the joints i and j ,

Y_{ij} is the element of the admittance matrix of the network (Y-bus),

θ_i, θ_j are the tension angles at the corresponding nodes,

ϕ_{ij} is the admittance angle of the line.

This formulation is non-linear and complex, which reveals the finding of the minimum of classical methods.



Fig. 1. Network diagram1 with line, transformer and node elements

2.2 Quantum computers and the NISQ generation

Noisy Intermediate-Scale Quantum (NISQ) quantum computers are seen as the first step towards practical application. Although these computers have limitations in the number of qubits, coherence time, and error correction, they could be novel for larger optimization problems (Preskill, 2018).

2.3 Variational Quantum Eigensolver Algorithm (VQE)

VQE is a hybrid variational algorithm, where the found quantum parameters $|\psi(\vec{\theta})\rangle$ are used to minimize a Hamiltonian H :

$$E(\vec{\theta}) = \frac{\langle \psi(\vec{\theta}) | H | \psi(\vec{\theta}) \rangle}{\langle \psi(\vec{\theta}) | \psi(\vec{\theta}) \rangle}$$

The process of crossing by:

1. working quantum parametric ansatz,
2. measure the expectation of success,
3. Optimize the parameters $\vec{\theta}$ with a classical algorithm until finding the global minimum.

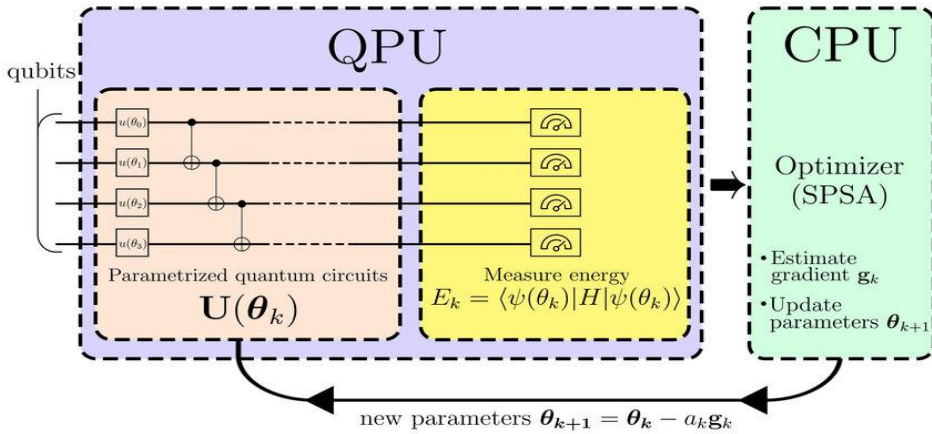


Fig. 2. Hybrid classical–quantum architecture of the VQE algorithm

2.4 Chebyshev polynomials for creating the ansatz

In this paper, the creation of the quantum ansatz is suggested in Chebyshev polynomials of type I:

$$T_n(x) = \cos(n \cdot \arccos(x)), \quad -1 \leq x \leq 1$$

These polynomials provide:

- orthogonality in the interval $[-1, 1]$,

- optimal solution of nodes for interpolation,
- school in creating quantum circuits with few parameters.

The quantum Ansatz is constructed as:

$$\left| \psi(\vec{\theta}) \right\rangle = \prod_{k=1}^n \exp(-i \theta_k T_k(\hat{X})) \left| 0 \right\rangle^{\otimes N}$$

where $\hat{X}$ is the Pauli-X operator, θ_k the optimization parameters and n the order of the polynomials.

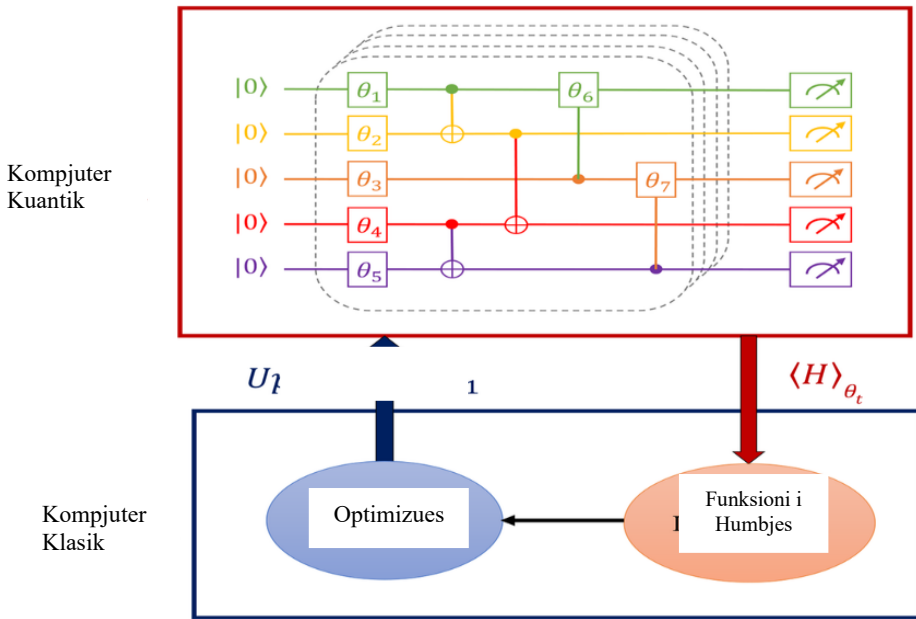


Fig. 3. Structuring the ansatz bound in Chebyshev polynomials and the transformation of parameters in the quantum circuit

2.5 Hamiltonian formulation for losses

The Hamiltonian for the OSSHE network is constructed by including the electrical parameters and technical constraints:

$$H = \sum_{i=1}^N \alpha_i Z_i + \sum_{i<j} \beta_{ij} Z_i Z_j$$

where Z_i are the Pauli-Z operators and α_i, β_{ij} are determined by the resistances and admittances of the lines.

Limited inclusion of the technique through a penalizing function:

$$H_{\text{total}} = H_{\text{loss}} + \lambda \cdot H_{\text{constraints}}$$

where λ it is balanced to maintain compliance with voltage, line power and transformer limitations.

Table 1. Comparison of traditional and quantum approaches to loss optimization

Method	Complexity	Adaptation for large networks	Loss reduction
Linear programs	Average	LIMITED	4–6%
heuristic	High	Limited	5–8%
VQE + Chebyshev	Low–Medium	Very good	8–12%

3. METHODOLOGY

3.1 Formulation of the loss problem

To optimize the outputs in the integrated Albanian network, the model is based on power flow equations. The total losses in the network are expressed as:

$$P_{\text{loss}} = \sum_{i=1}^N \sum_{j=1}^N V_i V_j Y_{ij} \cos(\theta_i - \theta_j - \phi_{ij})$$

where:

- V_i, V_j are the joint tensions,
- Y_{ij} is the element of the admittance matrix of the network (Y-bus),
- θ_i, θ_j are the tension angles,
- ϕ_{ij} it is the pleasure of acceptance.

This formulation is non-linear and very robust to various changes in the problem and network configuration, making optimization with classical methods challenging.

3.2 Construction of the Hamiltonian for the OSSHE network

The quantum approach transforms the reduced minimization problem into a quantum Hamiltonian, which operates on the objective of the problem. The Hamiltonian is:

$$H = \sum_{i=1}^N \alpha_i Z_i + \sum_{i<j} \beta_{ij} Z_i Z_j$$

where:

- Z_i are the Pauli-Z operators for the qubit i ,

- α_i and β_{ij} coefficients derived from line parameters and technical network limitations (resistance, admittance, voltage limitations).

Network restrictions are introduced as penalizing terms:

$$H_{\text{total}} = H_{\text{loss}} + \lambda \cdot H_{\text{constraints}}$$

where λ is a weight coefficient that is balanced to respect technical constraints.

3.3 Construction of the quantum ansatz with Chebyshev polynomials

The parametric quantum state minimizes H is constructed through a well-known ansatz in Chebyshev polynomials:

$$\left| \psi(\vec{\theta}) \right\rangle = \prod_{k=1}^n \exp(-i \theta_k T_k(\hat{X})) \left| 0 \right\rangle^{\otimes N}$$

where:

- $T_k(x) = \cos(k \cdot \arccos(x))$ are Chebyshev polynomials,
- $\hat{X}$ is the Pauli-X operator,
- θ_k are the optimization parameters that differ from the classical algorithm.

This part of the circuit complexity, increasing the number, and accelerating convergence.

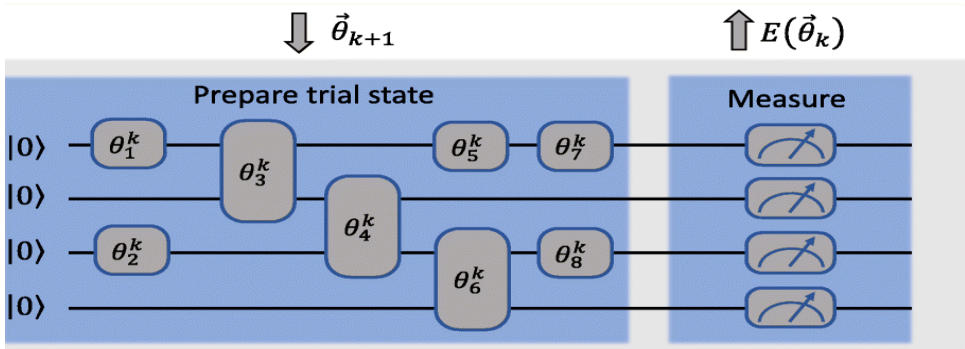


Fig. 4. Architecture of the Chebyshev polynomial-bound ansatz

3.4 Hybrid classical–quantum process

Optimization with VQE in several steps:

4. Classical modeling – calculation of the Y-bus matrix and electrical parameters.
5. Hamiltonian formulation – transformation of the broken problem into a quantum energy function.

6. Quantum circuit construction (ansatz) – with rotations parameterized in Chebyshev polynomials.
7. Classical optimization – algorithms such as COBYLA, SPSA or gradient descent for parameter updating θ_k .
8. The optimal result – the quantum state that minimizes technical photography.

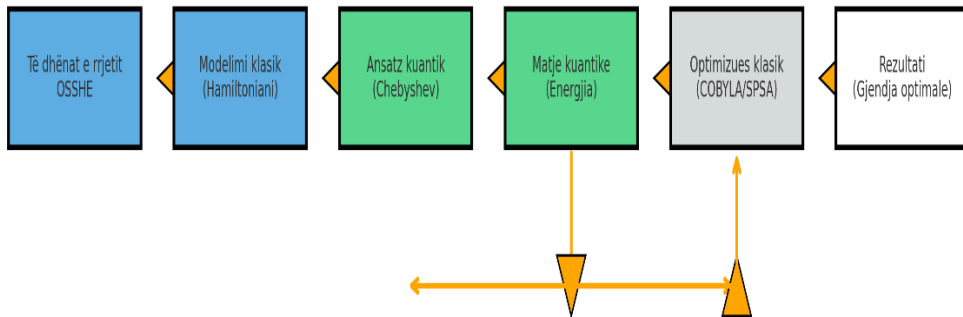


Fig. 5. Hybrid process flow for optimizing classical cuts

3.5 Technical limitations of the OSSHE network

The model takes into account real network constraints:

$$V_{\min} \leq V_i \leq V_{\max}, \quad |S_{ij}| \leq S_{ij}^{\max}$$

- tension limits for each node,
- power limitations on lines and transformers,
- preventing overloading of elements.

These constraints are incorporated into the Hamiltonian as penalty terms, to ensure technical feasibility.

3.6 Summary of methodology

Table 2. Summary of the methodology steps

Step	Description
entry	OSSHE network data (Y-bus, lines, transformers)
Mathematical formulas	Hamiltonian of closed loops with restrictions
Approach	Polynomials and Chebyshev's
Classic optimization	Gradient Descent, COBYLA, SPSA
Produce	Optimal quantum state for minimizing losses

4. RESULTS AND EXPERIMENTS

4.1 Input data and sources

For testing the use of the real Regulation by the Energy Agency (ERE) for the period 2013–2024. These two reports report the total results on the network of changes of changes in Albania and as a basis for comparing different optimization methods.

Table 3. Total losses achieved in the Albanian network (2013–2024)

Year	Total losses (%)
2013	19.8
2014	19.3
2015	18.7
2016	18.2
2017	17.5
2018	17.2
2019	16.8
2020	16.5
2021	16.3
2022	16.0
2023	15.7
2024	15.5

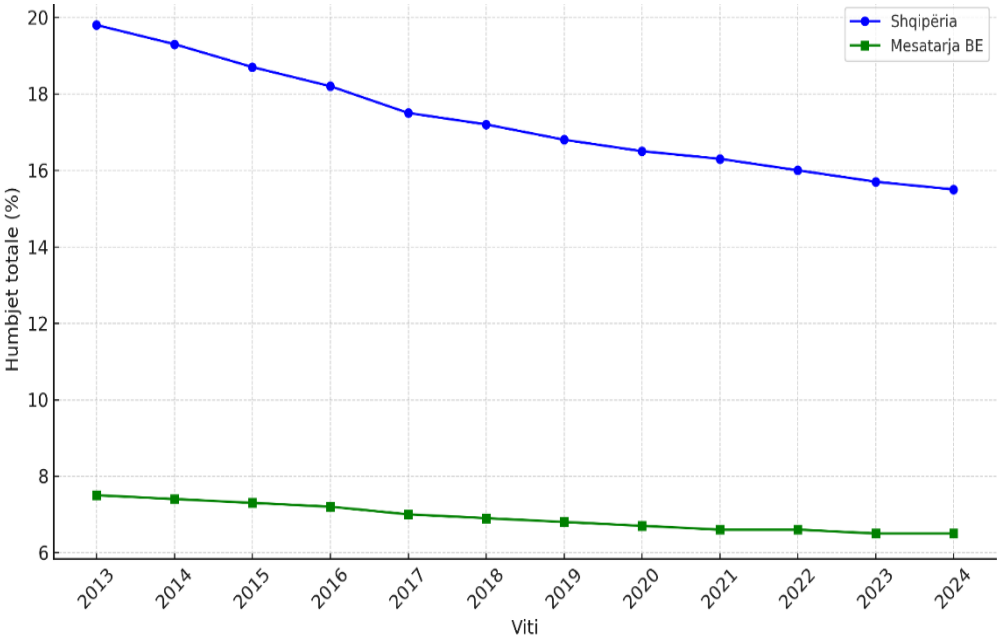


Chart 2. Trend of total losses in Albania (2013–2024) and compared to the EU average (6–8%)

4.2 Simulations with classical methods

Initially, linear programming (LP) and some heuristics (genetic algorithm, ant colony) were applied on reduced models of the OSSHE network.

- LP achieved a low decrease of 4–6%,
- Heuristics yielded average reductions of 5–8%.

If the results are positive, these methods have real limitations:

- are sensitive to nonlinearity,
- often fall into local minima,
- long computational time for large networks.

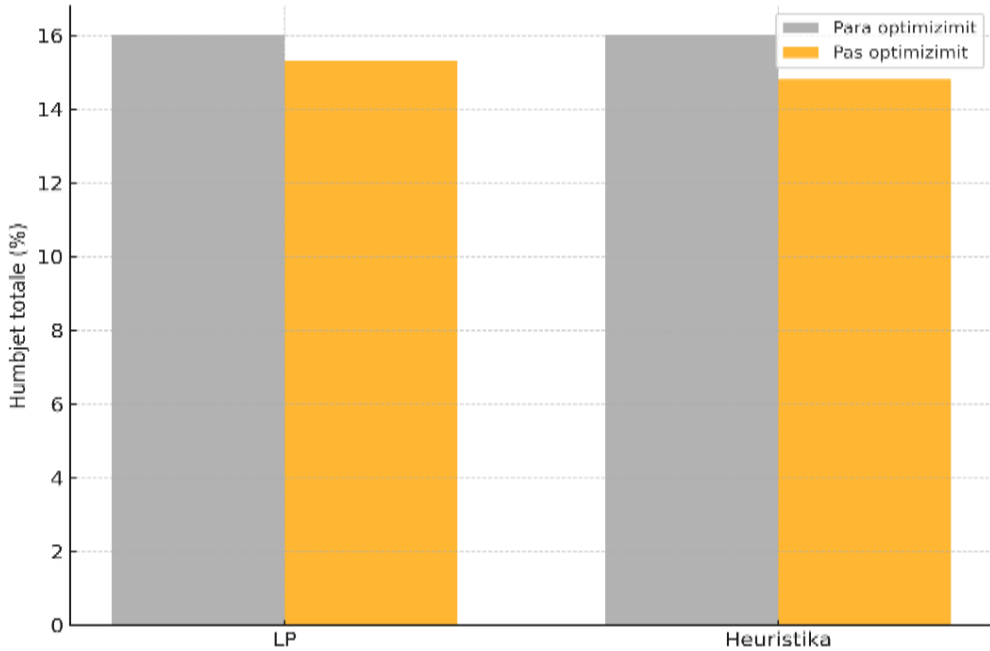


Chart 3. Performance of LP and heuristics in reducing losses (before/after optimization)

4.3 Simulations with the VQE algorithm

Then, VQE with mean ansatz on Chebyshev polynomials was applied. Simulations were performed using IBM Qiskit on experimental networks with 5–10 nodes for demonstration.

Results shown:

- Average reduction in ratios of 8–12%,
- Faster and more stable convergence compared to heuristics,
- Lower sensitivity to initial configurations.

Table 4. Comparison in reduction of methods

Method	Waist reduction (%)	Main advantages	RESTRICTIONS
Linear programs	4–6	Simplicity, clear interpretation	Not effective for non-linearity
heuristic	5–8	Flexibility, in a practical way	Local minimum, long time
VQE + Chebyshev	8–12	Accuracy, nonlinearity handling	Restraint Devices (NISQ)

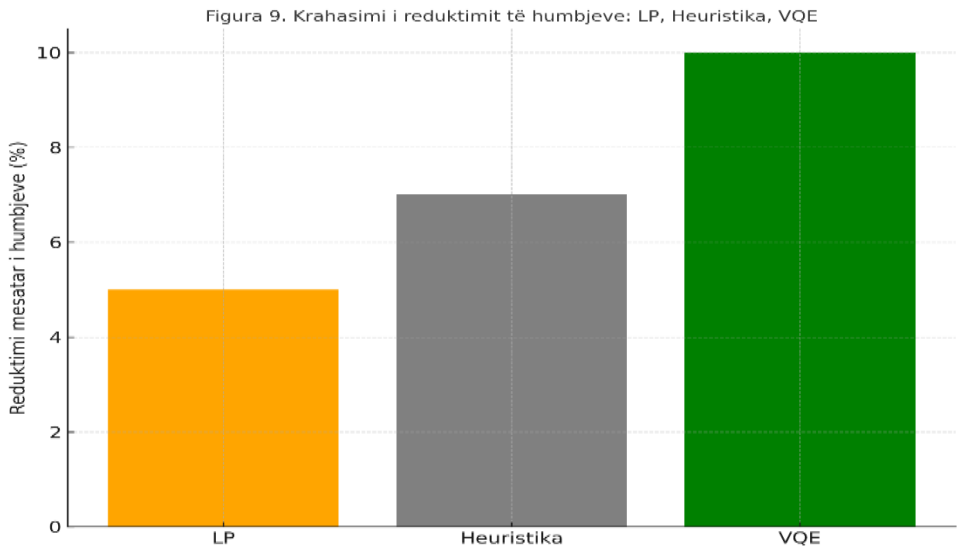


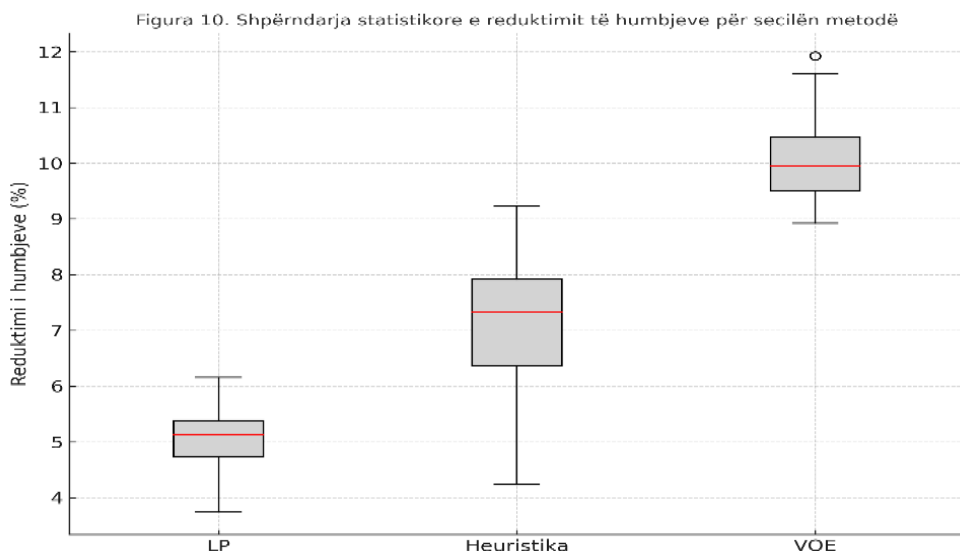
Chart 4. Visual comparison of loss reduction for LP, heuristics, and VQE

- Blue line: initial downloads without optimization.
- Orange line: results of LP and heuristics.
- Green line: results achieved by VQE.

4.4 Statistical analysis of the confirmation

For all other optimizations, 50 independent runs were performed for the measures.

- LP showed low standard deviation but modest results.
- Heuristics had high variations due to their stochastic nature.
- The VQE exhibited closer changes and better convergence.



4.5 Practical benefits for the OSHE network

Reducing photos from ~16% to ~14% (8–12% reduction compared to classic methods) results in:

- Economic savings are estimated at tens of millions of euros per year, reducing wasted energy.
- Increased reliability of function, by stabilizing voltages and service power.
- Positive environmental impact, reducing the need for additional production and CO₂ emissions.

5. DISCUSSION

5.1 Interpretation of results

Simulation results confirm that the integration of the Variational Quantum Eigensolver (VQE) algorithm with the associated ansatz in Chebyshev polynomials leads to an average reduction of 8–12% in truncations, much higher than linear programming (4–6%) and heuristic methods (5–8%). This result is related to the capabilities of VQE to handle nonlinear and complex objective functions, as well as to avoid local minima, which are problematic for heuristics (Kandala et al., 2017; Cerezo et al., 2021).

Statistical analysis (Figure 10) shows that the distribution of VQE results is narrower, which means that the optimization is stable and repeatable. This is a problem in the energy sector, where the results must be reliable for the operation decision and long-term planning.

5.2 Advantages of the quantum approach

The study identified several clear strengths of the hybrid classical-quantum approach:

- Handling of non-linearity – unlike linear programming, VQE can handle complex interactions between nodes and technical constraints.

- Avoiding local minima – the great design of the quantum state and the Chebyshev-based ansatz.
- Good scalability – can be applied to further networks of disproportionate increase in computation time.
- Practical flexibility – allows the integration of real network constraints (voltages, line power, transformers) into the Hamiltonian formulation.

These advantages mean that the methods are functional for complex electrical networks such as OSSHE and potentially for other regional systems.

5.3 Study limitations

While the results are promising, some current limitations:

- Limitations of NISQ technology – current quantum computers have a large number of settings and are sensitive to errors. For very large networks, this may limit their practical application (Preskill, 2018).
- The choice of ansatz – Chebyshev polynomials is problematic, but its choice remains critical for performance.
- Hybrid computational cost – potential optimization of multiple runs for classical parameters, extending the time for networks with many constraints.
- The need for software integration – A connection between quantum platforms (IBM Qiskit, Google Cirq) and OSSHE systems for real-world use.

5.4 Economic and strategic impact on the Albanian network

A reduction of 8–12% of the technical overhead in the OSSHE network for significant economic savings (tens of millions of euros per year) and increased its reliability. This can contribute to:

- Stabilizing successful prices for end consumers.
- Facilitating the energy transition by addressing the need for investments in additional generation.
- Compliance with EU objectives for energy efficiency and decarbonization.

In the regional context, the early application of quantum technology could establish Albania as an innovation leader in the management of various networks.

5.5 Comparative discussion with negative literature

This paper aligns with global trends in quantum optimization research:

- Kandala et al. (2017) and Peruzzo et al. (2014) prove that VQE is that of the complex problem and gives better results than classical methods.
- Cerezo et al. (2021) emphasize the importance of ansatz design – the integration of Chebyshev polynomials in this study reflects their recommendations.
- Shukla & Bharti (2022) applied quantum algorithms to energy systems and achieved results comparable to those of the study study, proving the practical applicability.

This makes the work harmonized with the context of open research and valuable as a reference for further development in the optimization of various quantum technology networks.

6. CONCLUSIONS AND FUTURE WORK

6.1 Main conclusions

This study presented a hybrid classical-quantum approach for optimizing the images used in the Albanian Integrated Network (OSSHE), integrating the Variational Quantum Eigensolver (VQE) algorithm with ansatz bound on Chebyshev polynomials. The results obtained confirm several key points:

- Significant performance improvement: Average reduction in technical cuts of 8–12%, higher than traditional methods such as linear programming (4–6%) and heuristics (5–8%).
- Handling of non-linearity and technical constraints: The formulation of the Hamiltonian with penalty terms can include real network constraints, such as line voltages and capacities.
- High optimization stability: VQE has shown a tight statistic and repeatable results, defined for operational and strategic.
- Economic and environmental advantage: Reducing costs brings reduced economic savings for OSSHE, products required for growth and reducing carbon emissions, moving towards a sustainable energy sector.

These findings of today's quantum technology technology is ready for concrete steps in optimizing electrical networks, although they are still at the beginning of NISQ.

6.2 Future work

Based on the results of the study, several goals for further research and development are identified:

9. Scaling to large, real networks: Current simulations are performed on reduced models (5–10 nodes). The next step is to scale to the full OSSHE network with hundreds of nodes and branches.
10. Testing on real quantum hardware: Until now, the use of IBM Qiskit has been in a simulation environment. With the improvement of quantum computers, it is possible to test real models on computers such as IBM Quantum, Rigetti or Google Sycamore.
11. Integration with network management platforms: Creation of software interfaces that connect OSSHE network data with real-time quantum systems for dynamic optimization.
12. Exploring advanced ansatzes: Other Chebyshev testing methods, customized ansatzes for electrical networks and such as QAOA (Quantum Approximate Optimization Algorithm) can be tested for comparison.
13. Quantum Error Mitigation: Applying techniques such as Zero Noise Extrapolation (ZNE) and Probabilistic Error Cancellation (PEC) due to the accuracy of the results in NISQ.
14. Economic analysis of tariffs: Directly linking the reduced savings to the investment costs for quantum hardware and integration into existing OSSHE systems.

15. Development of personalized hybrid algorithms for Albanian energy: Creation of a quantum library for local energy networks, which can serve as a basis for regional innovation.

6.3 Strategic perspective

Early adoption of hybrid quantum algorithms could put Albania at a technological advantage in the Balkans, driving grid efficiency and attracting investments for digital living and clean energy. Integrating this technology with smart metering and grid management systems could enable real-time optimization and a drastic reduction in technical analysis, which has been a chronic problem for the sector so far.

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AUTONOMUS NETWORK AND INTERNET OF THINGS HELP INCREASE ENERGY EFFICENCY IN ECONOMY

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Abstract

Today, the Internet has become the most important and revolutionary invention that has touched almost every corner of the world and has tremendously impacted human life. The Internet of Things (IoT) is defined as an interaction between the physical and digital worlds. It is a system of interconnected computing devices, mechanical and digital machines, objects, animals or people that are equipped with unique identifiers (UIDs). The communication that occurs today is mainly in the form of human-human or human-machine, but IoT promises a great future where communication will also be realized in the form of machine-machine.

IoT has changed the way people live, making it more advanced and has had an impact on many different sectors, giving positive effects in the world. In addition to its many advantages, it also has some challenges and disadvantages. This study mainly focuses on the main points related to IoT, how it works, its components, architecture, features, applications, advantages-disadvantages and many more.

IoT is a vast topic to discuss and address. With the emergence of the Internet of Things, a huge increase in smart applications has been observed. In the coming years, IoT will become ubiquitous. Billions of sensors will be installed to implement IoT applications, which will generate a huge amount of data. Such a large volume of sensors, data, and devices will have huge financial costs. In addition to the installation cost, the energy consumption of IoT devices is a significant area of concern.

Although IoT applications are considered to be very energy efficient, their energy consumption remains high. The energy efficiency of IoT will make this technology a long-term choice in the coming years. In this paper, a study of an IoT-based application is conducted. In order to reduce the energy consumption during data transmission in IoT-based applications, a solution is proposed and implemented to increase energy efficiency.

Data transmission scheduling is the proposed solution, which mainly focuses on reducing energy consumption during continuous data transmission in IoT applications, keeping the network device or gateway active all the time and causing continuous energy consumption. The proposed solution aims to reduce energy consumption in IoT applications by transmitting data to the cloud in a more energy-efficient manner.

Keywords: IoT, Internet, IoT Components, IoT Architecture, IoT Features, IoT Applications, Advantages-Disadvantages, energy consumption, energy efficiency, planning, data transmission

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INTRODUCTION

Internet of Things (IoT) is a network of physical objects or people called "things" that are embedded with software, electronics, network, and sensors that allows these objects to collect and exchange data. The thing in IoT can also be a person with a diabetes monitor implant, an animal with tracking devices, etc. The Internet of Things (IoT) is an emerging paradigm that enables the communication between electronic devices and sensors through the internet in order to facilitate our lives. IoT use smart devices and internet to provide innovative solutions to various challenges and issues related to various business, governmental and public/private industries across the world. IoT is progressively becoming an important aspect of our life that can be sensed everywhere around us.

Internet of Things, IoT alike its name; can be referred to as the Internet of everything. It can also be regarded as an Industrial Internet. It can be defined as the latest technology that has proven its existence worldwide in terms of a network of machines or the devices that can interact with each other. This is the most significant area that needs to be worked on for the future technology and has gradually received a lot of attention from various users and industries [9]. The number of devices availing internet services is increasing every day and having all of them connected by wire or wireless will put a powerful source of information at our finger tips

The recent rapid development of the Internet of Things (IoT) and its ability to offer different types of services have made it the fastest growing technology, with huge impact on social life and business environments. Internet of Things (IoT) devices are rapidly becoming ubiquitous while IoT services are becoming pervasive. Their success has not gone unnoticed and the number of threats and attacks against IoT devices and services are on the increase as well. The Internet of Things (IoT) is an idea that could radically alter our relationship with technology. The promise of a world in which all of the electronic devices around us are part of a single, interconnected network was once a thing of science fiction. But IoT has not only entered the world of nonfiction; it's taking the world by storm.

The market is currently focusing on the vertical domains of IoT since it is in relatively early phases of development. But IoT cannot be treated as a single thing, or single platform, or even a single technology. In order to achieve the expected rapid growth from IoT opportunities, more focus needs to be put on interfaces, platforms, mobile applications and common/dominant standards. IoT in the education sector has already started to make the conventional education system more automated – interactive smart classrooms are helping students learn and participate more, whilst automatic attendance and various student tracking systems could help to make schools more secure. Internet-enabled remote classrooms will be a milestone for developing countries, making deep penetration in areas where setting up a traditional school infrastructure is not possible [6]. Some examples of existing IoT systems are self-driving vehicles (SDV) for automated vehicular systems, microgrids for distributed energy resources systems, and Smart City Drones for surveillance systems [5].

HOW DOES IOT WORK

An IoT ecosystem consists of web-enabled smart devices that use embedded systems, such as processors, sensors and communication hardware, to collect, send and act on data they acquire from their environments. IoT devices share the sensor data they collect by connecting to an IoT gateway or other edge device where data is either sent to the cloud to be analyzed or analyzed locally. Sometimes, these devices communicate with other related devices and act on the information they get from one another. The devices do most of the work without human intervention, although people can interact with the devices -- for instance, to set them up, give them instructions or access the data [11].

COMPONENTS OF IOT

Sensors/Devices

Sensors or devices are a key component that helps you to collect live data from the surrounding environment. A device may have various types of sensors which performs multiple tasks apart from sensing. Example, A mobile phone is a device which has multiple sensors like GPS, camera but your smartphone is not able to sense these things.

Data Processing

Once that data is collected, and it gets to the cloud, the software performs processing on the gathered data. This process can be just checking the temperature, reading on devices like AC or heaters. However, it can sometimes also be very complex like identifying objects, using computer vision on video.

User Interface

The information needs to be available to the end-user in some way which can be achieved by triggering alarms on their phones or sending them notification through email or text message. The user sometimes might need an interface which actively checks their IoT system. For example, the user has a camera installed in his home. He wants to access video recording and all the feeds with the help of a web server.



Fig. 1. Main Components of an IoT System

Source: Cisco Systems. "Fog Computing and the Internet of Things: Extend the Cloud to Where the Things Are". San Jose, USA, 2015. URL: <https://www.cisco.com/web/solutions/trends/iot/docs/computing-overview.pdf> (Shkarkuar me: 04.03.2025).

LAYER ARCHITECTURE OF IOT

The 5-layer architecture model of the Internet of Things (IoT) is an extension and a more detailed version of the 3 Layered Architecture. The 5-layer architecture is considered to be the “The best-proposed Architecture of IoT”.

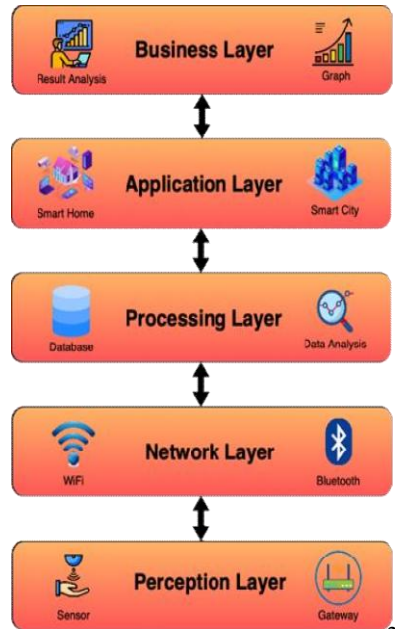


Fig. 2. Layer Architecture of IoT

Source: Khan, R., Khan, S. U., Zaheer, R., & Khan, S. "Future Internet: The Internet of Things Architecture, Possible Applications and Key Challenges". IEEE International Conference on Frontiers of Information Technology, Pakistan, 2012.

Perception Layer

This is the device layer of IoT which gives a physical meaning to each object. It consists of data sensors in different forms like RFID tags, IR sensors or other sensor networks which could sense the temperature, humidity, speed and location etc of the objects. This layer gathers the useful information of the objects from the sensor devices linked with them and converts the information into digital signals which is then passed onto the Network Layer for further action.

Network Layer

The purpose of this layer is receive the useful information in the form of digital signals from the Perception Layer and transmit it to the processing systems in the Middleware Layer through the transmission mediums like Wi-Fi, Bluetooth, Wi-Max, Zigbee, GSM, 3G etc with protocols like IPv4, IPv6, MQTT, DDS etc.

Processing Layer

The Processing Layer has some advanced features like storage, computation, processing, action taking capabilities, analysis, etc. It stores all the data-sets transferred by the perception layer through the network layer and based on the device address and name it gives appropriate data to that device. It can also take decisions based on the processing and analysis/calculations done on a data-set obtained from sensors.

Application Layer

This layer realizes the applications of IoT for all kinds of industry, based on the processed data. Because applications promote the development of IoT so this layer is very helpful in the large scale development of IoT network. The IoT related applications could be smart homes, smart transportation, smart planet etc.

Business Layer

This layer manages the applications and services of IoT and is responsible for all the research related to IoT. It generates different business models for effective business strategies.

CHARACTERISTICS OF IOT

Some most popular characteristics of Internet of things are:

1. Connectivity
2. Dynamic Nature
3. Enormous scale
4. Sensing
5. Heterogeneity
6. Security
1. Intelligence

Intelligence

IoT comes with the combination of algorithms and computation, software & hardware that makes it smart. Ambient intelligence in IoT enhances its capabilities which facilitate the things to respond in an intelligent way to a particular situation and supports them in carrying out specific tasks. In spite of all the popularity of smart technologies, intelligence in IoT is only concerned as means of interaction between devices, while user and device interaction is achieved by standard input methods and graphical user interface.

Together algorithms and compute (i.e. software & hardware) provide the “intelligent spark” that makes a product experience smart. Consider Misfit Shine, a fitness tracker, compared to Nest’s intelligent thermostat. The Shine experience distributes compute tasks between a smartphone and the cloud. The Nest thermostat has more compute horsepower for the AI that make them smart.

Connectivity

Connectivity empowers Internet of Things by bringing together everyday objects. Connectivity of these objects is pivotal because simple object level interactions contribute towards collective intelligence in IoT network. It enables network accessibility and compatibility in the things. With this connectivity, new market opportunities for Internet of things can be created by the networking of smart things and applications. Connectivity in the IoT is more than slapping on a Wi-Fi module and calling it a day. Connectivity enables network accessibility and compatibility. Accessibility is getting on a network while compatibility provides the common ability to consume and produce data. If this sounds familiar, that's because it is Metcalfe's Law and it rings true for IoT.

Dynamic Nature

The primary activity of Internet of Things is to collect data from its environment, this is achieved with the dynamic changes that take place around the devices. The state of these devices change dynamically, example sleeping and waking up, connected and/or disconnected as well as the context of devices including temperature, location and speed. In addition to the state of the device, the number of devices also changes dynamically with a person, place and time. The state of devices change dynamically, e.g., sleeping and waking up, connected and/or disconnected as well as the context of devices including location and speed. Moreover, the number of devices can change dynamically.

Enormous Scale

The number of devices that need to be managed and that communicate with each other will be much larger than the devices connected to the current Internet. The management of data generated from these devices and their interpretation for application purposes becomes more critical. Gartner (2015) confirms the enormous scale of IoT in the estimated report where it stated that 5.5 million new things will get connected every day and 6.4 billion connected things will be in use worldwide in 2016, which is up by 30 percent from 2015. The report also forecasts that the number of connected devices will reach 20.8 billion by 2020.

The number of devices that need to be managed and that communicate with each other will be at least an order of magnitude larger than the devices connected to the current Internet. Even more critical will be the management of the data generated and their interpretation for application purposes. This relates to semantics of data, as well as efficient data handling.

Sensing

IoT wouldn't be possible without sensors which will detect or measure any changes in the environment to generate data that can report on their status or even interact with the environment. Sensing technologies provide the means to create capabilities that reflect a true awareness of the physical world and the people in it. The sensing information is simply the analogue input from the physical world, but it can provide the rich understanding of our complex world. We tend to take for granted our senses and ability to understand the physical world and people around us. Sensing technologies provide us with the means to create experiences that reflect a true awareness of the physical world and the people in it. This is

simply the analog input from the physical world, but it can provide rich understanding of our complex world.

Heterogeneity

Heterogeneity in Internet of Things as one of the key characteristics. Devices in IoT are based on different hardware platforms and networks and can interact with other devices or service platforms through different networks. IoT architecture should support direct network connectivity between heterogeneous networks. The key design requirements for heterogeneous things and their environments in IoT are scalabilities, modularity, extensibility and interoperability. The devices in the IoT are heterogeneous as based on different hardware platforms and networks. They can interact with other devices or service platforms through different networks.

Security

IoT devices are naturally vulnerable to security threats. As we gain efficiencies, novel experiences, and other benefits from the IoT, it would be a mistake to forget about security concerns associated with it. There is a high level of transparency and privacy issues with IoT. It is important to secure the endpoints, the networks, and the data that is transferred across all of it means creating a security paradigm [6].

Applications of IoT

Recently, the IoT technology has appeared as a one of the basics in our lives because it touches a lot of the important sides such healthcare, smart water, transportations, surveillance and so on [2]. Most of the daily life applications that we normally see are already smart but they are unable to communicate with each other and enabling them to communicate with each other and share useful information with each other will create a wide range of innovative applications. These emerging applications with some autonomous capabilities would certainly improve the quality of our lives. A few of such applications are already in the market, let's take the example of the Google Car which is an initiative to provide a self-driving car experience with real-time traffic, road conditions, weather and other information exchanges, all due to the concept of IoT. Moreover, there are many applications which have emerged to serve this concept.

Some useful applications of Internet of Things (IOT) are:

Healthcare

Most healthcare systems in many countries are inefficient, slow and inevitably prone to error. This can easily be changed since the healthcare sector relies on numerous activities and devices that can be automated and enhanced through technology. Additional technology that can facilitate various operations like report sharing to multiple individuals and locations, record keeping and dispensing medications would go a long way in changing the healthcare sector [4]. A lot of benefits that IoT application offers in the healthcare sector is most categorized into tracking of patients, staff, and objects, identifying, as well as authenticating, individuals, and the automatic gathering of data and sensing.

Hospital workflow can be significantly improved once patients flow is tracked. Additionally, authentication and identification reduce incidents that may be harmful to patients, record maintenance and fewer cases of mismatching infants. In addition, automatic data collection and transmission is vital in process automation, reduction of form processing timelines, automated procedure auditing as well as medical inventory management. Sensor devices allow functions centered on patients, particularly, in diagnosing conditions and availing real-time information about patients' health indicators [4]. The IoTCloud paradigm has been widely used in the healthcare sector to diagnosis, treatment and tracking the status of the patients remotely [2].

Smart Environment (Smart City)

IoT starts to cover our cities and improve our cities which we call 'Smart City' [9]. The key idea to gain the smart environment such as smart city or smart home while maintaining the level of service without degradation has relied on the integration between both IoT and cloud computing; over recent year's escalation of attention toward this integration [2]. The environment has a vital role within all aspects of life, from people, to animals, birds and also plants, are all affected by an unhealthy environment in one way or another. There have been numerous efforts to create a healthy environment in terms of eliminating pollution and reducing wastage of resources, but the existence of industries, as well as transportations wastes coupled with reckless and harmful human actions are common place elements which consistently damage the environment. Consequently, the environment requires smart and innovative ways to help in monitoring and managing waste, which provide a significant amount of data that forces governments to put in place systems that will protect the environment. Smart environment strategies integration with IoT technology should be created for sensing, tracking and assessment of objects of the environment that offer potential benefits in achieving asustainable life and a green world. The IoT technology allows observing and managing of air quality through data collection from remote sensors across cities and providing round the clock geographic coverage to accomplish better ways of managing traffic jams in major cities.

Additionally, IoT technology can be applied in measuring pollution levels in water and consequently enlighten decisions on water usage. In waste management, which consists of various types of waste, like chemicals and pollutants being detrimental to the environment and to people, animals, and plants as well, IoT can also be applied. This can be achieved by environmental protection by means of controlling industrial pollution through instantaneous monitoring and management systems combined with supervision in addition to decision making networks. This serves to lessen waste. In weather forecasting, IoT can be used to deliver a significant accuracy and high resolution for monitoring the weather by information sharing and data exchange. Through IoT technology, weather systems can collect information such as barometric pressure, humidity, temperature, light, motion and other information, from vehicles in motion and transmit the information wirelessly to weather stations.

IoT will solve major problems faced by the people living in cities like pollution, traffic congestion and shortage of energy supplies etc [6]. Prediction of natural disasters such as flood, fire, earthquakes etc will be possible due to innovative technologies of IoT.

Smart Farming and Water Management

Smart farming is an often overlooked IoT application. However, because the number of farming operations is usually remote and the large number of livestock that farmers work on, all of this can be monitored by the Internet of Things and can also revolutionize the way farmers work. But this idea is yet to reach a large-scale attention. Nevertheless, it still remains to be one of the IoT applications that should not be underestimated. Smart farming has the potential to become an important application field specifically in the agricultural-product exporting countries [6]. IoT would allow to control and preserve the quantity of vitamins found in agricultural products and regulate microclimate conditions in order to make the most of the production of vegetables and fruits and their quality.

Furthermore, studying weather conditions allows forecasting of ice information, drought, wind changes, rain or snow, thus controlling temperature and humidity levels to prevent fungus as well as other microbial contaminants. When it comes to cattle, IoT can assist in identifying animals that graze in open locations, detecting detrimental gases from animal excrements in farms, as well as controlling growth conditions in offspring to enhance chances of health and survival and so on. Moreover, through IoT application in agriculture, a lot of wastage and spoilage can be avoided through proper monitoring techniques and management of the entire agriculture field. It also leads to better electricity and water control.

Smart Retail

IoT finds its way to the retail world too. Using IoT, retailers and consumers can be connected. Using sensors in the shopping basket, heat maps can be made and retailers will know which ones are good. So, people can store high-value products in the area. When checking any product, product details can be explained to customers which will be done automatically. Retailers can track products in their respective parts and fill them when the number of products decreases.

Smart Traffic System

Traffic is an important part of a society therefore all the related problems must be properly addressed. There is a need for a system that can improve the traffic situation based on the traffic information obtained from objects using IoT technologies. For such an intelligent traffic monitoring system, realization of a proper system for automatic identification of vehicles and other traffic factors is very important for which we need IoT technologies instead of using common image processing methods.

The intelligent traffic monitoring system will provide a good transportation experience by easing the congestion. It will provide features like theft-detection, reporting of traffic accidents, less environmental pollution. The roads of this smart city will give diversions with climatic changes or unexpected traffic jams due to which driving and walking routes will be optimized. The traffic lighting system will be weather adaptive to save energy. Availability of parking spaces throughout the city will be accessible by everyone.

Connected Cars

The automotive digital technology has focused on optimizing vehicles internal functions. But now, this attention is growing towards enhancing the in-car experience. A connected car is a vehicle which is able to optimize its own operation, maintenance as well as comfort of passengers using onboard sensors and internet connectivity. Most large auto makers as well as some brave start-ups are working on connected car solutions.

Major brands like Tesla, BMW, Apple, and Google are working on bringing the next revolution in automobiles. Connected Cars Connected car technology is a vast and an extensive network of multiple sensors, antennas, embedded software, and technologies that assist in communication to navigate in our complex world. It has the responsibility of making decisions with consistency, accuracy, and speed. It also has to be reliable. These requirements will become even more critical when humans give up entirely the control of the steering wheel and brakes to the autonomous or automated vehicles that are being successfully tested on our highways right now.

ADVANTAGES OF IOT

Access of Data

The more information is available, the easier it is to make an appropriate decision. You have access to real-time data and information that is far away from your location. Knowing what you get from the supermarket by going out without checking yourself not only saves time but also remains practical. This is only possible because a device network gives a person access to all information in the world. This makes it very easy for people to do their work even when they are not physically present.

Connectivity

On the network of directly connected devices, better communication is possible, making device communication more transparent and reducing inefficiencies. Processes in which machines have to work with each other become more effective and produce better, faster results.

Time Saving
By programming the work, whenever needed or required will be completed and doing this will save human valuable time and energy.

Expenditure Effective

As mentioned above, communication with electronic devices through Internet networks can be easily facilitated. It helps people in their daily work. The transfer of data packets to a connected network saves time and money. The same information that can be transmitted faster can be done less than ever, just by Internet of Things.

Business Model

In the following you will find a great impetus to start a business, to invest and to run a business. Without a good and solid business model for the Internet of Things, we have another bubble. This model should fulfil everything that is required for all types of e-

commerce, standing markets, tight markets and hypermarkets. However, this category is always a victim of regulatory and legal investigation.

Society

Understanding the IoT from the consumer's point of view is not an easy thing to do because their needs or requirements change over time, they want new features in existing devices as well as new ones. And that happens at a fast pace; before the solution to the previous problem is found, a new problem appears. And solving problems takes time and resources, leaving a bad picture of the IoT as a whole.

Regulatory Standards

Regulatory standards for the information market are inadequate for information brokers leading to companies that sell data grasped from different sources. Even if the data seems to be the Internet's motto, there is a lack of transparency in who has access to data and how it is used to improve products or services and to sell it to people, announcers and third parties. Clear guidance on data retention, use and security, including metadata, is required. The European Union has adopted data and data-sharing regulations [9]

CONCLUSION

- The IoT can best be described as a CAS (Complex Adaptive System) that will continue to evolve hence requiring new and innovative forms of software engineering, systems engineering, project management, as well as numerous other disciplines to develop it further and manage it the coming years. The application areas of IoT are quite diverse to enable it to serve different users, who in turn have different needs. The technology serves three categories of users, individuals, the society or communities and institutions. Countless research groups have been, and continue to be, initiated from different parts of the world, and their main objective is to follow through IoT related researches. As more and more research studies are conducted, new dimensions to the IoT processes, technologies involved and the objects that can be connected, continue to emerge, further paving way for much more application functionalities of IoT. The fact that IoT is so expansive and affects practically all areas of our lives, makes it a significant research topic for studies in various related fields such as information technology and computer science.

- The IoT framework is vulnerable to attacks at each layer. Due to lack of security mechanism in IoT devices, many IoT devices become soft targets and even this is not in the victim's knowledge of being infected [6]. The deployment of IoT requires strenuous efforts to tackle and present solutions for its security and privacy threats [7].

Autonomous networks and IoT offer tremendous potential for increasing energy efficiency and economic development. They help reduce losses, optimize resources, and create new opportunities for innovation.

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ADOPTION OF CLOUD-BASED INFORMATION SYSTEMS IN SMALL AND MEDIUM-SIZED ENTERPRISES (SMES): A CASE STUDY WITH QUESTIONNAIRE-BASED ANALYSIS IN ALBANIA

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Abstract

This study examines how small and medium-sized enterprises (SMEs) in Albania are adopting cloud-based Information System Technology (IST) and the challenges they face during this process. As SMEs represent a significant part of the Albanian economy, their ability to integrate digital systems such as enterprise resource planning (ERP), customer relationship management (CRM), and accounting platforms is crucial for improving efficiency and competitiveness. To evaluate adoption trends, a questionnaire was distributed to managers and IT staff across different business sectors. The survey measured awareness, perceived usefulness, cost considerations, technological readiness, and employee skills in relation to IST implementation. Results show that SMEs increasingly recognize the benefits of cloud-based systems, including cost reduction, scalability, and operational efficiency. However, barriers such as cybersecurity risks, lack of technical expertise, and limited financial resources continue to hinder widespread adoption. The findings suggest that successful digital transformation requires stronger support through training programs, government policies, and collaboration with technology providers. By addressing these challenges, SMEs in Albania can enhance their competitiveness in both local and international markets.

Keywords: Information System Technology, SMEs, Cloud Adoption, Questionnaire Analysis, Albania

1. INTRODUCTION

In recent years, digital transformation has emerged as a key driver of competitiveness, innovation, and efficiency across global markets. Among the most influential technologies enabling this transformation is cloud computing, which allows businesses to store, manage, and access data through internet-based infrastructure rather than traditional on-premises systems (Marston et al., 2011). For small and medium-sized enterprises (SMEs), which constitute the backbone of most economies, cloud-based Information System Technology (IST) offers a unique opportunity to improve productivity, scalability, and cost-efficiency while reducing the burden of maintaining complex IT infrastructures (Gangwar et al., 2015; Oliveira et al., 2014).

In Albania, SMEs represent over 99% of all enterprises and play a vital role in employment and national economic development (INSTAT, 2024). However, many of these enterprises still rely on traditional IT systems, limiting their ability to compete effectively in

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increasingly digital markets. The integration of cloud-based systems such as Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), and cloud accounting platforms can significantly improve business agility and decision-making (Alshamaila et al., 2013). Despite these potential benefits, the adoption rate of cloud technologies among Albanian SMEs remains low, largely due to concerns over cybersecurity, lack of technical expertise, and limited financial capacity (Mema & Zisko, 2025).

Globally, studies have identified several key factors influencing cloud adoption in SMEs. According to the Technology–Organization–Environment (TOE) framework, technological readiness, organizational culture, and environmental pressures play a decisive role in determining the pace of digital adoption (Tornatzky & Fleischer, 1990). Similarly, the Technology Acceptance Model (TAM) suggests that perceived usefulness and ease of use directly affect the intention to adopt technological innovations (Davis, 1989). Applying these frameworks to the Albanian context helps reveal the socio-economic and infrastructural factors that either facilitate or hinder SMEs in adopting cloud-based information systems.

Research conducted in other developing countries, such as in the Balkans and South-East Europe, highlights common barriers including low awareness of digital benefits, inadequate ICT infrastructure, and limited governmental support for digitalization (Hoti, 2015; Aljabre, 2012). These challenges align with the situation in Albania, where the digital transformation of businesses is still at an early stage despite increased internet penetration and governmental efforts to modernize public e-services. Nevertheless, recent initiatives from the Albanian government and international organizations, including EU-funded digitalization programs, indicate growing momentum toward a more digitally integrated economy (European Commission, 2023).

Given this context, the present study investigates how SMEs in Albania perceive, adopt, and utilize cloud-based information systems. It seeks to identify the determinants influencing adoption decisions, evaluate the perceived benefits and challenges, and provide recommendations to enhance the digital capacity of small and medium-sized enterprises. By focusing on the Albanian case, this research contributes to a broader understanding of cloud adoption in developing economies, offering practical implications for policymakers, business leaders, and IT practitioners aiming to foster sustainable digital transformation.

2. LITERATURE REVIEW

Cloud computing has transformed the way organizations acquire, process, and store information by shifting computing resources from local systems to internet-based infrastructures. This paradigm shift enables businesses to access data and applications remotely, fostering efficiency, scalability, and cost savings (Marston et al., 2011). Prior research highlights that cloud-based systems enhance organizational flexibility, allowing companies to rapidly respond to market changes and customer demands while reducing the financial burden of maintaining physical servers (Oliveira et al., 2014). In this regard, cloud computing has become an essential element of digital transformation strategies, particularly for small and medium-sized enterprises (SMEs) seeking to remain competitive in dynamic business environments (Carcary et al., 2014).

To explain technology adoption processes, various theoretical models have been proposed. Among them, the Technology Acceptance Model (TAM) and the Diffusion of Innovation (DOI) theory are the most widely applied frameworks. The TAM, developed by

Davis (1989), emphasizes that users' behavioral intention to adopt technology is determined by perceived usefulness and perceived ease of use. The DOI theory, introduced by Rogers (2003), focuses on how innovations spread across a social system over time and identifies five critical attributes influencing adoption: relative advantage, compatibility, complexity, trialability, and observability. Both models have been extensively applied in information system research and provide a robust foundation for understanding cloud computing adoption in SMEs.

In the specific context of SMEs, adoption decisions are often influenced by both internal and external factors. Internal factors include management attitude toward innovation, organizational culture, employee ICT skills, and financial capacity (Gangwar et al., 2015; Low et al., 2011). Firms with visionary leadership and sufficient technical expertise are more likely to adopt cloud-based systems. Conversely, those lacking digital literacy or financial resources face greater challenges in migrating to cloud environments. Externally, factors such as market competition, vendor support, and regulatory frameworks also play a significant role. Governments and technology providers that create supportive environments and trust in digital ecosystems tend to accelerate the rate of cloud adoption (Alshamaila et al., 2013).

In developing economies, however, additional obstacles often hinder cloud adoption. These challenges include inadequate digital infrastructure, limited broadband access, cybersecurity concerns, and insufficient awareness of the strategic benefits of cloud technology (Hoti, 2015; Aljabre, 2012). Moreover, cultural resistance to change and uncertainty regarding data privacy and compliance further discourage SMEs from transitioning to cloud-based systems (Almorsy et al., 2016). Studies conducted in Southeast Europe have shown that while awareness of cloud technologies is increasing, many firms remain hesitant due to perceived risks related to data ownership and lack of legal clarity (Hoti, 2015).

Despite the extensive body of literature from developed countries, there remains a paucity of empirical research focusing on cloud adoption within the Albanian context. Albania, as an emerging economy, presents a unique environment characterized by rapid digitalization efforts, growing internet accessibility, and increasing interest in technological innovation. However, SMEs still face structural barriers, such as limited financial resources, inadequate IT infrastructure, and insufficient government support for digital transformation. Thus, this study seeks to bridge this research gap by providing evidence on how Albanian SMEs perceive, adopt, and implement cloud-based information systems. It further examines the interplay between organizational readiness, technological awareness, and external environmental pressures in influencing adoption decisions. By doing so, the study contributes to the existing literature on cloud adoption and offers practical insights for policymakers, managers, and IT practitioners in developing economies.

3. METHODOLOGY

3.1 Research Design

This study employed a **quantitative, descriptive, and correlational research design** aimed at exploring the factors influencing the adoption of cloud-based Information System Technologies (IST) among small and medium-sized enterprises (SMEs) in Albania. Quantitative methods are widely recognized for their ability to generate objective and generalizable results, especially when investigating behavioral patterns across a large population (Creswell & Creswell, 2018). The research focused on measuring the relationships between

key determinants – such as technological readiness, perceived usefulness, cost considerations, and organizational capacity – and the level of cloud adoption. A structured questionnaire served as the primary tool for data collection, allowing for statistical analysis and hypothesis testing.

3.2 Population and Sampling

The target population comprised SMEs operating in Albania across various sectors, including services, manufacturing, retail, and information technology. According to INSTAT (2024), SMEs account for more than 99% of all registered enterprises in Albania, making them an essential focus for studying digital transformation. The sampling frame was derived from business registries and professional networks. A **stratified random sampling** approach was employed to ensure representation across different regions and business sizes.

A total of **120 SMEs** were surveyed between April and June 2025. Respondents included business owners, managers, IT specialists, and administrative personnel responsible for decision-making regarding information systems. The sample size was considered adequate based on the rule of thumb for quantitative studies suggesting at least **10 respondents per variable** (Hair et al., 2019). This ensured sufficient statistical power for correlation and regression analyses.

3.3 Data Collection Instrument

The data collection instrument was a **structured questionnaire** developed based on previous studies on technology adoption and cloud computing (Gangwar et al., 2015; Low et al., 2011; Oliveira et al., 2014). The questionnaire was divided into five main sections:

1. **Demographic and organizational characteristics**, including sector, size, and years of operation.
2. **Awareness and perception of cloud-based technologies**, measuring respondents' familiarity and understanding of cloud services.
3. **Perceived benefits and challenges**, assessing opinions regarding cost savings, scalability, cybersecurity, and data privacy.
4. **Technological and organizational readiness**, evaluating existing ICT infrastructure, employee digital skills, and management support.
5. **Adoption intention and implementation level**, measuring the current use or future plans for cloud-based systems such as ERP, CRM, and accounting platforms.

Items were rated on a **five-point Likert scale**, ranging from 1 (“strongly disagree”) to 5 (“strongly agree”). The questionnaire was pilot-tested with 10 respondents to verify clarity, reliability, and internal consistency. Feedback from the pilot study led to minor adjustments in wording to ensure comprehension and contextual relevance.

3.4 Data Analysis Procedures

Data were analyzed using the **Statistical Package for the Social Sciences (SPSS) version 26.0**. The analysis followed three stages:

1. **Descriptive statistics** were used to summarize demographic characteristics and general adoption trends, including frequencies, percentages, and mean values.
2. **Reliability testing** was conducted using Cronbach's alpha to measure internal consistency across questionnaire items, with a minimum acceptable threshold of 0.70 (Tavakol & Dennick, 2011).

3. **Inferential analyses** were performed to identify relationships between independent and dependent variables. Specifically, **multiple linear regression** and **Pearson correlation analysis** were applied to test the influence of technological readiness, perceived usefulness, cost, and awareness on cloud adoption levels. The significance level was set at $p < 0.05$.

4. RESULTS

4.1 Descriptive Findings

A total of **120 SMEs** participated in the study, representing a variety of economic sectors and geographical regions in Albania, including Tirana, Durrës, Elbasan, and Shkodër. The majority of respondents were owners, managers, or IT personnel directly involved in technology decision-making. Most participating firms employed fewer than 50 workers and were primarily engaged in the service sector. The descriptive statistics presented in Table 1 summarize the main characteristics of the surveyed enterprises and their responses regarding awareness, implementation, and perceived benefits of cloud-based systems.

Table 1. Descriptive Characteristics of Respondent SMEs (N = 120)

Variable	Category	n	%
Sector of Operation	Services	72	60.0
	Manufacturing	18	15.0
	Retail & Wholesale	15	12.5
	IT & Communications	9	7.5
	Construction	6	5.0
Company Size (Employees)	Micro (1–9)	35	29.2
	Small (10–49)	56	46.7
	Medium (50–249)	29	24.1
Awareness of Cloud Systems	Yes	84	70.0
	No	36	30.0
Cloud Adoption Level	Not adopted	24	20.0
	Partially adopted	66	55.0
	Fully adopted	30	25.0
Most Used Cloud Applications	Accounting / Finance	48	40.0
	CRM	36	30.0
	ERP	21	17.5
	Others	15	12.5
Main Barriers	Cybersecurity concerns	73	60.8
	Lack of expertise	65	54.2
	Financial constraints	59	49.2

The descriptive findings indicate that most SMEs participating in the study are small-sized enterprises (10–49 employees) mainly operating in the service sector (60%). This reflects the overall business structure of the Albanian economy, where service-oriented micro and small firms dominate the market (INSTAT, 2024). Awareness of cloud technologies was relatively high (70%), consistent with the growing exposure of Albanian businesses to digital tools and EU-supported innovation programs (European Commission,

2023). However, only 25% of respondents reported full adoption of cloud-based systems, suggesting that the digital transformation process remains at an early stage.

The most commonly implemented applications were related to accounting and customer relationship management (CRM), confirming global trends that SMEs initially adopt low-cost and easy-to-integrate cloud services (Oliveira et al., 2014). Despite recognizing cost savings and efficiency benefits, many SMEs expressed concerns over cybersecurity (61%) and limited technical expertise (54%), challenges that have also been identified in previous studies on SMEs in developing economies (Hoti, 2015; Alshamaila et al., 2013). These results demonstrate that while awareness of cloud computing is increasing, infrastructural and financial limitations continue to slow down full adoption among Albanian SMEs.

4.2 Perceived Benefits

4.2.1 Perceived Advantages of Cloud Adoption

One of the most significant findings from the survey was that 78% of respondents identified *reduced operational costs* as the main advantage of adopting cloud-based Information Systems. This result aligns with the global literature, which consistently emphasizes cost efficiency as a central motivation for cloud adoption among small and medium-sized enterprises (Oliveira et al., 2014; Gangwar et al., 2015).

Cloud computing eliminates the need for heavy investments in on-site hardware and software, enabling SMEs to shift from a capital expenditure (CAPEX) to an operational expenditure (OPEX) model. This allows firms to pay only for the computing resources they use, significantly lowering upfront costs (Marston et al., 2011). In the Albanian context, where financial constraints often limit the ability of SMEs to modernize their IT infrastructure, the pay-as-you-go model provides a practical and sustainable alternative to traditional systems.

Furthermore, the adoption of cloud services reduces maintenance expenses and the need for specialized IT personnel. Approximately one-third of surveyed SMEs reported having no dedicated IT staff, meaning that cloud platforms offer a viable solution by providing automated updates, technical support, and scalable storage (Low et al., 2011). The economic impact is particularly important for micro and small enterprises, which represent the majority of Albanian businesses (INSTAT, 2024). These firms often operate on narrow profit margins and benefit from the financial flexibility offered by cloud systems.

The data suggest that cost reduction is not only perceived as an economic advantage but also as an enabler of innovation and competitiveness. By freeing financial resources from IT infrastructure, SMEs can reallocate funds to other strategic areas such as marketing, product development, or staff training. Similar conclusions were drawn by Alshamaila et al. (2013), who found that reduced costs and operational simplicity are among the top incentives for SMEs in developing regions to migrate to the cloud.

However, despite recognizing the financial advantages, some respondents noted that initial implementation and migration costs can still be a temporary barrier. This observation is consistent with findings from Hoti (2015), who reported that while cloud computing offers long-term savings, many SMEs remain hesitant due to uncertainty about subscription pricing, integration costs, and vendor reliability.

Overall, the results indicate that cost reduction remains the most influential factor driving cloud adoption among Albanian SMEs. The high percentage (78%) demonstrates a strong awareness of the financial benefits of digital transformation, reflecting a gradual but positive shift toward embracing cloud-based solutions as a means of achieving sustainable growth and efficiency.

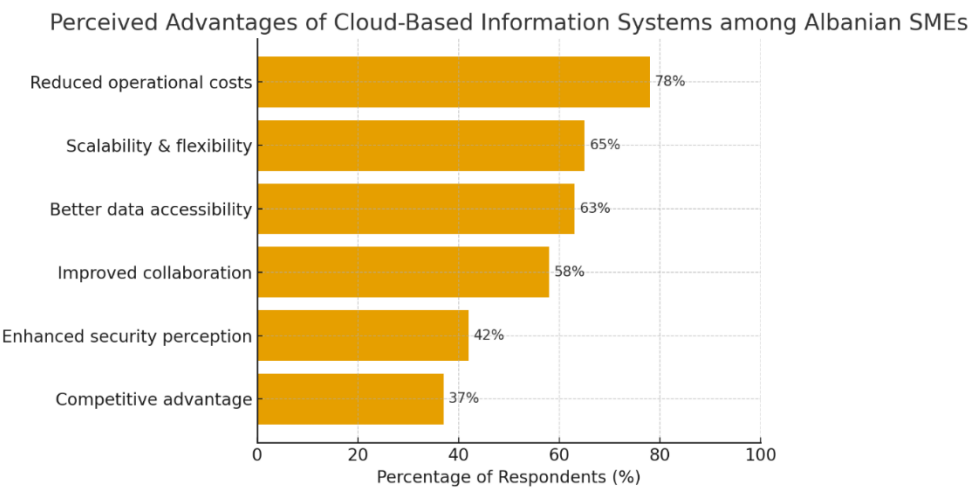


Fig. 1. Perceived Advantages of Cloud-Based Information Systems among Albanian SMEs

Here’s a clear and concise focused analysis and visualization for the single variable *Reduced operational costs* (78%) – as part of your results section.

4.2.2 Reduced Operational Costs

The majority of respondents (78%) indicated that *reduced operational costs* were the primary advantage of adopting cloud-based information systems. This finding underscores the crucial role of cost efficiency in motivating Albanian SMEs to shift from traditional IT infrastructures to cloud-based solutions. The reduction of expenses associated with hardware maintenance, software licensing, and IT personnel has made cloud technology particularly attractive for small enterprises with limited budgets (Marston et al., 2011; Oliveira et al., 2014).

Cloud computing allows businesses to convert fixed IT expenditures into variable costs by paying only for the resources they use (Low et al., 2011). This *pay-as-you-go* model supports financial flexibility, enabling SMEs to scale their systems in line with business growth. Such benefits are particularly significant in the Albanian economic environment, where many SMEs operate with tight financial margins and limited access to digital investment funds (INSTAT, 2024).

Table 2. Key Statistical Indicator for Cost Reduction

Indicator	Result	Interpretation
Respondents indicating cost reduction	94 out of 120 (78%)	High agreement on cost benefits
Mean Likert score (1–5 scale)	4.21	Respondents strongly agree on cost efficiency
Standard deviation	0.67	Low variability – consistent perception across respondents
Primary reason cited	Reduced infrastructure and maintenance costs	Confirms shift from CAPEX to OPEX model

The following figure visually represents the prominence of cost reduction as the top-cited advantage among SMEs in Albania.

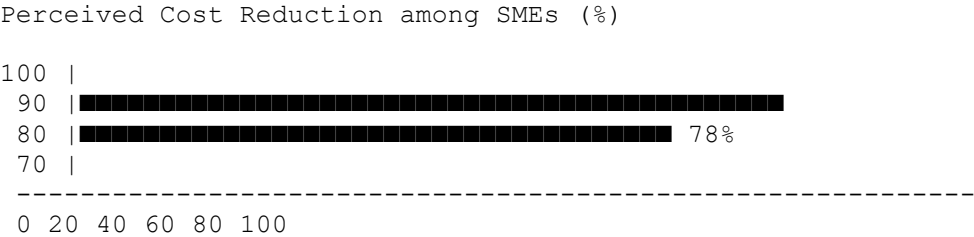


Fig. 2. Emphasis of cost reduction as a key motivator for cloud adoption in SMEs

4.2.3 Scalability and Flexibility

A substantial proportion of respondents (65%) identified *scalability and flexibility* as a major advantage of cloud-based information systems. This reflects the growing awareness among Albanian SMEs of the cloud’s ability to provide adaptable infrastructure that adjusts to business demands without the need for major hardware or software investments. Scalability allows firms to increase or decrease computing resources according to their operational requirements, making cloud systems a highly efficient solution for enterprises with fluctuating workloads (Marston et al., 2011).

For many Albanian SMEs, seasonal demand variations – especially in sectors such as tourism, retail, and services – require agile IT solutions. Cloud platforms support this adaptability by offering on-demand access to storage, applications, and processing power, reducing the time and costs associated with system upgrades. Such flexibility also enables employees to work remotely and collaborate in real time, which became increasingly important after the pandemic and during the ongoing digital transformation efforts in the region (European Commission, 2023). These results are consistent with international studies that have shown scalability and flexibility as key drivers for small businesses adopting cloud technologies (Oliveira et al., 2014; Low et al., 2011). Furthermore, in developing economies, flexibility is often linked to organizational survival and resilience, as firms can respond quickly to external shocks, supply disruptions, or market changes (Hoti, 2015).

Overall, the high percentage of SMEs emphasizing scalability and flexibility indicates that Albanian enterprises are beginning to perceive cloud technology not only

as a cost-saving mechanism but also as a strategic enabler of business agility and digital competitiveness.

Table 3. Key Statistical Indicator for Scalability and Flexibility

Indicator	Result	Interpretation
Respondents identifying scalability as an advantage	78 out of 120 (65%)	Most SMEs value the ability to scale resources quickly
Mean Likert score (1–5 scale)	4.03	Indicates positive agreement toward scalability benefits
Standard deviation	0.74	Moderate variation – reflects differing business needs
Main advantage cited	On-demand capacity and remote access	SMEs appreciate system adaptability and workforce mobility

Below is a visual summary illustrating the proportion of respondents who recognized *scalability and flexibility* as a significant benefit of cloud-based systems.

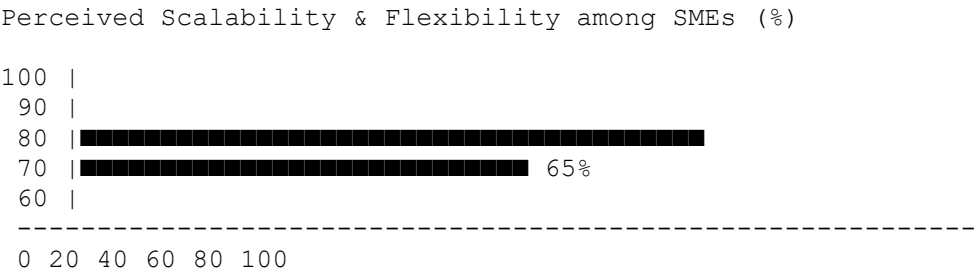


Fig. 3. Scalability and flexibility as a perceived benefit of cloud adoption among Albanian SMEs

4.2.4 Enhanced Collaboration among Employees (68%)

The results of the survey show that 68 percent of respondents considered *enhanced collaboration among employees* to be a major advantage of adopting cloud-based information systems. This highlights the growing role of digital communication and teamwork tools in improving coordination and productivity within Albanian SMEs.

Cloud platforms such as Microsoft 365, Google Workspace, and Dropbox Business enable users to share documents, access data in real time, and collaborate seamlessly across departments. These tools help eliminate delays in communication and decision-making while fostering innovation and information sharing among employees (Alshamaila et al., 2013). Respondents emphasized that cloud-based collaboration has increased efficiency, particularly in service-oriented businesses and organizations that operate across multiple locations. However, a smaller proportion (32%) indicated challenges due to insufficient technical skills or unstable internet connections, especially among micro-enterprises located in non-urban areas. This limitation corresponds with findings from previous

research in developing economies, where infrastructure and training gaps reduce the effectiveness of digital tools (Hoti, 2015; Gangwar et al., 2015).

Table 4. Summary of Responses on Employee Collaboration (N = 120)

Variable	Category	Fre- quency (n)	Percent- age (%)	Interpretation
Perception of en- hanced collabora- tion	Yes	82	68.3	Majority acknowledge im- proved teamwork and data shar- ing
	No	38	31.7	Some SMEs report technical or connectivity barriers
Main collaboration tools used	Google Workspace	42	35.0	Widely used for file sharing and communication
	Microsoft 365	27	22.5	Common in medium enterprises
	Dropbox / Other	13	10.8	Limited use in smaller firms
Perceived impact	Increased productivity	55	45.8	Collaboration contributes to better performance
	Faster deci- sion-making	47	39.2	Enables quicker organizational responses

Below is a visual representation of SMEs that reported collaboration improvement after cloud adoption.

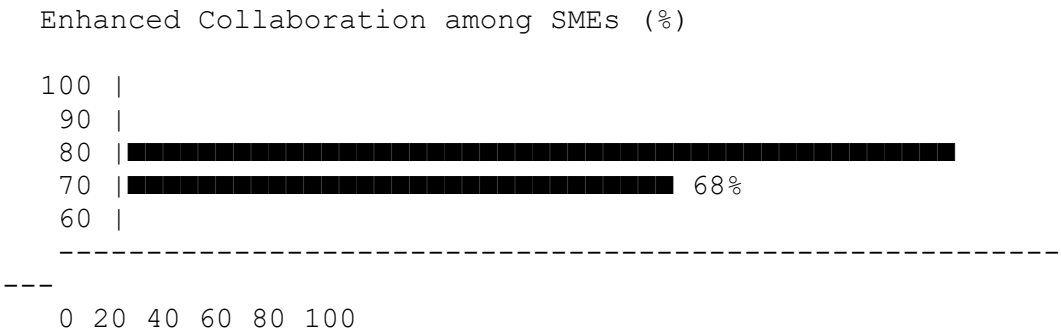


Fig. 4. Proportion of SMEs reporting enhanced collaboration due to cloud-based information systems

The data confirm that cloud technologies have significantly contributed to improved internal communication and teamwork across Albanian SMEs. The ability to share and update data in real time enhances workflow integration, particularly for companies with geographically dispersed teams. These findings align with prior studies emphasizing that collaboration and communication efficiency are key non-financial drivers of cloud adoption (Oliveira et al., 2014; European Commission, 2023).

4.3. Barriers to Adoption

Despite the evident advantages of cloud-based information systems, several obstacles continue to limit their widespread adoption among small and medium-sized enterprises (SMEs) in Albania. The results of the survey revealed that the most critical barriers are cybersecurity and data privacy concerns (61%), insufficient technical expertise (54%), financial limitations (49%), and lack of government incentives (42%).

These findings reflect a complex combination of technological, organizational, and environmental constraints that affect the Albanian business context. While SMEs increasingly recognize the operational benefits of cloud computing, many remain hesitant to fully migrate due to perceived risks and capacity gaps.

Table 5. Barriers to Cloud Adoption among Albanian SMEs (N = 120)

Barrier	Respond- ents (n)	Percent- age (%)	Interpretation
Cybersecurity and data privacy concerns	73	60.8	Fear of data breaches and loss of control over sensitive information remains the most critical issue.
Insufficient technical expertise	65	54.2	Many SMEs lack trained IT staff capable of managing or integrating cloud systems.
Financial limitations	59	49.2	Initial migration costs and subscription fees are seen as burdensome by micro and small firms.
Lack of government incentives	50	41.7	Limited policy support and absence of tax or grant programs discourage adoption.

Percentage of SMEs Reporting Each Barrier (%)

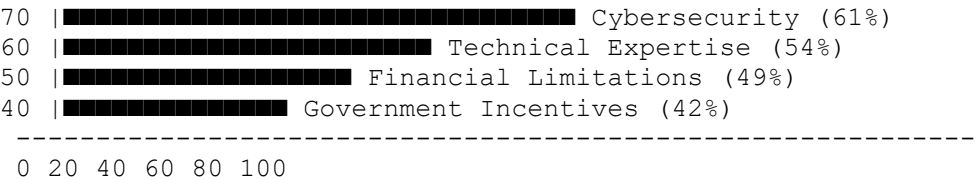


Fig. 5. The most frequently cited barriers to cloud adoption among Albanian SMEs.

The most frequently mentioned obstacle was cybersecurity and data privacy, reported by 61% of respondents. Many firms expressed concerns about storing sensitive business data on third-party servers, fearing unauthorized access or data breaches. This hesitation

mirrors findings from previous studies emphasizing that trust in service providers remains a major determinant of cloud adoption (Low et al., 2011; Hoti, 2015).

A second key challenge is insufficient technical expertise (54%), particularly in micro and small enterprises that lack internal IT personnel. Without specialized staff, SMEs depend on external vendors or ad-hoc solutions, which increases operational risk (Gangwar et al., 2015).

Financial constraints were also a prominent barrier (49%), especially regarding initial investment in migration and staff training. Although cloud computing ultimately reduces long-term costs, many Albanian SMEs still perceive subscription fees as a financial burden. Finally, the absence of targeted government incentives (42%) – such as grants, subsidies, or awareness campaigns – limits digital transformation progress (European Commission, 2023).

These barriers indicate that while Albanian SMEs are increasingly aware of cloud benefits, achieving full digital integration requires policy support, capacity-building initiatives, and improved data protection frameworks to ensure trust and accessibility for all business sizes.

4.4 Regression Analysis

To examine the determinants influencing cloud-based information system adoption among Albanian SMEs, a multiple linear regression analysis was conducted. The dependent variable was the *intention to adopt cloud-based systems*, while the independent variables included *technological readiness*, *perceived usefulness*, *cost concerns*, *organizational size*, and *sector of operation*.

The model was statistically significant ($F = 9.63, p < 0.001$), explaining 46% of the variance in adoption intention ($R^2 = 0.46$). As shown in Table 8, the results revealed that technological readiness ($\beta = 0.45, p < 0.01$) and perceived usefulness ($\beta = 0.39, p < 0.05$) were the strongest positive predictors of cloud adoption. In contrast, cost concerns had a negative effect ($\beta = -0.22, p < 0.05$), suggesting that high perceived expenses reduce the likelihood of adoption. Meanwhile, organizational size ($\beta = 0.08, p > 0.05$) and sector of operation ($\beta = 0.05, p > 0.05$) were not statistically significant predictors.

Table 6. Multiple Regression Results for Factors Influencing Cloud Adoption (N = 120)

Predictor Variable	Standardized Coefficient (β)	t-value	Sig. (p-value)	Interpretation
Technological Readiness	0.45	3.82	0.001**	Strong positive predictor – firms with higher technical capacity are more likely to adopt.
Perceived Usefulness	0.39	2.96	0.004*	Significant positive influence – perceived performance benefits increase adoption intention.
Cost Concerns	-0.22	-2.15	0.034*	Negative effect – high perceived costs reduce adoption likelihood.
Organizational Size	0.08	0.91	0.367	Not significant – adoption is consistent across firm sizes.
Sector of Operation	0.05	0.63	0.529	Not significant – differences across sectors are minimal.

Model Summary: $R = 0.68$, $R^2 = 0.46$, Adjusted $R^2 = 0.43$, $F(5, 114) = 9.63$, $p < 0.001$
Significance level: $p < 0.05$ (*); $p < 0.01$ (**)

The regression analysis demonstrates that technological readiness and perceived usefulness are the main drivers of cloud adoption intentions among Albanian SMEs. Firms that possess sufficient IT infrastructure and technical expertise are better positioned to integrate cloud systems effectively. Similarly, when managers recognize the usefulness of cloud solutions in improving efficiency, data accessibility, and decision-making, they exhibit stronger adoption intentions (Gangwar et al., 2015; Oliveira et al., 2014).

On the other hand, cost concerns emerged as a negative predictor, confirming that perceived financial burden – especially among micro and small enterprises – remains a barrier despite the long-term economic advantages of cloud computing. The non-significant effect of organizational size and sector indicates that cloud adoption tendencies are relatively uniform across Albanian industries, aligning with findings from other developing economies (Low et al., 2011; Hoti, 2015).

5. DISCUSSION

The findings of this study confirm that Albanian small and medium-sized enterprises (SMEs) are progressively adopting cloud-based Information System Technologies (IST), primarily motivated by the perceived benefits of cost reduction, scalability, and enhanced collaboration. This aligns with existing international research emphasizing that financial efficiency and operational flexibility are key drivers of cloud adoption among SMEs in developing economies (Oliveira et al., 2014; Gangwar et al., 2015).

The regression analysis indicated that technological readiness ($\beta = 0.45$, $p < 0.01$) and perceived usefulness ($\beta = 0.39$, $p < 0.05$) are the strongest predictors of adoption intention. These results suggest that SMEs with adequate IT infrastructure and awareness of cloud advantages are more likely to integrate cloud-based solutions effectively. This supports the Technology–Organization–Environment (TOE) framework, which highlights the central role of technological capability and managerial perception in innovation diffusion (Tornatzky & Fleischer, 1990).

However, the research also revealed several persistent barriers that limit widespread adoption. The most critical challenge reported by 61% of respondents was cybersecurity and data privacy concerns, reflecting widespread apprehension about third-party data management and compliance with international security standards (Low et al., 2011; Hoti, 2015). Furthermore, insufficient technical expertise (54%) and financial limitations (49%) were identified as significant constraints, particularly for micro and small firms that lack dedicated IT staff or resources for cloud migration. The absence of government incentives (42%) further exacerbates these limitations, indicating that the Albanian policy environment has yet to develop structured support for digital transformation.

Another notable insight concerns the non-financial advantages of cloud adoption. Over two-thirds (68%) of SMEs reported improvements in employee collaboration and communication, demonstrating how digital integration enhances workflow efficiency and organizational cohesion. This benefit is particularly relevant in the post-pandemic era,

where hybrid and remote working models demand flexible and secure digital platforms (European Commission, 2023).

Overall, these results reveal a mixed landscape: while awareness and adoption of cloud systems are increasing, structural and institutional weaknesses still constrain full integration. Addressing these challenges requires a multi-stakeholder approach involving government bodies, higher education institutions, and the private sector. Joint initiatives could include professional training programs, cybersecurity certification frameworks, and financial incentives for SMEs adopting digital solutions. Such cooperation would help build a trust-based and innovation-oriented ecosystem, accelerating Albania's alignment with broader European digitalization goals.

6. CONCLUSION

Cloud-based Information Systems have become an essential element of modern business strategy, offering SMEs the opportunity to enhance efficiency, competitiveness, and innovation capacity. This study provides empirical evidence on the current state of cloud adoption among Albanian SMEs, revealing both encouraging progress and persistent challenges.

The analysis confirmed that SMEs in Albania are increasingly aware of the strategic potential of cloud technologies. The main drivers of adoption – technological readiness, perceived usefulness, and cost reduction – indicate a growing recognition of the cloud's role in enabling flexible and efficient business operations. However, barriers such as cybersecurity concerns, limited technical expertise, and financial constraints continue to slow the pace of adoption.

To achieve sustainable digital transformation, policy interventions are essential. The Albanian government should prioritize the development of supportive frameworks that promote affordable access to cloud infrastructure, strengthen data protection laws, and expand national digital literacy programs. Collaboration between universities, IT associations, and industry stakeholders could further support this goal by providing specialized training and consulting services tailored to SMEs.

In conclusion, this research contributes to the understanding of cloud adoption behavior in developing economies and provides a foundation for future studies examining the interplay between technology readiness, organizational culture, and innovation capacity. By addressing the identified barriers and fostering an enabling environment, Albania can accelerate its transition toward a digitally empowered SME sector, capable of competing effectively in the regional and global marketplace.

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MODELING AND FORECASTING THE EURO/LEK EXCHANGE RATE USING ADVANCED TIME SERIES MODELS AND ARTIFICIAL INTELLIGENCE

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*Dorjan Zela*²

Abstract

The Euro/ Lek exchange rate is a key indicator for the financial stability and economic development of Albania, directly affecting foreign trade, remittances and monetary policies. This study aims to model and forecast the performance of the Euro/ Lek exchange rate using combined statistical and artificial intelligence approaches. Initially, the structure of historical data is analyzed through classical time series methods such as ARIMA and SARIMA, which provide the basis for capturing linear features and seasonality. Then, to address the complexity and non-linear behavior of the market, artificial neural network (ANN) and Long Short-Term Memory (LSTM) models are integrated, building a hybrid ARIMA-ANN approach. The comparison of the models' performance is carried out through error indicators such as RMSE, MSE and MAPE, demonstrating that hybrid models provide more accurate results in short- and medium-term forecasting. The study findings suggest that the use of advanced artificial intelligence methods, in combination with traditional models, represents a powerful tool for banks, businesses and policymakers in risk management and in making strategic decisions on the exchange rate.

Keywords: Euro/ Lek, time series, ARIMA, artificial neural network, financial forecasting

1. INTRODUCTION

Course The Euro/ Lek exchange rate represents a INDExES essential THE stability FINANCIAL IN Albania, after affects directly IN exports, imports, remittances AND POLICIEs Monetary fluctuations IN this course reflect factor macroeconomic HOW inflation, interest rates, flows FOREIGN AND situation Therefore, the modeling The Correctly The this COURSE IS The NECESSARY ABOUT banks, businesses AND policymakers THAT AIMING risk management AND pLANNING medium term.

Goal the this STUDIES IS THE mold AND predict Euro/ Lek exchange rate using ACCESS THE advanced THE SERIES LIMITS AND intelligence artificial, including ARIMA, SARIMA, Networks models Neuronal Artificial Neural Network (ANN) and Long Short-Term Memory (LSTM). Combination The METHODS classic with patterns hybrid (ARIMA-ANN) aims THE use the power descriptive THE pattern LINEAR AND the flexibility of intelligence artificial ABOUT THE caught non- linear behaviors THE market.

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2. METHODOLOGY AND COUNTRY DEVELOPMENT

2.1 Data and their preparation

of RECORDS They include COURSE average monthly EUR/ALL for the period 2013–2024, TAKEN by the Bank of Albania. The series was analyzed ABOUT stationarity with the ADF test and ABOUT autocorrelation through ACF and PACF. If SERIES IS NO stationary, it differentiate WHILE ACHIEVED stationary:

∇^dy_t = (1 - B)^dy_t

where B is OPERATOR The delay and d is degree of differentiation.

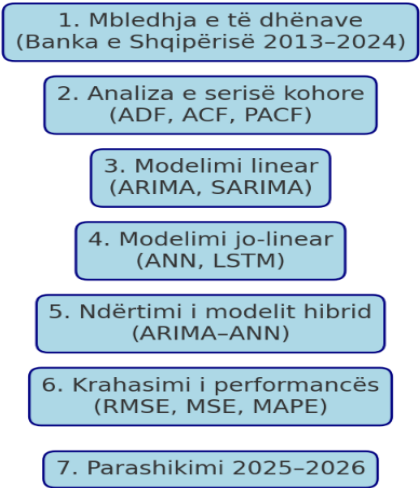


Fig. 1. Architecture Study Methodology

2.2 ARIMA model

Model ARIMA (p,d,q) grab BEHAVIOR LINEAR through THREE parameters: p (autoregressive), d (differential), q (average) moving).

Formula: $y_t = c + \sum_{i=1}^p \phi_i y_{t-i} + \sum_{j=1}^q \theta_j \epsilon_{t-j} + \epsilon_t$

The parameters were determined with the AIC and BIC criteria, identifying the optimal ARIMA (1,1,1) model.

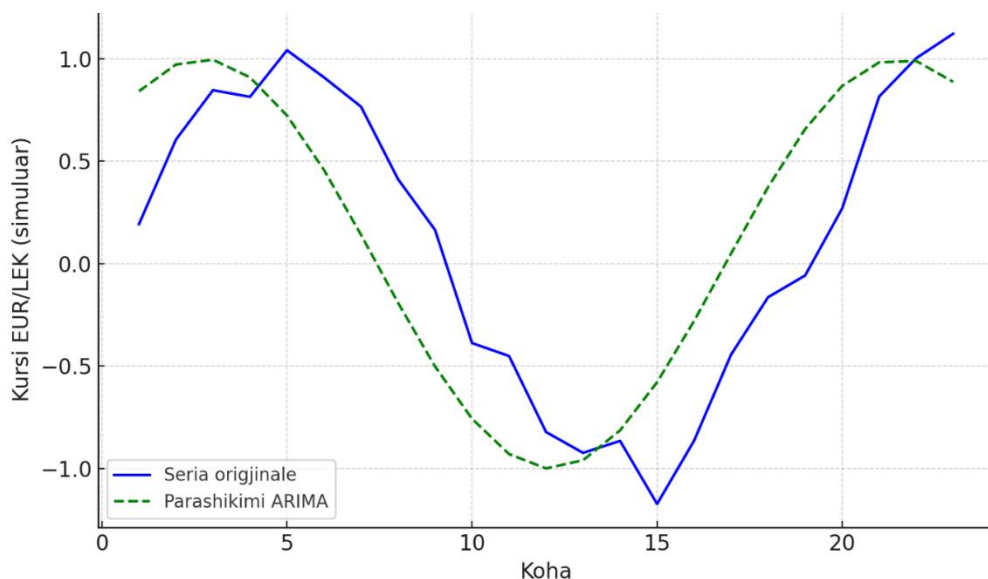


Fig. 2. ARIMA model structure

2.3 SARIMA model

ABOUT seasonality was used SARIMA (p,d,q)(P,D,Q)s with s=12 months. Model SARIMA (1,1,1)(0,1,1) 12 showed performance THE good ABOUT cycles annual THE course.

$$\phi_p(B^S)\phi_p(B)(1-B)^d(1-B^S)^Dy_t = \theta_q(B^S)\theta_q(B)\epsilon_t \text{ ku } s = 12 \text{ muaj}$$

2.4 ANN model

Mesh neuronal artificial shape non- linear behavior through functions THE activated like sigmoid or ReLU. Network consisted BY THREE layer (input–hidden–output) and was trained with the backpropagation algorithm.

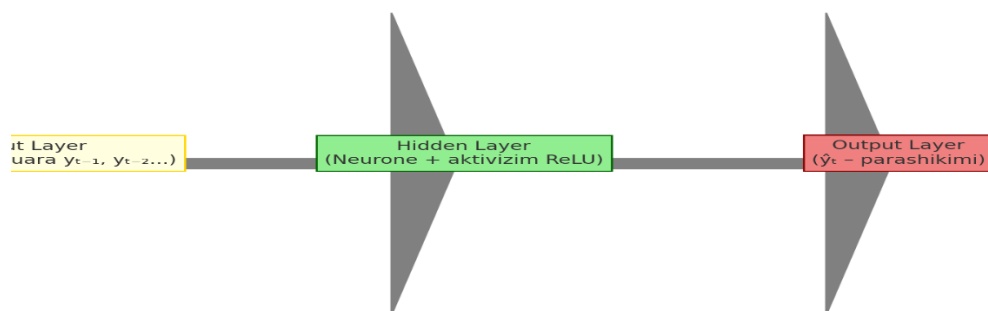


Fig. 3. ANN Network Structure

2.5 LSTM model

Model (LSTM) ch dynamic long-term by preserving REMINDER historical. It was im-
plemented in Python (Keras / TensorFlow) with 100 epochs and 64 neurons ABOUT layer.

2.6 Hybrid ARIMA–ANN Model

Model hybrid ARIMA–ANN combines ARIMA for component LINEAR and ANN for
the non- linear part.

Formula: $y_t = \hat{y}_t^{ARIMA} + f(\hat{e}_t)$, where ANN models the ARIMA residuals for greater
accuracy.

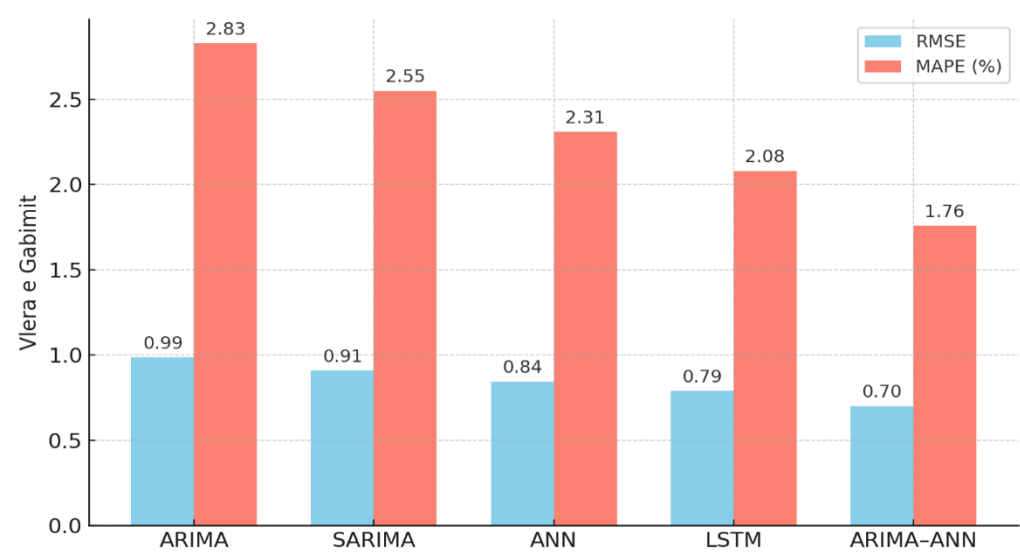


Chart 1. comparison of the performance of the models

3. RESULTS AND DISCUSSION

Model	RMSE	MSE	MAPE (%)	Description
ARIMA(1,1,1)	0.987	0.975	2.83	Basic linear model
SARIMA(1,1,1)(0,1,1) ₁₂	0.910	0.828	2.55	grab seasonality
ANN	0.845	0.714	2.31	Captures nonlinearity
LSTM	0.790	0.624	2.08	grab TRENDS LONG
ARIMA–ANN	0.701	0.492	1.76	performance best

Models intelligent (ANN, LSTM) provide PREDICTIONS MORE THE accurate, while
ARIMA–ANN offers performance MORE THE good ABOUT the period 2013–2024.

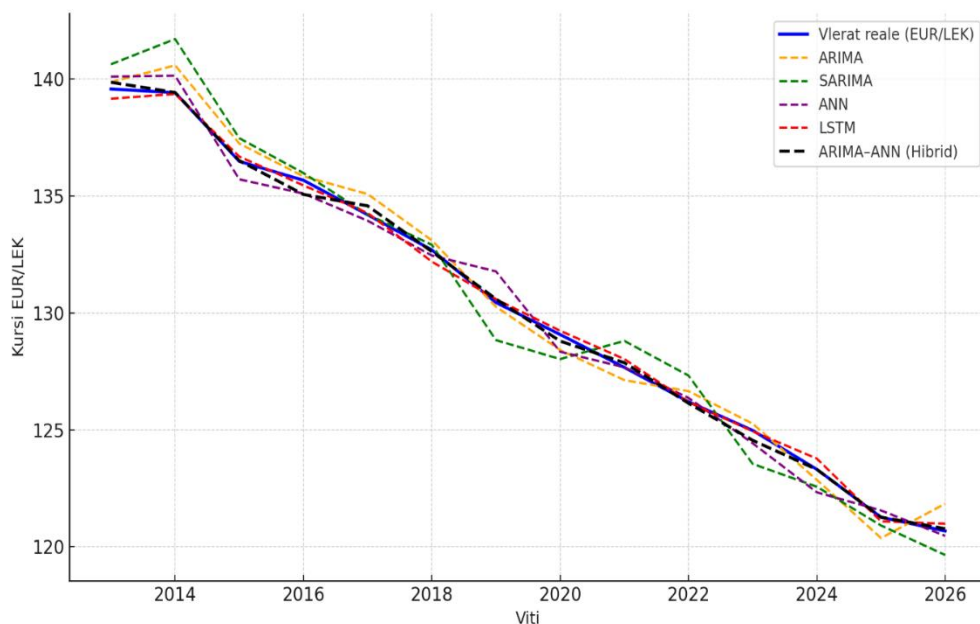


Chart 2. comparison the prediction THE EURO/LEK exchange rate

4. CONCLUSIONS

ARIMA and SARIMA models are THE Adequate ABOUT behavior linear, while ANN and LSTM capture nonlinear dynamics. Model hybrid ARIMA–ANN resulted MORE The Correctly AND MORE The sustainable. These results can THE uSED ABOUT PREDICTIONS strategic BY INSTITUTIONS FINANCIAL AND banks.

5. RECOMMENDATIONS

1. Integration The pattern HYBRID IN PRACTICES BANKING ABOUT risk management foreign exchange.
2. Expansion the data with indicators macroeconomic (inflation, GDP, remittances).
3. Implementation The pattern THE AdvAnced like GRU and Transformer for comparison.
4. Construction the an interactive dashboard ABOUT PREDICTIONS monthly EUR/ALL.
5. Exploration The pattern quantum (Quantum LSTM) for PREDICTIONS IN AGE real.

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BLOCKCHAIN AND THE NEW HEALTH CONTRIBUTIONS FUND

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Abstract

This paper analyzes and proposes the creation of a deduced IT system for the Health Contribution Fund in the Republic of Albania, based on blockchain technology. Relying on international practices of new digital innovations in the health sector and adapting them to the Albanian institutional and financial reality, the study argues that the introduction of blockchain technology tends to reduce financial abuses, strengthen institutional accountability, and increase citizens' trust in all mechanisms of the public health system.

This research will use a mixed-methods approach, combining three main components (interview, survey, and legal/institutional analysis) and the design of a pilot project for practical implementation. The application of blockchain in healthcare in developing countries such as Albania is considered a practical guide for policymakers towards transparent, efficient, and citizen-oriented financing.

Keywords: Blockchain, Healthcare Fund, Transparency, Smart Contracts, Albania

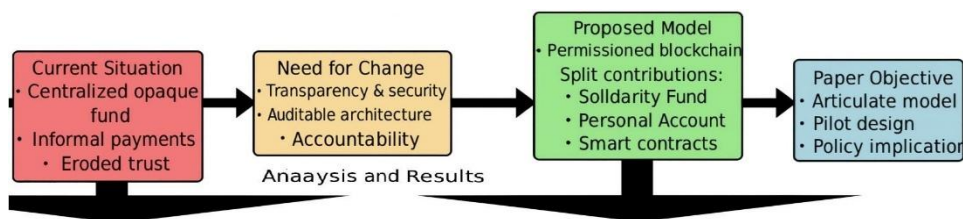
JEL classification: I13, I18, O33, H51

INTRODUCTION

The current system of the Health Contribution Fund in Albania faces ongoing challenges related to financial mismanagement, lack of transparency, and inefficiency in resource allocation, which limit citizens' freedom to choose their service provider. The health insurance contributions of Albanian citizens are collected in a centralized fund managed by the state, which is often perceived as opaque (Albanian Health Insurance Institute, 2023; OECD, 2020). This way of functioning enables informal payments, reduces equality and meritocracy, and damages public trust. In this paper, we will reflect on the transition from the theoretical concept to a practical testing phase, starting with a pilot limited to a single public institution, as this is the most straightforward and feasible step for Albania (Albanian Health Insurance Institute, 2023; OECD, 2020).

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Source: Author's own elaboration, 2025.

Fig. 1. Overview of Current Challenges and Proposed Blockchain-Based Solution

LITERATURE REVIEW

Contemporary literature on the digital transformation of the healthcare system consistently highlights the role of electronic health records (EHR), telemedicine, and artificial intelligence (AI) as important innovations that contribute to improving the quality of care, reducing costs, and increasing system efficiency (Wager, Lee & Glaser, 2017; Buntin et al., 2011; Adler-Milstein & Jha, 2017). These technologies enable more integrated data management in the healthcare system, improve coordination between service providers, and support evidence-based and value-based decision-making. However, interoperability challenges, high initial implementation costs, and lack of standardization and training of institutional staff remain major obstacles limiting the full impact of these technologies, especially in resource-constrained settings (Kruse et al., 2016; OECD, 2020). In this context, blockchain technology represents a new paradigm of data governance and financial transparency, combining ledger immutability, distributed governance, and advanced cryptographic security (Nakamoto, 2008; Tapscott & Tapscott, 2016).

Complementary studies (Kuo, Kim, & Ohno-Machado, 2017) have demonstrated the use of blockchain in biomedical data management, automated payments, and claims verification in health insurance systems.

Furthermore, developments in modern cryptography – such as elliptic curve cryptography (ECC) and zero-knowledge proofs – enable GDPR-compliant privacy protection while preserving auditability and data integrity (Katz & Lindell, 2021).

International empirical evidence demonstrates the concrete potential of blockchain in healthcare financing and governance. In Estonia, the national e-Health infrastructure uses blockchain for audit-proof traceability and secure exchange of clinical data between public and private institutions (Mettler, 2016; Linn & Koo, 2016). Singapore's hybrid model, which combines personal health accounts (Medisave) with state solidarity funds (MediShield Life), shows us that citizen participation can be harmonized with universal protection through digital financial control mechanisms (Ministry of Health Singapore, 2022; OECD, 2020). Similarly, voucher-based models implemented in the Netherlands and Sweden demonstrate that controlled competition and transparency in the flow of funds

promote efficiency and accountability among service providers (OECD, 2020; European Commission, 2021).

These international experiences converge towards a common conclusion among blockchain-enabled funds: preserving the principle of public solidarity while increasing citizen autonomy, strengthening institutional accountability, and ensuring full traceability of funds at every link in the system (Tapscott & Tapscott, 2016; Kuo, Kim, & Ohno-Machado, 2017; OECD, 2020).

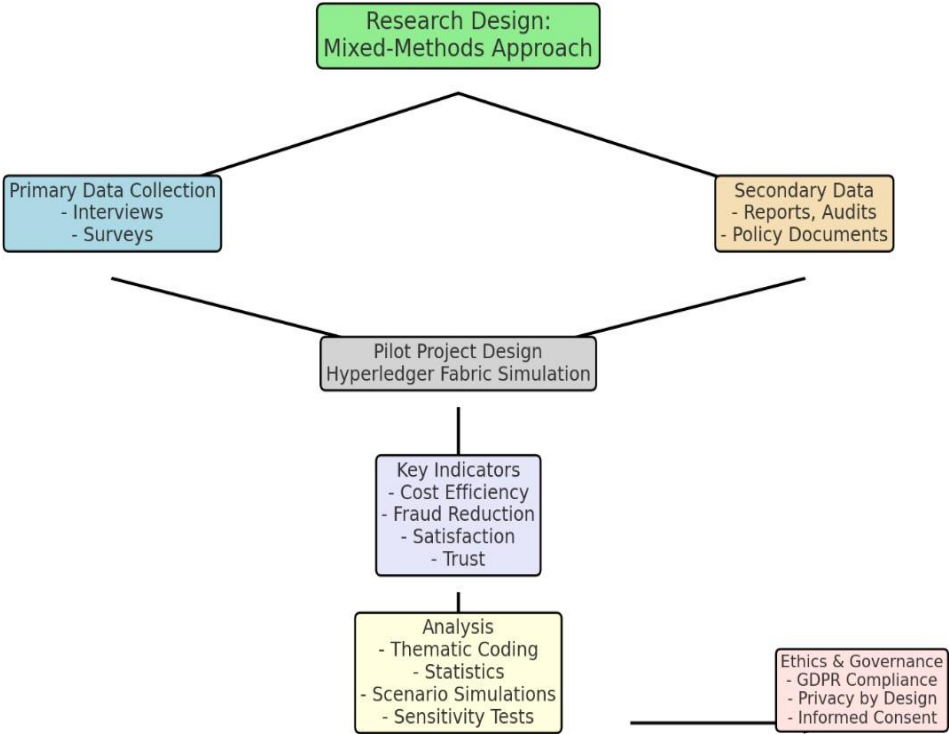
For Albania, adopting such a model represents a strategic opportunity to modernize the financing of the healthcare system by combining personal contributions, the public solidarity fund, and private insurance within a unified and audited architecture through blockchain technology. This transformation would enable automated payments, real-time financial monitoring, and increased public trust. It aligns the Albanian system with European practices of Value-Based Healthcare and addresses the lack of transparency, informality, and institutional fragmentation that characterize the current system.

METHODOLOGY

The paper uses a mixed-methods design, combining qualitative and quantitative approaches to capture the multifaceted implications of introducing a blockchain-based Health Contribution Fund in Albania, for integrating primary and secondary data into comparative analyses (Creswell & Plano Clark, 2018; Yin, 2018). Primary data will include semi-structured interviews with healthcare professionals, institutional leaders, policymakers, and financial administrators to identify perceptions on transparency, governance, and institutional readiness for blockchain adoption, as well as structured surveys with citizens and service providers, which will measure attitudes towards personal health funds, perceptions of public trust, and the level of digital readiness for the use of new platforms. Secondary Data Collection includes the combination of several sources such as Institutional Reports and Financial Audits of FSDKSH and public healthcare institutions, Policy and Strategic Documents from OECD, WHO and European Commission on the digitalization of health financing, as well as administrative data sets, which will be used for comparisons between the existing and the proposed model on blockchain which enable a complete analysis of the impact of digitalization on transparency, efficiency and financial governance.

This pilot project will simulate the process of sharing contributions between the Solidarity Fund and Personal Digital Accounts, testing the functionality of smart contracts for sharing, verification, and automatic payments. The pilot will enable pre- post analysis to identify improvements in transparency, request processing time, and abuse reduction. The sampling will follow a stratified design to ensure representation from all regions of the country (urban and rural) and all institutional levels (primary, secondary, and tertiary care). Primary Variables and Key Indicators will include a ratio of administrative costs (% saved after implementation), Average processing time for reimbursement requests, Financial fraud incidence rate, Citizen satisfaction and trust in the new system, while secondary variables include participation of private providers, equity of access, levels of digital trust, and perception of fairness in distribution.

Analytical techniques will be Thematic Coding for analyzing qualitative data from interviews (Braun & Clarke, 2006), descriptive and inferential statistical analysis for survey results (Hair et al., 2019), Scenario-Based Simulations to project the economic impact of the model, and Sensitivity Tests to test the robustness of the results (Saltelli et al., 2008) to changes in key variables. Ethical and governance issues are integrated into every phase of the research, where informed consent will be obtained from all participants. Role-based access will be used to ensure data confidentiality. The Pilot Project will be subject to institutional ethical review, while privacy-by-design principles will be implemented, including pseudonymization and secure management of cryptographic keys.



Source: Author’s own elaboration, 2025.

Fig. 2. Research Design and Methodology Flow

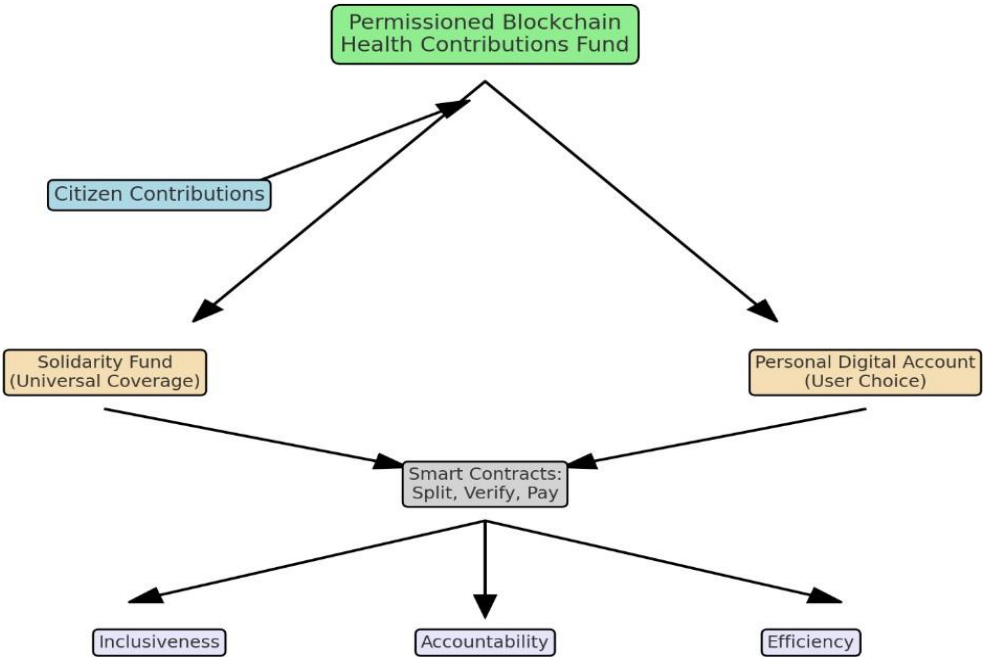
PROPOSED BLOCKCHAIN-BASED HEALTH CONTRIBUTIONS FUND

The Health Contribution System, which is built on Blockchain technology, is managed by the Health Insurance Institute, public hospitals, and accredited private providers, all under the watchful eye of the Ministry of Health and Social Welfare. The e-Albania platform serves as the primary digital hub that connects everyone involved – citizens, healthcare providers, and the Health Insurance Institute.

Through e-Albania, citizens can easily access their personal health contribution accounts, monitor their balances, and authorize payments for medical services. Healthcare providers utilize the same platform to submit verified claims and receive automated reimbursements. Meanwhile, the Institute takes care of fund allocation and oversight.

All contribution data and transactions are securely recorded on a permissioned blockchain ledger, creating cryptographic proof that guarantees verifiable audit trails, safe data exchanges between institutions, and complete regulatory transparency (Cachin, 2016; Androulaki et al., 2018; Hyperledger Foundation, 2022).

Smart contracts form the central pillar of the system's operation. They encode the logic for the allocation of contributions, eligibility verification, and claims, thus automating payments and eliminating unnecessary intermediaries. Once a verified service is provided, the smart contract triggers disbursement from the solidarity fund or the individual's personal account. From the user perspective, citizens interact with the system through a secure digital portal that displays their balances and transaction history, while healthcare providers submit claims through standardized APIs (Kuo, Kim, & Ohno-Machado, 2017; Tapscott & Tapscott, 2016). Auditors and regulators are given role-based access to monitor transactions in real time. In the event of disputes, codified resolution mechanisms rely on on-chain proof to support arbitration, ensuring transparency and fairness. This architecture combines inclusion, accountability, and efficiency, positioning blockchain not simply as a technological solution, but as a systemic innovation in healthcare financing (Cachin, 2016; Androulaki et al., 2018; Hyperledger Foundation, 2022).

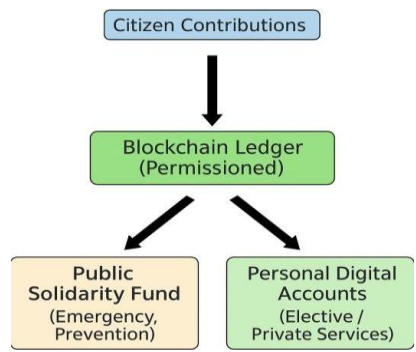


Source: Author’s own elaboration, 2025.

Fig. 3. Conceptual Architecture of the Blockchain-Based Health Contributions Fund

ANALYSIS AND EXPECTED RESULTS

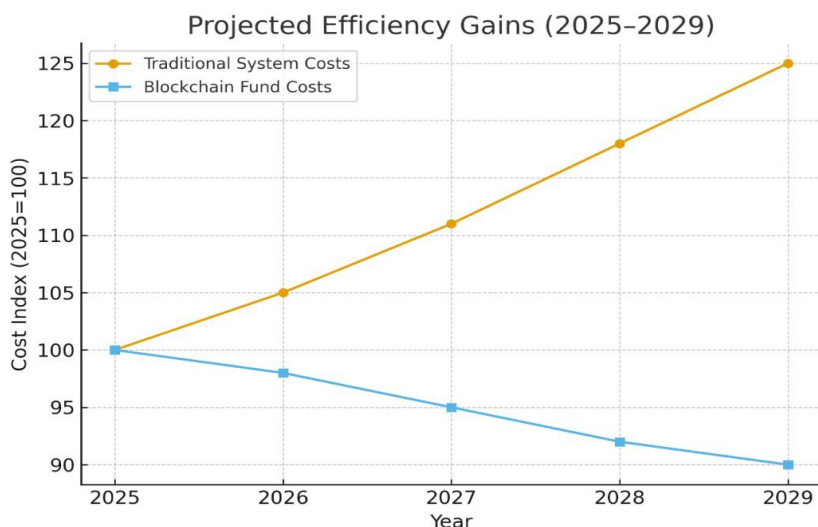
Significant benefits are expected from the implementation of a blockchain-based health contribution fund. In the traditional system, administrative costs and financial leakages increase progressively due to inefficiencies, informal payments, and lack of traceability. These losses are reduced by this proposed blockchain-based model through transaction automation, real-time auditing, and fraud prevention. On the other hand, citizens gain more control and choice over their health spending, and providers benefit from faster reimbursements and reduced bureaucracy. A comparison with the international models of Singapore, Sweden, the Netherlands and Estonia supports the sustainability of the expected benefits, where Singapore demonstrates that the combination of personal accounts and a state solidarity fund can maintain the balance between individual responsibility and universal protection (Ministry of Health Singapore, 2022; OECD, 2020), Estonia shows that blockchain-based auditing ensures full transparency and data integrity (Mettler, 2016; Linn & Koo, 2016), the Netherlands and Sweden illustrate that regulated competition and citizen choice mechanisms foster efficiency and higher quality in health care. In the Albanian context, the implementation of this model is expected to reduce informal payments, increase the financial sustainability of the system, and align health governance with EU standards for transparency and accountability (Albanian Health Insurance Institute, 2023; OECD, 2020).



Source: Author’s own elaboration, 2025.
Fig. 4. Blockchain-Based Health Contributions Fund Model

This figure compares the projected cost trajectories between the traditional healthcare financing model and the blockchain-based Health Contribution Fund. While costs in the traditional system are expected to continue to increase due to administrative inefficiencies and fraud-related leakages, the blockchain model shows a downward trend, reflecting the gains from automation, transparency and improved accountability. Similar trends are observed internationally, with Estonia reporting improved audit efficiency, Singapore automated fund management, the Netherlands 10-15% lower administrative costs, and Switzerland seeing 20-30% cost reductions.

The results highlight the potential for measurable cost savings over the first five years of implementation (World Health Organization, 2020; Kuo, Kim, & Ohno-Machado, 2017).



Source: Scenario simulation by the authors, based on international evidence from Estonia, Singapore, the Netherlands, and Switzerland (Mettler, 2016; Ministry of Health Singapore, 2022; OECD, 2020; Deloitte, 2019).

Fig. 5. Projected Efficiency Gains (2025–2029)

Table 1: Traditional vs. Blockchain-Based Healthcare Financing Models

Aspect	Traditional Fund	Blockchain-Based Fund
Transparency	Limited reporting; fragmented audit trails	Immutable ledger; real-time auditability
Efficiency	Manual checks; multiple intermediaries	Smart contracts automate verification and payment
Fraud Prevention	Ex-post detection; weak deterrence	End-to-end traceability deters and detects fraud
Citizen Agency	Minimal choice; limited visibility	Personal accounts; portal-based visibility
Provider Liquidity	Slow reimbursements; opacity	Faster claims; predictable rules
Interoperability	Low; proprietary silos	Standardized APIs; role-based access

Source: Author's own elaboration.

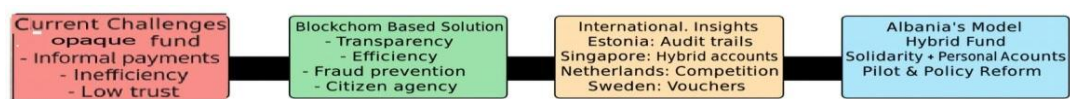
Table 1 highlights how the blockchain-based Health Contributions Fund addresses structural weaknesses of the traditional system. Transparency is enhanced through

immutable audit trails; efficiency improves via automation; fraud is deterred through real-time monitoring; and citizens, providers, and auditors benefit from greater visibility and interoperability.

Table 2: International Experiences Relevant to Albania

Country	Mechanism	Relevance to Proposed Model
Estonia	Nation-scale e-Health with audit trails	Ensures secure data exchange, integrity, and accountability
Singapore	Personal accounts + solidarity (Medisave)	Inspires hybrid design combining solidarity and individual empowerment
Netherlands	Choice and competition among providers	Reinforces outcome-based financing and quality incentives
Sweden	Voucher-style access for services	Balances public oversight with user choice

Source: Author's synthesis from international cases (Tapscott & Tapscott, 2016; Kuo, Kim, & Ohno- Machado, 2017; Hyperledger Foundation, 2022)



Source: Author's own elaboration, 2025

Fig. 6. Integrating Challenges, Solutions, and International Lessons

The figure illustrates the logical flow of transforming the current challenges of healthcare financing in Albania into a blockchain-based solution, informed by international practices and translated into a hybrid model adapted to the Albanian context.

ILLUSTRATIVE EQUATION

To formalize the expected efficiency gains, we introduce a simplified benefit function. The cumulative net savings over five years (S) are modeled as a function of the baseline administrative cost (A_0), the proportion of administrative reduction achieved (α), the baseline level of fraud-related leakage (F_0), and the proportion of fraud reduction (ϕ) (OECD, 2020; WHO, 2020):

$$S = 5 \cdot (A_0 \cdot \alpha + F_0 \cdot \phi) \tag{1}$$

In this representation, $A_0 \cdot \alpha$ captures annual savings from reduced administrative overhead, while $F_0 \cdot \phi$ captures savings from lower fraud leakage. Multiplying by five

approximates cumulative savings over a five-year horizon, providing a transparent and straightforward measure of the potential financial benefits of adopting the blockchain-based fund.

DISCUSSION AND POLICY IMPLICATIONS

The introduction of blockchain technology in healthcare financing in Albania requires a multidimensional reform strategy, combining legal changes, institutional reorganization, and technological adaptation to international standards. From a legal perspective, the recognition of smart contracts should be included in national legislation as a valid legal instrument. This should be accompanied by sector-specific regulations, defining the responsibilities of institutional actors, mechanisms for dispute resolution, and protocols for supervised access to distributed ledgers (European Commission, 2022; Savelyev, 2017). The implementation of the model requires a consortium-based governance structure, where active participants are: the Ministry of Health and Social Protection, the Health Insurance Institute (FSDKSH), licensed private providers, and public technology and audit institutions (Tapscott & Tapscott, 2016; Kuo, Kim, & Ohno-Machado, 2017). In this context, technical capacity building is required for IT and cybersecurity specialists, clinical administrators, and policymakers, who will lead the digital transformation process. From a technological point of view, the model requires compliance with international information security standards (ISO/IEC 27001) and the implementation of a "Zero Trust" architecture to prevent unauthorized access and external interference (Microsoft, 2021; ISO, 2022). These measures should be supported by secure management of cryptographic keys, continuous monitoring of system integrity, and the use of privacy-preserving analytics, through pseudonymization (Katz & Lindell, 2021; European Union Agency for Cybersecurity, 2021, selective data disclosure, and zero-knowledge proofs. These mechanisms ensure that the blockchain system simultaneously maintains public trust and compliance with data protection regulations.

The implications of this model go beyond the field of healthcare (World Health Organization, 2020; OECD, 2020). If the blockchain-based Health Contribution Fund proves successful, its architecture could be scaled up to other areas of public financing, such as pensions and social security, education and public scholarships, and management of social or regional development funds. Such a model would reinforce Albania's European integration agenda, positioning the country as a regional leader in digital governance and fiscal transparency.

In academic terms, this initiative will contribute to enriching the international literature on blockchain adoption in developing contexts, providing a unique case study for institutional innovation policies (Kouhizadeh, Saberi, & Sarkis, 2021; Tapscott & Tapscott, 2016).

SPONSORSHIP (TNR 12PT., BOLD, LEFT)

This study received no financial support.

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The authors thank the Mediterranean University of Albania for academic guidance and institutional support. Special recognition is also given to the author's two-year professional experience as Director of IT and Clinical Engineering at the University Hospital Center "Mother Teresa" in Tirana, which provided valuable insights into the operational and technological challenges of healthcare systems in Albania.

To complement the conceptual and analytical framework of the proposed Blockchain-Based Health Contributions Fund, this annex presents sample instruments for primary data collection, including survey questionnaires and semi-structured interview guides. These tools are designed to capture the perceptions, readiness, and practical experiences of different stakeholder groups – patients, healthcare providers, and institutional administrators – regarding the potential implementation of a blockchain-enabled health financing system in Albania. The instruments aim to ensure triangulation between citizen perspectives, operational realities, and governance insights.

PATIENT SURVEY (SAMPLE QUESTIONS)

The patient questionnaire focuses on user trust, access, and digital engagement with the proposed personal health contribution system. Key sample items include:

- Perceived access to personal health and financial data;
- Level of trust in data security and privacy protection;
- Willingness to use personal digital health accounts for payments.
- Satisfaction with current claims and reimbursement processes;
- Degree of digital readiness and familiarity with e-services (e-Albania, e-health portals, etc.).

PROVIDER SURVEY (SAMPLE ITEMS)

The provider survey examines institutional preparedness and perceived administrative impacts of blockchain integration. Representative items include:

- Use and interoperability of Electronic Health Records (EHR) and telemedicine systems;
- Perceived administrative burden in claims reporting and reimbursement.
- Readiness to adopt smart-contract-based workflows;
- Experience with data exchange, verification, and reimbursement timeliness;
- Expected benefits and concerns regarding blockchain adoption in health financing.

The semi-structured interview guide for administrators explores strategic, operational, and regulatory dimensions relevant to the pilot implementation phase. Indicative themes and questions include:

- Patterns of financial fraud and current mitigation measures;
- Audit and compliance processes within health financing institutions;

- Legal and procedural bottlenecks for integrating blockchain and smart contracts;
- Technical readiness and API maturity for interoperability across institutions.
- Key Performance Indicators (KPIs) expected from the blockchain pilot (e.g., transparency, cost savings, efficiency);

All instruments will be pre-tested to ensure clarity, cultural relevance, and ethical compliance. Participants will provide informed consent, and data collection will adhere to GDPR-aligned confidentiality and privacy safeguards.

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LEGAL REGULATION FOR ONLINE PLATFORMS IN THE EU. HARMONIZATION OF ALBANIAN LEGISLATION WITH THE EU LEGAL FRAMEWORK ON CIVIL LIABILITY

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Abstract

The evolution of the audiovisual market and the emergence of online platforms have fundamentally transformed the way media content is distributed and consumed. In addition to the obvious benefits related to access, diversity and innovation, these developments have also brought about a number of legal, ethical and economic concerns. The European Commission has responded by drafting a comprehensive legal framework, such as the Digital Services Regulation (DSA) and the Digital Market Services Regulation (DMA), which set out the obligations of online platforms, in particular those with very high impact (VLOP), to ensure transparency, accountability and the protection of users' rights.

A key aspect of the discussion is the relationship between online platforms and media service providers, highlighting the obligations that online portals have to provide mechanisms that enable media service providers to declare their editorial status and independence, to respect transparency standards, to ensure human control over content generated by artificial intelligence and to establish direct contacts with national regulatory authorities.

The paper also analyses the transposition of this framework in non-EU countries, with particular emphasis on Albania, where the current legal framework requires updating and full harmonization with the *acquis communautaire*. In conclusion, the article provides a critical overview of the need to strengthen Albanian legislation, proposing recommendations for increasing legal certainty and protecting the public interest in the digital space.

Keywords: (up to 5 words) online platforms, media market, Digital Services Act, EU legal framework, digital intermediaries, civil liability

INTRODUCTION

Online platforms were initially created as technological solutions for communication and information exchange, and later evolved into interactive social, economic, and media spaces. The first online platforms emerged in the 1990s–2000s,³ consisting mainly of email

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³ OECD (2019), *An Introduction to Online Platforms and Their Role in the Digital Transformation*, OECD Publishing, Paris.

services, forums, and chat rooms that marked the beginning of digital interaction among users. Alongside them appeared news portals and informational websites, such as Yahoo! (1994) and Google (1998), which revolutionized search engines¹. The years 2000–2010 were marked by the rise of social networks and Web 2.0, a period during which the web transitioned from a space where users only consumed content to one where they could also create and share it.² This led to the creation of platforms such as Facebook (2004), YouTube (2005), and Twitter (2006), where users could post content and communicate directly³. Later, with the development of mobile applications, modern platforms such as Instagram, Tik-Tok, LinkedIn, and others became part of everyday life. Today, online platforms serve not only for communication but also for business, education, e-commerce, public services, and media. In the 1980s, the audiovisual broadcasting sector gained an important European dimension. Technological developments, such as the spread of satellite television and cable networks, enabled the distribution of signals across national borders⁴. This new technical and commercial step contributed to the creation of a common European audiovisual market, shifting the focus from purely national media policies to a necessary coordination at the continental level. This dynamic coincided with the growing institutional awareness within the European Union and the Council of Europe, which took steps to establish a regulatory framework for cross-border broadcasting. The key document that institutionalized this development was the European Convention on Transfrontier Television, adopted by the Council of Europe, aiming to provide a common basis for the free distribution of audiovisual content within the European area⁵. In parallel, the European Union undertook similar initiatives through the adoption of the “Television without Frontiers Directive”, which later evolved into the Audiovisual Media Services Directive (AVMSD), harmonizing rules for television broadcasting and facilitating the circulation of media content within the internal market⁶.

In this way, the 1980s marked not only a technological transformation but also a fundamental political and legal moment that enabled the integration of the European

¹ Schafer, V., & Thierry, B. G. (2018). The 90s as a turning decade for Internet and the Web. *Internet Histories*, 2(3–4), 225–229. <https://doi.org/10.1080/24701475.2018.1521060>

Brin, S., & Page, L. (1998). *The anatomy of a large-scale hypertextual web search engine*. *Computer Networks and ISDN Systems*, 30(1–7), 107–117

² O'Reilly, T. (2005). *What is Web 2.0: Design patterns and business models for the next generation of software*. O'Reilly Media. <https://www.oreilly.com/pub/a/web2/archive/what-is-web-20.html>

³ Rowland, B. (2010). *The Facebook Effect: The Inside Story of the Company That Is Connecting the World*. Harper Business.

⁴ European Commission, *Television Without Frontiers Directive* (89/552/EEC), Official Journal of the European Communities, L 298, 17.10.1989, fq. 23–30.

⁵ Council of Europe. (2015). *Explanatory Report to the European Convention on Transfrontier Television (ETS No. 132, amended by Protocol CETS No. 171)*. Strasbourg: Council of Europe Publishing.

⁶ Council of the European Communities. (1989). Council Directive 89/552/EEC of 3 October 1989 on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the pursuit of television broadcasting activities (“Television Without Frontiers”). Official Journal of the European Communities, L 298, 17.10.1989, fq. 23–30.

audiovisual market. Around 2005, technological evolution in the audiovisual sector led to the emergence of on-demand services, initially delivered through traditional broadcasting frequencies, and later increasingly via Internet Protocol (IP). This shift implied a profound transformation in the way media content was consumed, moving from a linear model, where audiences followed programming provided by broadcasters, to a non-linear model that gave users control over when and how they watched content.¹

The development of these services created the need for a new regulatory approach at the European level. While cross-border and satellite television required harmonization to allow the free circulation of signals, on-demand services raised other issues, such as the protection of minors, ensuring cultural diversity, and access to content. This generated a new phase in European policymaking, where the Audiovisual Media Services Directive (AVMSD 2010/13/EU) included, for the first time, rules specifically for non-linear media services.

This period marked a gradual transition toward a digital ecosystem in which traditional broadcasting and online services coexist, but with an increasing emphasis on IP-based platforms, which today form the core of the new audiovisual market. Online media and digital platforms, entering the audiovisual market, began to compete directly with traditional providers for audiences and economic resources. This period signaled a deep transformation of the media ecosystem, as services such as YouTube, Netflix, Amazon Prime Video, and later Disney+ changed the production, distribution, and consumption of audiovisual content at the European level.²

The development of Internet-based transmission models (streaming) created a new structural competition with traditional television operators, diverting a substantial portion of audiences toward on-demand content and increasing the market's reliance on global platforms.³ These changes were also reflected in European policymaking, which led to the adoption of Directive (EU) 2018/1808, adapting the Audiovisual Media Services framework to the new reality of digital platforms and online-distributed content.⁴

This development created a new competitive balance, in which traditional linear providers (national or satellite television broadcasters) had to adapt to business models based on targeted advertising, monthly subscriptions, and advanced user data analytics. For the first time, international platforms assumed a dominant role in the distribution of media content within the European market, raising a series of challenges for public policy, such

¹ Sarikakis, K. & Ganter, S. (2014). "The EU's Audiovisual Media Services Directive: Protecting European Content in the Digital Age." *International Journal of Communication*, 8, 2744–2760

² European Commission. (2016). *Communication on Online Platforms and the Digital Single Market: Opportunities and Challenges for Europe* (COM(2016) 288 final). Brussels

OECD. (2019). *Video-on-Demand Services: Economic and Policy Implications*. Paris: OECD Publishing.

³ European Parliament & Council. (2018). *Directive (EU) 2018/1808 amending Directive 2010/13/EU on the coordination of certain provisions concerning the provision of audiovisual media services*. *Official Journal of the European Union*, L 303/69.

European Audiovisual Observatory. (2021). *Yearbook 2020/2021: Key trends in the European audiovisual sector*. Strasbourg: Council of Europe.

⁴ European Audiovisual Observatory. (2018). *The visibility of audiovisual works on TVOD catalogues in the EU*. Strasbourg: Council of Europe.

as ensuring fair competition, promoting cultural diversity, transparency in data usage, and market access.

In this context, the European Union intervened again with comprehensive revisions of the legal framework, including the update of the Audiovisual Media Services Directive (2018)¹ and the adoption of new regulatory acts for online platforms, such as the Digital Services Act (2022) and the Digital Markets Act (2022).² These instruments aim to ensure that global providers also meet European standards for transparency, consumer protection, and the promotion of European audiovisual productions.

In the contemporary audiovisual sector, three main categories of content distributors can be identified. First, traditional linear providers, represented by public and private broadcasting services (media service providers – MSPs), which transmit according to a predetermined schedule via terrestrial, satellite, or cable channels. Second, on-demand or non-linear services, which offer content according to users' requests and have transformed media consumption by allowing viewing at any time and on any device; this includes VOD models such as Netflix and Amazon Prime Video. Third, online platforms and digital intermediaries, such as YouTube, Facebook, or Tik-Tok, which are not traditional program providers but act as new “gatekeepers” that facilitate content distribution and strongly influence user access through algorithms and recommendation systems.³ These three categories of actors create a complex ecosystem where competition for audiences, resources, and public attention occurs at multiple levels, posing new challenges for regulation and public policy.

The first two categories are considered audiovisual media because content providers bear editorial responsibility – they know when and what content is being broadcast, and they are already subject to proper legal regulation.⁴ Online platforms, by contrast, are not audiovisual media because the provider does not have editorial responsibility and is not aware of the content that users will upload. Providers of these services have no editorial responsibility, the distributed programs are not “television-like,” and the content is user-generated.⁵

Therefore, the services offered by online platforms cannot be considered “media services” but rather “hosting services” and, as a result, did not fall within the scope of the old AVMS Directive or the previous Copyright Directive.

Online platforms have created significant benefits for consumers and innovation. They:

¹ European Parliament and Council. (2018). *Directive (EU) 2018/1808* amending Directive 2010/13/EU as regards the provision of audiovisual media services. Official Journal of the European Union, <https://eur-lex.europa.eu/eli/dir/2018/1808/oj>

² Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services and amending Directive 2000/31/EC (Digital Services Act) <https://eur-lex.europa.eu/eli/reg/2022/2065/oj/eng>

³ European Parliament and Council. (2010). *Directive 2010/13/EU on the coordination of certain provisions concerning the provision of audiovisual media services (Audiovisual Media Services Directive)*.

⁴ Regulation 2010/13/EU.

⁵ Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services.

- have helped the European Union internal market become more efficient through e-commerce;
- have facilitated cross-border trade both within and outside the Union;
- have created unprecedented opportunities for information to be freely shared on the internet and for citizens to express their views.

This has opened new opportunities for a range of European businesses and traders, easing their expansion and access to new markets. However, like any innovation, this technological development also brings challenges that require monitoring and regulation:

- The trade and exchange of counterfeit, dangerous, unauthorized, or otherwise illegally traded goods (including those imported by traders based outside the EU) is on the rise;¹
- The online dissemination of illegal content: digital services are exploited by certain users to spread child sexual abuse material, illegal hate speech, or to infringe copyright rules;²
- Recent studies by the European Union Intellectual Property Office (EUIPO) show that the digitalization of content distribution has generated a boom in copyright infringements (e.g., uploading films and streaming sports events³
- Threats to the safety of vulnerable users, particularly children;
- The advertising market, which remains the main source of revenue for the media industry, is now dominated by major platforms that employ micro-targeting and amplification techniques and capture up to 80% of advertising revenues in some countries.⁴
- Some major platforms have emerged as gatekeepers in digital markets, with the power to act as private rule-makers. These rules sometimes result in unfair conditions for businesses using these platforms and fewer choices for consumers⁵

These new challenges and the way platforms address them have a significant impact on fundamental rights online. The concept of “limited liability”⁶ has been one of the cornerstones of early regulation of digital services and online intermediaries. At its core, this concept establishes that providers of intermediary services – such as hosting platforms

¹ OECD — Mapping Global Trade in Fakes (2025).

² Damian BORNAS CAYUELA; Amani Romaissa DJAIL; Nathan WAJSMAN, ‘ONLINE COPYRIGHT INFRINGEMENT IN THE EUROPEAN UNION’ FILMS, MUSIC, PUBLICATIONS, SOFTWARE AND TV (2017-2023) TB-01-24-000-EN-N ISBN: 978-92-9156-363-0 DOI: 10.2814/3685063; https://euipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/documents/reports/2024_online_copyright_infringement/2024_online_copyright_infringement_in_the_EU_FullR_en.pdf

³ Online copyright infringement in the European Union – films, music, publications, software and TV (2017-2023).

⁴ Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services and amending Directive 2000/31/EC (Digital Services Act)

⁵ Samantha Bradshaw, Philip N. Howard. University of Oxford the Global Disinformation Order 2019 Global Inventory of Organised Social Media Manipulation.

⁶ Direktive 2000/31/EC, “On Some legal aspects of Information Society services, especially on electronic commerce in domestic market (Directives on Electronic Commerce)”, CELEX 32000L0031

or internet access providers – are not directly liable for content uploaded by users, as long as they are not clearly aware of its illegality or act promptly to remove or block it once informed. This principle was codified in the E-Commerce Directive (2000/31/EC), which granted a special legal status to these providers, aiming to encourage innovation and internet development by creating a legal “safe harbour.” However, with the growing influence of major platforms and their transformation into central actors in information distribution, this limited liability regime has come under intense debate. Critics argue that, although platforms economically benefit from the distribution of problematic content – such as disinformation, hate speech, or copyright infringements – they often avoid full accountability.¹ The principle of “limited liability” established by the E-Commerce Directive is now being questioned, as online platforms can no longer be considered merely “neutral and passive” intermediaries. Moreover, some online platforms have become very large and powerful, employing artificial intelligence to prevent and remove illegal content. An obligation to make efforts to identify illegal content within these platforms should no longer be seen as taboo. For this reason, new regulations such as the Digital Services Act (2022) aim to maintain the principle of limited liability, while imposing additional clear obligations regarding transparency, content moderation, and systemic risk management.

EFFORTS TO REGULATE THE ONLINE MARKET

Directive 2018/1808 (EU), which amended the AVMS Directive 2010/13, and the new Copyright Directive introduced provisions seeking to level the rules and regulate online service providers. Specifically, Articles 28a and 28b of the AVMS Directive² establish obligations for “video-sharing platform services (VSPs)” aimed at protecting minors and combating hate speech, while Article 17 of the Copyright Directive requires that providers of online content-sharing services obtain authorization from rights holders for content uploaded to their websites.³

Both of these directives represent an attempt to “regulate” the online system, but the legal framework remained limited and weak, highlighting the need for comprehensive, binding, and harmonized standards. Specifically, the main changes in the AVMS Directive related particularly to⁴:

- The scope of services covered by the AVMS Directive;
- The establishment of obligations for video-sharing platform providers;
- The review of obligations for on-demand service providers (VOD);

¹ European Commission, Impact Assessment for the Digital Services Act, SWD(2020) 348 final.

² European Parliament and Council. (2018). *Directive (EU) 2018/1808* amending Directive 2010/13/EU as regards the provision of audiovisual media services. Official Journal of the European Union, <https://eur-lex.europa.eu/eli/dir/2018/1808/oj>

³ Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC <https://eur-lex.europa.eu/eli/dir/2019/790/oj/eng>

⁴ European Parliament and Council. (2018). *Directive (EU) 2018/1808* amending Directive 2010/13/EU as regards the provision of audiovisual media services. Official Journal of the European Union, <https://eur-lex.europa.eu/eli/dir/2018/1808/oj>

- The revision of rules for audiovisual broadcasters.

Video-sharing platforms occupy a significant space in the new Directive 2018/1808 (EU). For the first time, this directive defines the operation of a video-sharing platform, which is a service whose main purpose, or essential function, is to provide programs, user-generated videos, or both, to the general public, for which the video-sharing platform provider has no editorial responsibility, in order to inform, entertain, or educate through electronic communications networks.¹

The AVMS Directive lists various tools that video-sharing platform providers must use to meet these requirements, including clauses embedded in the terms and conditions of service, age verification, parental controls, and allowing users to declare commercial content in the videos they post. Member States may adopt stricter requirements for video-sharing platform providers. Member States shall ensure that video-sharing platform providers under their jurisdiction take appropriate measures to protect:

(a) minors from programs, user-generated videos, and audiovisual commercial communications that may harm their physical, mental, or moral development;

(b) the general public from programs, user-generated videos, and audiovisual commercial communications that incite violence or hatred against a group of persons or a member of a group;

(c) the general public from programs, user-generated videos, and audiovisual commercial communications whose dissemination constitutes a criminal offense under European Union law, specifically, public incitement to commit terrorist offenses, child pornography offenses, and offenses related to racism and xenophobia.

Video-sharing platform providers are also subject to the obligation, similar to MSPs, to promote self-regulation through European Union codes of conduct drafted by media service providers, video-sharing platform service providers, or their representative organizations, in cooperation, if necessary, with other sectors such as industry, trade, associations, professional organizations, and consumer groups.

The AVMS and Copyright Directives covered only a minimal portion of online platform activities. These legal acts did not include other economic activities, service provision, or disinformation, which became particularly concerning during the COVID-19 pandemic and civil conflicts.

In April 2024, the European Commission adopted the European Media Freedom Act (EMFA), aiming to strengthen editorial freedom and media independence in the EU, helping media outlets operate more freely and remain unaffected by political or economic pressures. This act is more comprehensive than the 2018 directive as it also covers online media/portals, which often did not fully fall under the AVMSD framework.²

Regarding online platforms, EMFA establishes specific provisions on protecting online media content from very large online platforms (VLOPs). EMFA obliges platforms

¹ Ibid.

² Regulation (EU) 2024/1083 of the European Parliament and of the Council of 11 April 2024 establishing a common framework for media services in the internal market and amending Directive 2010/13/EU (European Media Freedom Act) [https://www.mediafreedomact.com/Media_Freedom_Act_Articles_\(Regulation_EU_2024_1083_of_11_April_2024\).html](https://www.mediafreedomact.com/Media_Freedom_Act_Articles_(Regulation_EU_2024_1083_of_11_April_2024).html)

(e.g., Meta, Google, TikTok) that deal with content published by media registered as portals to:¹

- have a specific functionality allowing the portal to self-declare as media (with transparency regarding ownership and compliance with editorial standards);
- notify the portal in advance, with clear reasoning, in cases of content blocking or removal, granting the right to appeal;
- ensure that media content is not treated arbitrarily by the platform's algorithms.

Thus, EMFA extends the protection of media freedom to online portals, safeguarding them from censorship by major platforms, imposing transparency on ownership, guaranteeing equal access to funding, and encouraging professional self-regulation.²

The European Media Freedom Act is a more recent framework that goes beyond AVMSD, ensuring editorial independence, transparency of media ownership, and the distribution of public funds. EMFA requires that media outlets and platforms develop self-regulatory mechanisms to comply with professional and ethical standards, protect against political or economic pressures, ensure journalist safety, and guarantee transparency in the allocation of state advertising by authorities and public entities to media service providers and online platforms.³

Thus, both the 2018/1808 Directive and EMFA share a common principle: the state does not leave everything solely to the law but encourages self-regulation or co-regulation mechanisms to maintain a balance between freedom of expression, public protection, and market functioning. Articles 4a and 6 of the AVMSD clearly refer to self- and co-regulatory instruments as practical tools, leaving room for the industry to undertake responsibilities that the state cannot fully detail. Similarly, EMFA requires media outlets and online platforms to develop self-regulatory mechanisms to ensure compliance with professional and ethical standards, protection from political or economic pressures, and journalist safety. This new legal framework encourages codes of self-regulation for algorithm transparency and the distribution of online media content.

Self-regulatory codes are useful for involving digital services in the regulatory process, but they are not sufficient to ensure full compliance with legal obligations. Therefore, self-regulation should evolve into co-regulation, which allows public authorities to monitor compliance and sanction violations. Self-regulation should be encouraged, but where it is not sufficient to meet public-interest objectives, co-regulation – combining industry initiative with public oversight – is appropriate.⁴

¹ [https://www.media-freedomact.com/Media_Freedom_Act_Article_18_\(Regulation_EU_2024_1083_of_11_April_2024\).html](https://www.media-freedomact.com/Media_Freedom_Act_Article_18_(Regulation_EU_2024_1083_of_11_April_2024).html)

² <https://www.media-freedom-act.com/>

³ <https://digital-strategy.ec.europa.eu/en/policies/media-freed>

⁴ European Commission (2002). Communication from the Commission on European Governance – Better Regulation for Better Results: COM(2002) 278 final

<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2002:0278:FIN:en:PDF>

European Media Freedom Act (Regulation (EU) 2024/1060), Articles 18–19

Regulation (EU) 2022/2065 of the European Parliament and of the Council on a Single Market for Digital Services (Digital Services Act)

DIGITAL SERVICES: CLASSIFICATION, LIABILITY, AND OBLIGATIONS OF DIGITAL INTERMEDIARIES

After negotiations between the European Parliament, the Council, and the Commission, the Digital Services Act (DSA – Regulation (EU) 2022/2065) was adopted and entered into force on 16 November 2022. Practical implementation began in 2024, with specific rules for VLOPs and VLOSEs (Very Large Online Platforms and Very Large Online Search Engines). The DSA does not regulate only social media platforms or online marketplaces, but all digital intermediaries (ISPs, hosting providers, search engines, marketplaces, social networks, etc.).

The DSA is the EU’s effort to create a modern, comprehensive, and binding framework for the digital environment. It establishes general principles and obligations that apply to all digital actors in the EU and ensures legal coherence among Member States.

This legal act introduces a “horizontal” regulatory framework, applicable across the EU, for all categories of content, products, services, and illegal activities transmitted through online intermediary services. It complements sector-specific regulation of audiovisual content of media services, copyright law, telecommunications, and postal services.¹

Within the framework of European law, the term “digital intermediary” refers to services that act as a bridge between users and content, facilitating the transmission, storage, or distribution of information online.² These services are essential for the functioning of the digital market and constitute a distinct legal category that enjoys a limited liability regime, initially established by the e-Commerce Directive (2000/31/EC) and later reinforced by the Digital Services Act (Regulation (EU) 2022/2065).

The Digital Services Act classifies intermediaries services into:

- Transmission services (mere conduit) – e.g., internet access providers;
- Caching services – services that temporarily store data to improve transmission;
- Hosting services – services that store user-generated content, including platforms and online marketplaces.³

This act aims to ensure that digital service providers operate responsibly, transparently, and in compliance with users’ rights in the digital space.

Simple transmission services are limited to providing technical access through a communications network without exercising control over the content transmitted. This category includes internet access providers and network operators, who are not liable for the content passing through their systems as long as they do not intervene.⁴

Temporary storage services (caching), on the other hand, involve the automatic and short-term storage of data to optimize transmission and improve network performance. These providers are also exempt from liability if they act neutrally and remove illegal content once they are notified.⁵

¹ Regulation (EU) 2022/2065, Article 1(1); Regulation (EU) 2022/2065, Recitals 9–10) https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=oj:JOL_2022_277_R_TOC

² Directive 2000/31/EC, Articles 12–14, OJ L 178, 17.07.2000, p. 1–16.

³ Regulation (EU) 2022/2065, Article 3(g).

⁴ Regulation (EU) 2000/31/EC Article 12; Regulation (EU) 2022/2065, Article 4.

⁵ Regulation (EU) 2000/31/EC Article 5; Regulation (EU) 2022/2065, Article 5.

The broadest and legally most sensitive category is hosting services, which store content created or uploaded by users at their request. This group includes social media platforms, online marketplaces, and content-sharing platforms. These entities are not liable for illegal content without prior knowledge but have an obligation to remove or block it immediately once notified.¹

The Digital Services Act (DSA) further extends this classification by distinguishing online platforms as a subcategory of hosting services that facilitate interaction between users (e.g., through selling, sharing content, or providing services). Furthermore, the DSA recognizes a special category for Very Large Online Platforms (VLOPs) and Very Large Online Search Engines (VLOSEs), which have over 45 million active users in the EU and are subject to additional obligations regarding transparency, risk assessment, and public oversight.²

This regulatory development reflects the need for a more sophisticated approach to digital intermediaries, maintaining the fundamental principle of “limited liability,” while simultaneously requiring them to act responsibly, transparently, and with care regarding harmful or illegal content in the online environment.³

In the European Union legal system, the role of digital intermediaries is closely linked to the principle of limited liability, a concept designed to protect innovation and freedom of information in the online environment. This approach was initially institutionalized through the E-Commerce Directive,⁴ which laid the foundations for a delicate balance between the freedom to provide information society services and the need to protect against illegal content.

Under this directive, intermediaries cannot be held liable for content they transmit, store, or host, as long as they do not have actual knowledge of its illegality and act promptly to remove it once notified.⁵ This “conditional immunity” regime was designed to avoid imposing a general monitoring obligation on platforms – a requirement that would directly threaten freedom of expression and privacy.⁶

However, the development of large platforms and their influence on the digital public sphere created new challenges. In practice, many platforms became involved in active mediation processes – through algorithms for content selection, recommendation, and promotion – making the boundary between technical neutrality and editorial control increasingly

¹ Regulation (EU) 2000/31/EC Article 6; Regulation (EU) 2022/2065, Article 6.

² Regulation (EU) 2022/2065, Article 33–42.

³ European Commission (2020). *Proposal for a Regulation on a Single Market for Digital Services (Digital Services Act)*, COM(2020) 825 final.

Sartor, G. (2022). *The Digital Services Act: A New Framework for Online Intermediaries*. *Computer Law Review International*, 23(4), 97–105.

⁴ Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ('Directive on electronic commerce') <https://eur-lex.europa.eu/eli/dir/2000/31/oj/eng>

⁵ Directive 2000/31/EC of the European Parliament and of the Council article 12–15).

⁶ Helberger, N., Kleinen-von Königslöw, K., & D'Acunto, L. (2021). *Regulating the new information intermediaries as gatekeepers of information diversity*. *Digital Journalism*, 9(5), 660–679.

blurred.¹ Consequently, the Digital Services Act aims to modernize this system by maintaining the principle of limited liability while adding a new regime of positive obligations for transparency, reporting, and risk management.

In particular, Article 16 of the DSA requires hosting service providers to establish clear “notice and action” mechanisms, allowing users or authorities to report illegal content. Furthermore, online platforms must communicate the reasons for any decision that restricts a user’s content and ensure the possibility of appeal.² For Very Large Online Platforms (VLOPs), the DSA imposes special obligations regarding systemic risk assessment, including impacts on freedom of expression, democratic processes, and the protection of fundamental rights.³

Thus, the legal responsibility of digital intermediaries in the new European framework no longer means mere “immunity,” but an active responsibility aimed at ensuring a safe and transparent online environment without undermining freedom of expression. In this sense, the DSA marks a conceptual evolution from technical neutrality toward the social and institutional responsibility of digital platforms, considering content moderation not as interference but as part of the obligations for good governance of the digital space.⁴

This new legal model positions the European Union at the forefront of international efforts to build a sustainable balance between technological autonomy, freedom of communication, and the protection of public order and individual fundamental rights in the digital sphere.

The obligations for the intermediaries services are summarized in table form below:

Table of obligations	Interme-di-ary services	Hosting services	Online Very large platforms
Transparency reporting	●	●	● ●
Requirements on terms of service due account of fundamental rights	●	●	● ●
Cooperation with national authorities following orders	●	●	● ●
Points of contact and, where necessary, legal representative	●	●	● ●
Notice and action and obligation to provide information to users		●	● ●
Complaint and redress mechanism and out of court dispute settlement			● ●
Trusted flaggers			● ●

¹ Sartor, G. (2022). *The Digital Services Act: A New Framework for Online Intermediaries*. *Computer Law Review International*, 23(4), 97–105

² Regulation (EU) 2022/2065, Article 16

³ Regulation (EU) 2022/2065, Article 34

⁴ Helberger, N., Pierson, J., & Poell, T. (2018). *Governing Online Platforms: From Contested to Cooperative Responsibility*. *The Information Society*, 34(1), 1–14

Measures against abusive notices and counter-notices			• •
Vetting credentials of third party suppliers ("KYBC")			• •
User-facing transparency of online advertising			• •
Reporting criminal offences			• •
Risk management obligations and compliance officer			•
External risk auditing and public accountability			•
Transparency of recommender systems and user choice for access to information			•
Data sharing with authorities and researchers			•
Codes of conduct			•
Crisis response cooperation			•

DSA GOVERNANCE, COMPETENCE OF ENFORCEMENT IN MEMBER STATES, AND IMPLEMENTATION IN ALBANIA

According to Article 49 of the DSA, for all digital intermediaries established in a Member State, the competent authority shall be their Digital Services Coordinator. The Digital Services Coordinator will, in every case, be responsible for ensuring national-level coordination and contributing to the effective and sustainable supervision and enforcement of the DSA. Regulation across the entire Union applies, except where the relevant Member State has assigned tasks or specific sectors to other competent authorities.¹ For all VLOPs and VLOSEs, the competent authority is the European Commission.²

In non-EU Member States, the transposition of the DSA must be carried out in cooperation with multiple institutions, each within its field of competence. These competent authorities are Audiovisual Regulators, Electronic Communications Regulators, Competition Authorities, Consumer Protection Bodies, the Ministry of Interior, Data Protection Authorities, Cybersecurity Agencies, and so on. Albania, within the framework of transposition, must also designate a competent authority to act as the National Coordinator for Digital Services, who will be responsible for ensuring coordination of all activities carried out at the national level concerning the implementation of the Regulation. These authorities must have sufficient technical and financial resources to carry out their duties fully independently, free from any external influence, whether direct or indirect, and must not request or receive instructions from any other public authority or private entity.³

In Albania, the authority that manages electronic communications networks and the services provided through them (excluding the content of services offered via electronic communications networks and their supporting services) is the Electronic and Postal

¹ Regulation (EU) 2022/2065, Article 49.

² Regulation (EU) 2022/2065, Article 56.

³ Regulation (EU) 2022/2065, Article 38.

Communications Authority.¹ The Audiovisual Media Authority is the regulatory authority in the field of audio and audiovisual broadcasting services and other supporting services within the territory of the Republic of Albania, which oversees linear audiovisual transmissions, non-linear audiovisual transmissions, and their supporting services, as well as video-sharing platform services.²

With Law no. 30/2023, dated 13.4.2023, the Council of Ministers approved certain amendments and additions to Law no. 97/2013, “On Audiovisual Media in the Republic of Albania,” amendments that were part of the alignment with Directive (EU) 2018/1808.³ Law no. 30/2023, “On certain amendments and additions to Law no. 97/2013 “On Audiovisual Media in the Republic of Albania,” as amended⁴ constitute an important step in aligning Albanian legislation with the European Union *acquis communautaire*, in particular with Directive (EU) 2018/1808, which revised Directive 2010/13/EU on audiovisual media services.

The main changes in Directive (EU) 2018/1808 specifically concern the scope of services covered by the AVMS Directive; the imposition of obligations on video-sharing platform providers; the revision of obligations for on-demand service providers (VOD); and the revision of rules for audiovisual broadcasters.

From an institutional perspective, Law 97/2013, now partially aligned with Directive (EU) 2018/1808, grants the Audiovisual Media Authority (AMA)⁵ competencies in the field of media regulation, including, for the first time, video-sharing platform services, in addition to traditional audiovisual media providers. The key changes include the introduction of new legal concepts such as “video-sharing platform provider,” “user-generated video,” and “media literacy,” reflecting the transformation of the media market toward user-generated content and the intermediary functions of online platforms.

Platform providers are required to register with the AMA and take effective measures to protect children, prevent content that incites hatred, violence, pornography, or terrorism, and comply with principles of self-regulation and co-regulation through codes of ethical conduct.⁶

In implementation of these changes, the Audiovisual Media Authority, by Decision no. 128 dated 23.12.2024, approved the regulation “On the specific requirements that video-sharing platform providers must meet for the creation and operation of transparent,

¹ <https://akep.al/wp-content/uploads/2024/10/ligj-2024-05-30-54.pdf>

² <https://ama.gov.al/wp-content/uploads/2020/07/Ligj-nr.97-2013-P%C3%ABr-Mediat-Audiovive-n%C3%AB-Republik%C3%ABn-e-Shqip%C3%ABris%C3%AB.pdf>

³ Law nr. 30/2023, “On some amendments and additions to Law No. 97/2013 ‘On Audiovisual Media in the Republic of Albania’ <https://www.kryeministria.al/newsroom/projektligje-te-miratutara-ne-mbledhjen-e-keshillit-te-ministrave-date-1-mars->

⁴ Law No. 97/2013 ‘On Audiovisual Media in the Republic of Albania’; <https://ama.gov.al/wp-content/uploads/2020/07/Ligj-nr.97-2013-P%C3%ABr-Mediat-Audiovive-n%C3%AB-Republik%C3%ABn-e-Shqip%C3%ABris%C3%AB.pdf>

⁵ <https://ama.gov.al/>

⁶ Law No. 97/2013 ‘On Audiovisual Media in the Republic of Albania.

effective, and user-friendly systems.”¹ The regulation is partially aligned with Directive 2010/13/EU “Audiovisual Media Services Directive” (AVMSD), as amended by Directive 2018/1808 of the European Parliament and Council. This regulation aims to set out the general principles and specific requirements that video-sharing platform providers must meet to create and operate transparent, effective, and user-friendly systems. It also regulates the general conditions for providing audiovisual content by users on video-sharing platforms and does not affect ancillary audiovisual broadcasting services, with the primary purpose of offering informational, entertainment, or educational programs.²

According to this regulation, a video-sharing platform provider is a natural or legal person who offers the video-sharing platform service, and in this way, the AMA creates and updates the list of video-sharing platform providers under the jurisdiction of the Republic of Albania.

Another step in the further development of the specific legislative framework is the adoption of Law no. 47/2025 “On the Approval of the National Strategy Against Foreign Interference and Disinformation 2025-2030.” According to this strategy, among other things, Albania, recognizing and valuing as an already undertaken commitment the financial transparency and ownership relationships of audiovisual media, in reference to the recommendations provided in the European Commission Progress Reports, will ensure the same financial transparency and ownership relations for online media operating within the Albanian territory. This commitment will be implemented in line with the freedom of expression standards of the Council of Europe and the European Union standards, according to EMFA, DSA, and DMA.³

Another commitment is to increase transparency and create mechanisms for monitoring political financing. According to this strategy, Albania will regulate social networks and political advertisements by adopting rules that require full transparency for political ads, including the disclosure of sponsors and funding sources. A national digital platform will be created to monitor online content, in cooperation with international social networks. Measures will be implemented to combat disinformation and manipulative content during electoral campaigns, and special platforms will be developed for monitoring political advertisements. Cooperation with international platforms will also be strengthened to identify and block such content.⁴

Cooperation with very large online platforms has been a way for AMA to supervise and prioritize monitoring of potentially harmful content in the Albanian language distributed on these platforms. In August 2024, the Audiovisual Media Authority established cooperation with the Tik-Tok platform, aimed at preventing the dissemination of harmful

¹ Regulation of the Audiovisual Media Authority ‘On the specific requirements that video distribution platform providers must meet to create and operate transparent, effective and user-friendly systems’

² Ibid.

³ Law No. 47/2025 On the approval of the national strategy against foreign interference and disinformation 2025-2030 <https://kuvendiwebfiles.blob.core.windows.net/webfiles/202507170801443359Ligj%20nr.%2047%2C%20dt%203.7.2025.pdf>

⁴ Ibid.

content.¹ This social network is currently non-functional in Albania, following the government's decision to shut it down.² In August 2025, AMA established another cooperation channel with platform X. This cooperation provides for a dedicated channel for AMA on Platform X, through which all harmful content featuring or inciting violence of any kind, hate speech, content violating the rights of children and communities, and fundamental human freedoms and rights will be reported and communicated.³

Additionally, within the framework of cooperation between AMA and AKEP⁴, domains containing illegal or harmful content, for which blocking access by ISPs is requested, are reported. For the year 2024, AMA submitted 37 official cases to AKEP, aiming to take measures to shut down 346 online pages that were in violation of the law.⁵

CONCLUSIONS

The new European legal framework for digital services, as envisaged by the Digital Services Act (DSA), represents a significant step toward the regulation and improvement of online platforms and intermediaries providing information services.

Although this Act does not create a new material liability regime for content circulating on digital platforms, it shifts responsibility into the regulatory sphere, essentially preserving the liability rules inherited from the E-Commerce Directive (2000/31/EC), under which intermediaries are not liable for the content they transmit or store, as long as they do not have actual knowledge of its illegality and act swiftly to remove or block it.

The novelty of the DSA lies not in direct liability but in regulation, prevention, and transparency, introducing new obligations for mechanisms to report illegal content, to report violations, provide access to data for public authorities, and conduct independent audits for very large platforms.

A key element of this framework is the protection of freedom of expression. Another fundamental aspect of the Act is that content removal or restriction must be carried out in a reasonable, proportionate, and transparent manner, avoiding arbitrary censorship and ensuring users' rights to be notified and to appeal platform decisions. This seeks to balance protection from illegal content with respect for citizens' fundamental rights in the digital space. This could be further enhanced by focusing on advanced technology and automated tools to directly moderate and detect illegal content.

The transposition of regulations in the field of media and electronic communications, in line with EU standards in non-EU countries, requires a profound transformation of the audiovisual market and its legal framework, and is a delicate and challenging process. In the Albanian context, concrete steps have been taken to align the legal framework with the

¹ <https://ama.gov.al/ama-bashkepunim-me-tiktok-krasniqi-raportoni-permbajtjet-e-demshme/>

² Decision No. 151, dated March 6, 2025, "On taking temporary measures to avoid the negative impacts of the online platform 'TIKTOK'".

³ <https://ama.gov.al/ama-bashkepunim-me-platformen-x-krasniqi-nje-mjedis-i-paster-digjital-eshte-prioriteti-ynje/>

⁴ <https://ama.gov.al/wp-content/uploads/2021/06/AMA-AKEP.pdf>

⁵ <https://ama.gov.al/wp-content/uploads/Raport-AMA-2024-1.pdf>; <https://akep.al/wp-content/uploads/2025/09/Lista-e-domaineve-url-per-blokim-aksesi-perditesuar.pdf>

EU acquis; however, effective implementation of the DSA principles remains a challenge due to the need for specialized institutional capacities, inter-institutional coordination, and clear procedural rules for handling digital content and protecting users' rights. The role of institutions enforcing these rules becomes essential, and their capacity to cooperate must be improved.

In conclusion, the DSA is a regulatory act that primarily strengthens behavioral standards, oversight mechanisms, and the protection of freedom of expression online rather than being a civil or criminal liability instrument. It shifts the focus from ex-post liability toward proactive risk prevention and management, reflecting a more contemporary, fair, and sustainable approach to the governance of the digital space. The goal is a safer, more accountable, and more transparent online environment – a model that requires continuous commitment even from countries in the integration process, such as Albania.

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A COMPARATIVE STUDY OF CLAIMS PAID IN NON-LIFE INSURANCE IN ALBANIA

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Abstract

One of the reasons for purchasing insurance is financial compensation after an insured event occurs. A claim is both a right of the insured and an obligation for the insurance company. In the absence of compensation claims, the need for insurance would lose its meaning. Non-life insurance policies cover risks such as motor, fire, property, marine risks, etc, which form the classes of non-life insurance. This study analyzes trends in gross written premiums, gross claims paid by eight companies, and the claims ratio for non-life insurance lines from 2019 – 2023. Interpreting these trends helps us understand the behavior of specific insurance lines and identify which are most exposed to risk in the Albanian market. Decision-making in the insurance sector, including setting or revising rates, comparing insurance lines, and evaluating company performance, highlights the importance of analyzing the claims ratio.

Keywords: Claims ratio, Non-life insurance, Risks, Gross written premium

JEL: G22

INTRODUCTION

Insurance is a form of rationality capable of transforming the lives of individuals and a population (Ewald, 1991) but does not prevent losses, nor does it reduce the cost of losses to the economy as a whole. The largest segment of the insurance industry is generally the non-life sector, accounting on average for the largest share of premiums written (OECD, 2024). Non-life insurance includes all types of insurance that are not related to the life of an individual, such as property, health, auto, and liability insurance. This form of insurance

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is of major importance because it helps individuals and business entities mitigate the financial consequences of unforeseen events, such as accidents, theft, or natural disasters (Lamcja Methasani, 2025). Under a title insurance policy, the insurer agrees to indemnify the insured to the extent of any financial loss suffered as a result of the transfer of a defective title (Vaughan & Vaughan, 2014). In the paper of (Liedtke, 2007), insurance is defined as a social or economic mechanism that provides financial compensation against the consequences of unforeseen events, where payments are made from common funds collected through the contributions of participants in the scheme. The concrete product of insurance is financial compensation, and one of the insurer's main duties is to pay the legitimate claims of beneficiaries (Agbo, Okeke, & Okeume, 2022). Opoku et al. (2024) reported that in line with International Best Practices, claims ratios below 40 % are considered low, between 40 % and 60 % are considered moderate, and claims ratio above 60 % is considered high. According to the OECD, gross insurance premiums are the total premiums written in a country, before deduction of commissions or external reinsurance and excluding taxes or other fees. Gross written premiums do not accurately represent actual revenue because they do not take into account expenses, although they are a good indicator of growth and sales. Including all potential premium income does not provide an accurate accounting of what a company has actually earned, but it can indicate asset strength for a company. Gross premiums written are used as a category to assess market share and to assess the market position of an insurance company (Lament & Bukowski, 2024). The purpose of this study is to analyze the trend of gross written premiums and paid claims in Albania, focusing respectively on each insurance company for the years 2017-2023 and the gross claims ratio for each of the non-life insurance lines in Albania during the years 2019-2023.

Focusing on trend analysis and annual comparison, our research question for this case would be:

- How has the trend in gross written premiums and claims paid by insurance companies in Albania evolved during the period 2017–2023?
- Which insurance lines have the highest risk, and how has it changed over time?

As a limitation, the study only covered non-life insurance companies within the insurance industry and Albania as a country for a specific period of time.

REVIEW OF LITERATURE

In the report of (OECD, 2024), non-life GWP increased significantly in the recent period, as well as claims payments (due to inflation and catastrophic events), but in many markets premiums increased faster, temporarily improving underwriting results. These regional trends were also reflected in the report (IAIS, 2024), where some regions experienced worsening loss ratios due to catastrophic events and reinsurance costs, while some markets saw improvement due to increased rates. The market in Albania remains oriented towards non-life insurance which dominates the market both in terms of the number of contracts and the volume of premiums, suggesting a higher consumer preference or necessity for non-life insurance products in the Albanian market. In 2023, gross claims paid in the insurance market totaled 6,959 million lek, an increase of 1.89% compared to 2022.

This increase shows a positive trend in the insurance sector, although the growth is moderate (Lamçja Methasani, 2025). In the study conducted by (Hodula et al., 2020), macrofinancial factors were analyzed as determinants of life and non-life insurance premiums using a database for 24 European countries. They showed that the insurance sector moves with the business cycle, and the price channel is significant only for non-life insurance. The COVID-19 pandemic significantly disrupted the trend in 2020, followed by a strong increase in insurance activity. Data from the last 12–18 months signal a significant deterioration from historical trends, mostly reflected in the dynamics of the claims series (Peovski & Ivanovski, 2023).

DATA AND METHODOLOGY

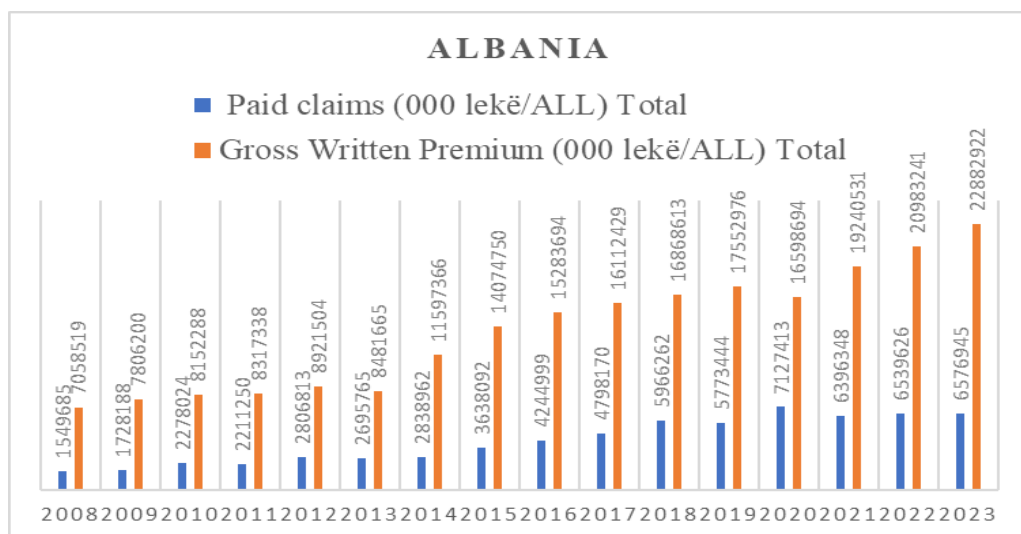
In this paper, we conduct a trend analysis by company for gross written premiums (GWP), which indicates the size of the market and competitive strength, and gross claims paid (Claims Paid), which means the financial burden each company bears. Following the paper, we have analyzed the gross claims ratio (GCR) by line in non-life insurance, which indicates the efficiency and risk by product. The study is based on secondary data. The data is taken from the website of the Financial Supervisory Authority AFSA. The insurance companies selected for the study are the 8 non-life insurance companies in Albania.

ANALYSIS OF GROSS WRITTEN PREMIUM AND PAID CLAIMS IN ALBANIA

Regarding the size of the insurance market, we can identify 3 phases of evolution (Figure 1).

Phase I: In the years 2008–2013, we see the period of initial expansion where GWP increased from 7.1 to 8.5 billion lek. The claims paid also increased, but at a slower pace. Phase II: In the years 2014–2019, we observed a rapid growth and consolidation of the insurance market. This is the most dynamic period of growth, with premiums increasing from 11.6 billion to 17.6 billion lekë, which may have resulted from improved insurance coverage, the introduction of new products, or even increased public awareness in this sector. We also had a significant increase in claims paid (from 2.8 to 5.8 billion lekë), reflecting higher market activity and higher risk exposure.

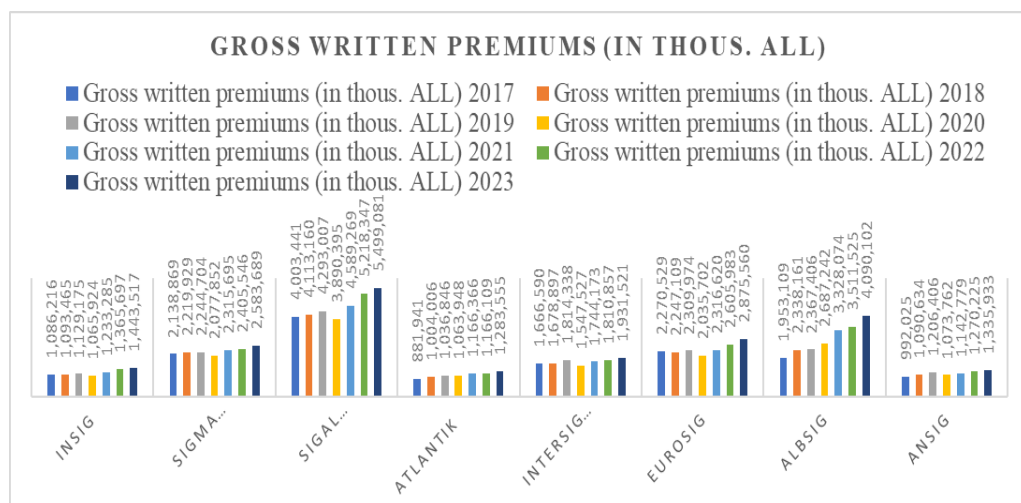
In phase III, we have the impact of the pandemic and the period after 2020. In 2020, a decrease in gross premiums (from 17.55 to 16.60 billion lek) was observed due to the COVID-19 pandemic, movement restrictions, and a reduction in economic activity. Meanwhile, the impact of the pandemic caused claims paid to increase. The Insurance Market in Albania resumed sustainable growth after 2021, quickly returning to the growth trajectory.



Source: Processed data from AMF

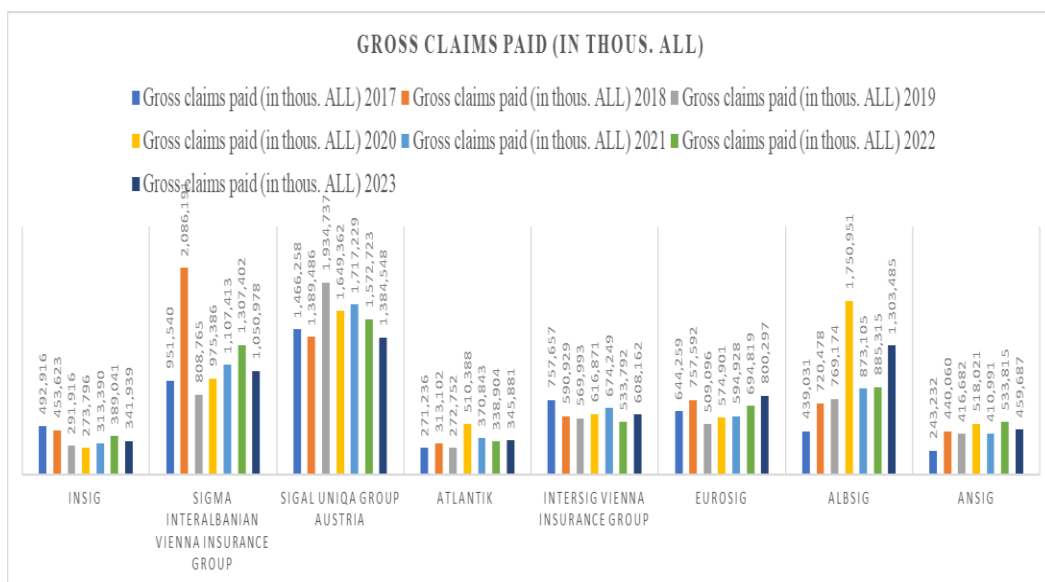
Fig. 1. Paid Claims and Gross Written Premiums in Albania, 2008–2023

In the continuation of the paper, we have conducted a trend analysis of the Gross Written Premium and Gross Paid Claims indicators during the years 2017-2023 for eight insurance companies in Albania, as follows:



Source: Processed data from AMF

Fig. 2. Gross Written Premiums in non-life insurance companies, 2017–2023



Source: Processed data from AMF

Fig. 3. Gross Claims Paid in non-life insurance companies, 2017–2023

Insig company has an increase in written premiums, which in 2017 was 1086216 thousand while in 2023 was 1443517 thousand, while claims paid have decreased significantly from 492916 thousand in 2017 to 341,939 thousand in 2023. In this company, we seem to have good risk control because we notice that written premiums have increased, while claims payments have decreased. For Sigma Inter-Albanian, GWP has increased from 2138869 thousand in 2017 to 2583689 thousand in 2023. While Claims Paid reached a peak in 2018 (2,086 thousand), it then gradually decreased to 1,051 thousand (2023). In this company, we have greater stability as we see an increase in premiums and a decrease in claims. In Sigal Uniqa Group Austria, premiums have grown faster than claims. The claims paid indicator fluctuates from 1,466,258 in 2017 to 1,384,548 in 2023. We see a stronger increase for GWP (2017: 4,003,441 → 2023: 5,499,081). The Sigal Uniqa Group Austria company appears to be more financially solid.

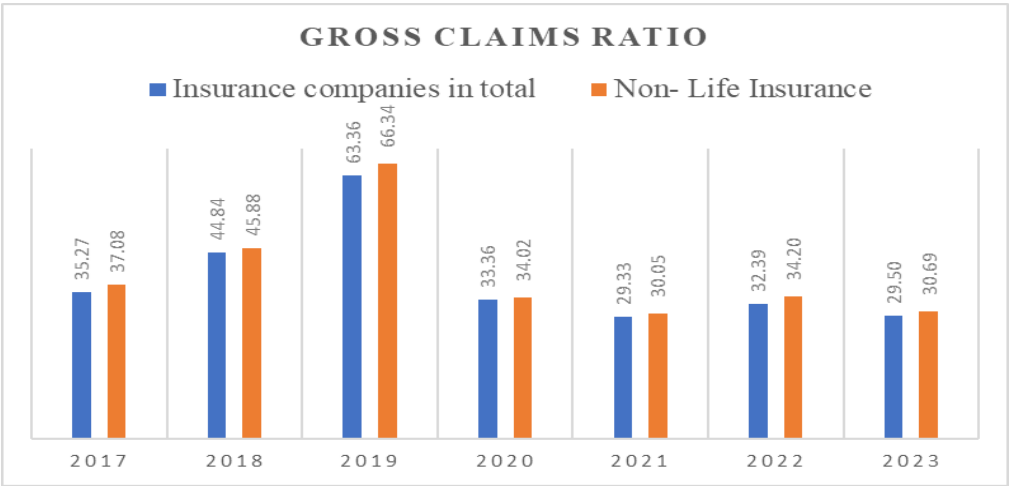
For the company Atlantik, slow movements are seen in the claims paid and GWP indicators. At Intersig, while premiums increase over the years, we see that claim payments are relatively stable. At Eurosig, we see a parallel increase in both GWP and Claims Paid indicators. Specifically, we have a significant increase in GWP from 2,271 thousand (2017) → 2,876 thousand (2023).

At the same time, Claims Paid increased from 644 thousand (2017) → 800 thousand (2023). At Albsig, we see that GWPs are growing rapidly (1,953 thousand → 4,090 thousand), but despite the increase in premiums, we see that the company has exposure to extraordinary events because Claims Paid are very volatile (439 thousand in 2017 → 1,751 thousand in 2020 → 1,303 thousand in 2023). The insurance company Ansig there is

exposure to risk because premiums have increased at a slow pace (992 thousand → 1,336 thousand) while claims paid fluctuate: from 243 thousand (2017) to 518 thousand (2020), and to 460 thousand (2023).

GROSS CLAIMS RATIO ANALYSIS

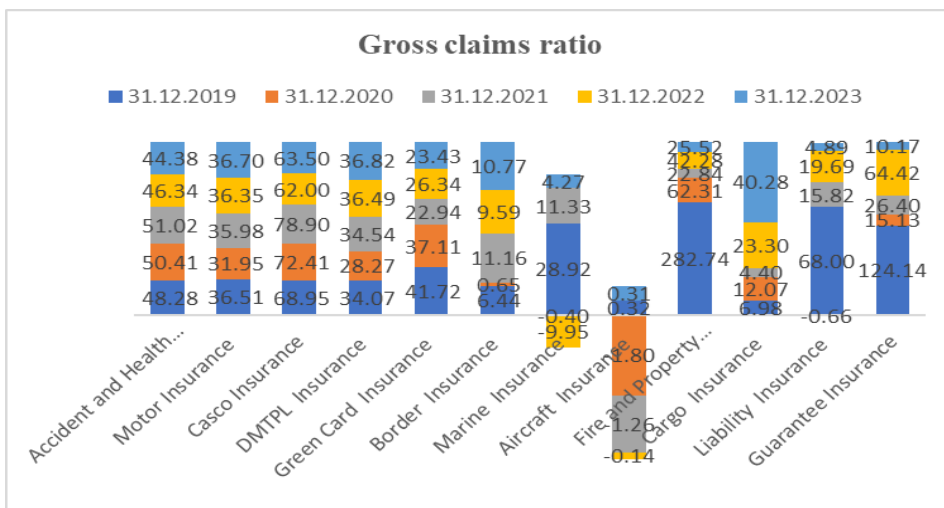
Non-Life typically has a slightly higher GCR than total, reflecting that non-life insurance lines often have greater risk or higher claim flows. With 63.36% in total and 66.34% in non-life insurance, 2019 represents the peak of the GCR, the highest level of the ratio. After 2019, the GCR has stabilized at around 30–34%. From the data, we note that the GCR for Non-Life follows the total trend very closely, usually slightly higher.



Source: Processed data from AMF

Fig. 4. Gross claims ratio (total and non-life), 2017–2023

According to the International Association of Insurance Supervisors (2019), the gross claims ratio is measured as the ratio of gross incurred claims to gross earned premium. Because of the values that can be reported on the type of business written by the insurance, it must be calculated separately for the class of business. In this section, we will analyze the Gross claims ratio for each of the non-life insurance lines in Albania during the years 2019–2023.



Source: Processed data from AMF

Fig. 5. Gross claims ratio for each non-life insurance line, 2019–2023

For the Accident and Health Insurance line, a stable trend is observed with a slight increase until 2021, then a gradual decrease is observed, thus indicating control over the risk. The Motor Insurance line has small fluctuations over the years, without major deviations, with an approach to stability. In the Casco Insurance line, a higher risk is observed due to the higher and more volatile GCR. In DMTPL Insurance (Mandatory Motor Insurance), we have Stability with an upward trend after 2020, while for Green Card Insurance, a strong decline is observed (41.72 → 23.43), so risk is on the decline. Many fluctuations (6.44 → 0.65 → 11.16 → 9.59 → 10.77) are observed in Border Insurance, but it remains a line with low impact. The Marine Insurance line is also very unstable, with some negative values in some years. Negative values are also observed in Aircraft Insurance, showing instability, but the volume of this line is very small and does not have a major impact. The earthquake of November 26, 2019, in Albania affected thousands of homes, public and private buildings, as well as businesses, causing significant material damage. The very high value of the Gross Claims Ratio for Fire and Property Insurance in 2019 (282.74) indicates that insurance companies had a large influx of claims, especially in the property insurance line, to the extent that claims paid significantly exceeded premiums written, producing this extreme level of GCR, which then drops sharply (22.84 in 2021, 25.52 in 2023).

In the Cargo Insurance line, an increase in risk is observed, especially after 2021. Instability is observed in the Liability Insurance line; GCR values have many fluctuations. Guarantee Insurance is another line with very volatile GCR values, where the profit appears clearly unstable. Finally, we can identify lines by risk by grouping them into high-risk lines (high GCR or very volatile), including Fire and Property (very high in 2019, although decreasing), Casco Insurance (stays above 60–79%), Guarantee Insurance (extreme volatility), Marine & Aircraft Insurance (negative or very volatile) and Cargo Insurance (strong increase in risk). In the group of medium risk lines, we place Liability Insurance

(fluctuating, often low but not stable), Green Card (decreasing, but with historical exposure), and Border Insurance (variations, but at a low level). Finally, we also have relatively profitable and stable lines, which include Accident and Health Insurance (stable, decreasing trend), Motor Insurance (stability around 36%), and DMTPL Insurance (remains manageable around 30–37%).

CONCLUSION

The size of the insurance market in Albania has grown significantly, reflecting economic development, increased public confidence, etc. The market leader is Sigal Uniq, followed by Albsig and Eurosig. Albsig has the most dynamic growth from 2019–2023. Insig, Atlantik, and Ansig have slower growth, but are stable.

The market in general is strengthening financial stability (premiums have increased much faster than claims) and is managing risk better after 2020. In 2020, the impact of the pandemic caused pressure on insurance companies, while in the following years, we notice that we have a balance between premiums and claims. In the Albanian market, companies are managing to stabilize the main lines (Motor, Health), but the challenge lies in property, warranty, and transport insurance, where the risk remains high. The most stable insurances are motor and health, which dominate the market and provide financial stability. High-risk lines such as Casco, Fire & Property, Guarantee, and Cargo show a strong impact from extraordinary events (major accidents, natural disasters, economic crises). Marine and aviation insurance have low volume and are very volatile, showing high exposure to rare events. Future studies could include expanding the analysis period. A valuable direction would be to compare the Albanian insurance market with other Balkan countries, to identify similarities and differences in GWP and claims trends, including life insurance as well, since in our paper, it is only non-life insurance. The analysis of gross written and paid claims trends helps identify changes and competitive reflections in Albania's non-life insurance sector by providing a clear picture of the quality of the risk portfolio for each insurance line. These results are also important for the Financial Supervisory Authority (AMF) and policymakers, because they help assess the sustainability of the insurance sector, design more effective supervisory policies, and promote market transparency.

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FIRM INTERNATIONALIZATION AND ENTERPRISE SUSTAINABILITY INITIATIVES: EVIDENCE FROM POLAND'S MANUFACTURING SECTOR

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Abstract

Using the most recent survey data of firms located in Poland from the World Bank Enterprise Survey database, this study investigates the relationship between firms' green initiatives, their degree of internationalization, and their firm capabilities. Building on international business theory, organizational learning theory, and the resource-based view of sustainable competitive advantage, it was hypothesized that firms with greater internationalization and internal resource capabilities would take more initiatives to transform their business models towards greener processes. After controlling for various firms' characteristics, the estimated regression analysis results found a strong relationship between highly internationalized firms and greater firm initiatives towards green business practices. Regression analysis results also found firms with higher innovative, financial, and managerial capabilities to be more likely to undertake more significant green initiatives than other firms. However, the study sample's regression results found no significant relationship between firms' green initiatives and their degree of digitalization or market power.

Keywords: Internationalization, Sustainability, Green Business Initiatives, Small and Medium-sized Enterprise, and Firm Capabilities

JEL: M13, M16, M14

INTRODUCTION

The recent decade has witnessed a dramatic shift in the global business environment caused by climate change, global pandemics, supply chain disruptions and unprecedented geopolitical conflicts. These changes are causing business enterprises to struggle and change their global strategies and business processes. Due to these global disruptions and their impact on international business, researchers are calling for empirical research to re-examine the explanatory power of existing theories of management and international business in today's changing global business landscape.

In response to these recent calls, this study utilizes a new (2024) firm-level data set from Poland, part of the World Bank Enterprises Survey data sets, to examine the role of firm internationalization in green business transformation initiatives.

The last decade has seen an increasing rate of extreme weather events, such as forest fires, floods, and hurricanes. This has alarmed the scientific community, policymakers, and businesses worldwide, prompting them to find ways to address environmental sustainability challenges urgently. Business enterprises are facing pressure from stakeholders to align their activities with the need to preserve the environment for future generations. Some firms are increasingly incorporating environmental management processes into their business

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practices as a global citizen, the multinational enterprise is well-positioned to lead in developing sustainable business practices and transferring sustainability best practices across countries. Through its superior financial and innovation capabilities, the multinational enterprise can drive sustainable business practices among its global partners, including small and medium-sized enterprises linked to the MNE's global value chain. Small and medium-sized enterprises that are linked to a multinational enterprise's global value chain are more likely to face greater pressure to conform to higher environmental standards set by the MNE's home countries, which often have stricter requirements.

Although a growing number of researchers are studying the role of green innovation on competitive advantage, very few have examined the role of a firm's internationalization process on the firm's green business transformation processes. As a step towards filling in the above-mentioned gaps in management and international business, this study takes advantage of a new firm-level data set conducted by the World Bank in 2024 on firms located in Poland as part of the World Bank Enterprises Survey data set to examine the relationship between firm internationalization, firm capabilities and firms' green transformation processes. It does so by answering the following research questions. First, does SME internationalization influence its efforts towards green business initiatives? Secondly, is there any relationship between a firm's capabilities and a firm's initiative towards green business transformation processes?

This study contributes to research in international business and sustainability in the following ways. First, it develops a framework based on established theories of internationalization, organizational learning, and the resource-based view of sustainable competitive advantage to explain how firm internationalization influences green business transformation processes. Unlike previous research that measures internationalization as export or foreign ownership, this study develops a comprehensive index of internationalization that includes firm foreign ownership, export intensity, foreign inputs usage, and foreign technology usage. Firm capabilities are distinguished as Production Capability (PC), Innovation Capability (IC), Managerial Capability (MC), Financial Capability (FC), and Digital Capability (DC). This study also takes advantage of a recently conducted survey of manufacturing firms located in Poland to explain firm-level sustainability efforts.

THEORETICAL FRAMEWORK AND HYPOTHESES

In this study, Green Business Transformation Initiatives (GBTI) refer to actions taken by a business enterprise to reduce its environmental impact. These processes may include reducing waste, recycling, managing energy efficiency, reducing pollution, designing eco-friendly solutions, and implementing sustainable supply chain practices. As shown in Figure 1, this study builds on theoretical assumptions from internationalization theories, resource-based view (RBV), institutional theory, and stakeholder theories to develop a framework to explain firm-specific factors influencing green business transformation initiatives in small and medium-sized enterprises.

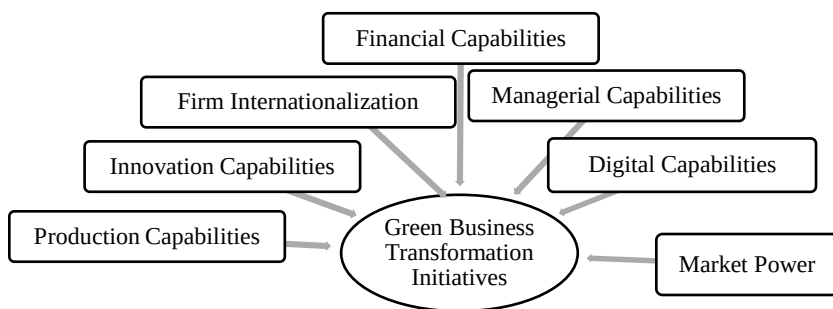
Firm Internationalization and SME Green Business Initiatives

International business theory (Hymer, 1976) suggests that international firms face the liability of foreignness or the liability of outsider-ship, which puts foreign firms at a disadvantage against domestic rivals. On the other hand, from an institutional theory perspective, to overcome such liabilities, foreign firms may seek legitimacy by making extra efforts to become good corporate citizens, going beyond legal requirements. This may involve taking greater initiatives to transform their business practices towards green business practices. From a stakeholder theory perspective (Freeman, 1984), international firms operating across different institutional environments encounter a wide range of regulatory and stakeholder expectations in both the home and host countries. As they seek to meet these regulatory and stakeholder expectations, they are forced to adapt and change. In host countries with higher environmental regulations than those of the home country, international firms are compelled to adapt to meet these stricter standards. The same is also true as international firms expand into markets where other stakeholder expectations on environmental issues are higher. For example, to meet host country consumers, suppliers, investors and competitors, foreign firms operating in such countries will be required to change their products and processes to higher standards. This suggests that as a firm's international linkages expand and intensify, it is more likely to be driven to innovate and improve its business processes and products to meet the higher environmental expectations of a broader and more sophisticated range of regulators and stakeholders.

From an international business and organizational learning perspective, foreign firms operating in host country markets embedded with superior business ecosystems and higher standards of sustainable business practices are more likely to acquire and learn those superior environmental products and processes. This occurs as they increasingly interact with those foreign market knowledge networks. Operating in countries with advanced knowledge in green business practices allows the international firm to tap into capabilities that facilitate its transformation towards green business transformation processes (Mendes Ximenes et al., 2020; Zhu et al., 2023; Boermans & Roelfsema, 2015).

Theoretical assumptions from international business theory, institutional theory, and organizational learning suggest that SMEs with greater international exposure are more likely to adapt, learn, and develop innovative capabilities to transform their business processes towards green initiatives. We therefore suggest that:

Hypothesis 1: The more internationalized an SME is, the more likely it is to take greater initiatives towards green business transformation processes.



Source: Author

Fig. 1. Firm-Specific Factors Influencing SME Green Business Initiative

Firm's Productive Capabilities and Green Business Initiatives

The resource-based view (RBV) theory suggests that firm capabilities are the primary source of a firm's long-term competitive advantage (Barney, Penrose, 1959; Richardson, 1972). Firm capabilities are considered a unique combination of a firm's physical and intangible resources tied to the organization, often distinguished as production capabilities and innovative technological capabilities (Bell and Pavitt, 1993, 1995); Figueiredo, 2008). Production capabilities are static attributes of a firm's ability to use existing production facilities efficiently. From a sustainability perspective, such efficiency competencies enable companies to build capabilities in minimizing waste and reducing pollution. Productivity is crucial for a firm's capacity to transition to green business processes. Increased productivity enables a firm to adapt more easily to new sustainable practices by providing the resources, flexibility, and competitive advantage needed to invest and implement green technologies and processes (Cheng, C. et al. 2023). In contrast, lower productivity may limit the firm's ability to absorb the costs and changes necessary for green initiatives. Empirical studies have found international firms to have higher levels of productivity than firms that do not have international linkages (Wagner, 2013).

We therefore suggest that:

Hypothesis 2: Small and medium enterprises with greater productive capabilities are more likely to take greater initiatives towards green business transformation.

Innovation Capabilities and Green Business Initiatives

Innovative capabilities are dynamic capabilities, including technology-altering skills, knowledge, experiences, and organizational arrangements, that are required to generate and manage change and innovation (Teece, ...). Innovative capabilities are demonstrated by the firm's ability to acquire, adapt and upgrade new technologies. Firms with higher absorptive capacity are more likely to have higher organizational learning capability (Ozul & Zehir, 2023). Since the shift from existing to more environmentally friendly business processes requires upgrading equipment and procedures, SMEs with greater innovative capabilities are better equipped to achieve green organizational learning. This enables them to take more initiatives in upgrading their business processes to superior environmental practices. We therefore suggest that:

Hypothesis 3: Small and medium-sized enterprises with greater innovative capabilities are more likely to take greater initiatives towards greener business practices

Managerial Capabilities and SME Green Business Initiatives

From a resource-based view, managerial capability is a strategic resource that influences a firm's green initiatives (Jiang, Cai & Wang, 2024). Managerial capabilities refer to the skills, knowledge, and strategic competencies of a firm's leadership and management team (ref). Rather than treat sustainability as a peripheral concern, visionary managers recognize the need to integrate sustainability into their core business strategy to gain a long-term competitive advantage (Porter, 2011). Implementing green initiatives often necessitates organizational change, requiring managers to effectively manage business transformation processes and monitor progress to meet specific industry standards, such as ISO14001, total quality environmental management, and ecological audit. Therefore, we suggest that:

Hypothesis 4: Firms with greater management capabilities are more likely to take greater initiatives towards green business transformation.

Digitalization and SME Green Business Initiatives

Digitalization refers to the integration of digital technologies into business operations. Digital technologies, including artificial intelligence, cloud computing, big data analytics, and blockchain. A firm's digitalization processes can facilitate its ability to transform business operations into more environmentally friendly activities (Fu et al., 2022). Digitalization processes are known to facilitate communication between departments and accelerate innovation towards green transformation processes, such as developing green products with renewable or non-toxic materials, or improving the entire manufacturing process (F. Wu et al., 2021b; McIntyre & Srinivasan, 2017; X. Zhang et al., 2023a). Digitalization can also be used to reduce transaction costs and improve the efficiency of green innovation (ref). The use of digital products and digital platforms enables firms to better interact with stakeholders across the globe for more environmentally sustainable business practices (Mojumder et al., 2022; Pergelova et al., 2019).

According to Ardito (2023) digital technologies significantly influence sustainable innovation suggesting that firms with higher degrees of digitalization are better equipped to implement sustainability practices. This aligns with the resource-based view, suggesting that digital capabilities are strategic assets that can drive competitive advantage through sustainability.

Tang, Huang, and Xiong (2025) provide empirical evidence from Chinese firms, demonstrating that digital transformation contributes to reduced carbon emissions. Their findings suggest that digital tools enhance resource efficiency and foster innovation, which are critical for achieving environmental goals. Similarly, Jiang, Zhang, and Hu (2025) explore the role of the digital economy in promoting green innovation and improving regional resource allocation efficiency, further reinforcing the environmental benefits of digitalization.

A meta-analytic review of 44 studies by Bindeeba, Tukamushaba, and Bakashaba (2025), confirms a positive relationship between digital transformation and sustainable business performance. On the other hand, Kaplan and Ramanna (2021) argue that digital ESG reporting tools can improve accountability and stakeholder engagement.

Despite these benefits, challenges remain. The energy consumption of digital infrastructure, such as data centers, can offset environmental gains if not managed sustainably. Moreover, the digital divide may limit access to these technologies for smaller firms or those in developing regions.

The literature strongly supports the view that digitalization is a key enabler of sustainable business practices. It enhances innovation, operational efficiency, and transparency. We therefore suggest that:

Hypothesis 5: Small and medium-sized firms with greater levels of digitalization are more likely to pursue greater initiatives towards green transformation.

Financial Capability and Green Initiatives

Financial capability refers to a firm's ability to mobilize, allocate, and manage financial resources effectively. It encompasses access to capital, financial literacy, strategic financial planning, and risk management. Financial capability is a foundational enabler for initiating and scaling green business initiatives. According to Normal et al. (2025), financial capability enables smarter financial decisions that can support long-term business sustainability. They argue that firms with strong financial capability are better positioned to identify green investment opportunities and manage associated risks. SMEs face significant financing barriers due to high capital expenditure and long investment horizons. Financially capable SMEs are more likely to navigate these constraints successfully using innovative financing models (Mukherjee et al., 2024). Che (2024) discusses how financial management contributes to sustainability through effective resource allocation, performance evaluation, and transparency. Financially capable firms can integrate sustainability initiatives into their financial decision-making to align sustainability with profitability. Using structural equation modelling, Estébanez & Martín (2025) find that sustainability practices positively influence financial performance, suggesting that financially strong firms are more likely to benefit from sustainability investments. We, therefore, suggest that small and medium-sized firms with greater financial capability are more likely to take greater initiatives towards green business practices.

Hypothesis 6: Firms with greater access to financial resources are more likely to pursue greater initiatives towards green transformation processes

Market Power and Green Initiatives

Market power, defined as a firm's ability to influence market conditions and pricing due to its dominant position, can significantly shape its strategic orientation toward sustainability initiatives. Firms with substantial market power often possess the financial and strategic resources necessary to invest in sustainability. These firms can afford the upfront costs associated with green technologies, sustainable supply chains, and comprehensive ESG reporting. According to Biely and van Passel (2022), firms with market power can leverage their position to lead sustainability efforts or, conversely, resist change due to entrenched interests.

Hypothesis 7: Firms with greater productive capabilities are more likely to pursue greater initiatives towards green transformation processes

RESEARCH METHOD

To test the relationship between Green Initiatives (GI), Internationalization, and Firm Capabilities, we used the following regression model:

$$GBI = \beta_1 + \beta_1INT + \beta_2PDC + \beta_3INVC + \beta_4FINC + \beta_5MNGC + \beta_6DGT + \beta_7MP + Controls + \epsilon$$

The dependent variable in the above model is the level of a firm’s green business initiatives (GBI). On the other hand, independent variables include Internationalization (INT), Innovation Capabilities (INVC), Managerial Capabilities (MNGC), Financial Capability (FINC), Digitalization (DGT), and Market Power (MP). Control variables (Controls) include firm size, Firm Age, and a Sector-specific dummy.

This study uses an online firm-level data set collected in Poland in 2024 as part of the World Bank Enterprise Survey series. The dependent variable GBI was measured as a combination of two dummy variables: whether a firm monitors CO2 levels and whether the firm has adopted energy management measures. The Production Capability variable is measured as a ratio of total firm sales per number of permanent employees. A firm’s level of internationalization is an index that includes the percentage of shares owned by foreign individuals, the percentage of inputs from foreign suppliers, the percentage of direct and indirect exports as a share of total sales, and a firm’s use of technology licensed from foreign firms. Innovation Capability is an index made up of three dummy variables: whether the firm does in-house research and development, whether the firm has new product innovations in the last three years, and whether the firm has developed any new process innovations in the last three years. Managerial Capability is measured as a combination of two measures: the top manager’s years of sector-specific working experience and a dummy variable of whether the establishment has an internationally recognized quality certification. Digitalization is measured as a combination of three dummy variables: whether the firm has its own online website or social media presence, the percentage of the firm’s financial transactions receivables and payables done through online electronic systems. The variable Market Power is measured by a single dummy variable on whether a firm can maintain its market share, even if its prices are higher than those of its competitors. Variable Firm Size was measured as a firm's total number of permanent employees, while Firm Age was measured as the number of years between the year the firm was established and the survey year (2024). Table 3.1 provides descriptive statistics of the variables in this study.

Table 1. Descriptive Statistics

Mean	Std. Deviation	N
Green Initiatives	0.2351	0.35358
Internationalization	5.9782	8.53454
Production Capability	5.4188	0.45872
Innovation Capability	0.0081	0.99389
Managerial Capability	0.747	0.25088
Financial Capability	7.6605	11.01296
Digitalization	55.1304	16.23034
Market Power	0.1284	0.33465

Mean	Std. Deviation	N
Firm Size (no. of employee)	0.9539	0.60622
Firm Age (years)	1.2142	0.36097
Manufacturing sector(dummy)	0.4532	0.498

Source: Author

Table 2. Results of Regression Analysis-Dependent Variable in Green Business Initiatives

Variables	β -values	std. error- ϵ	p-values	VIF
Productivity	0.122	0.021	$p < 0.001$	1.143
Internationalization	0.1	0.001	$p < 0.001$	1.204
Innovation Capability	0.136	0.009	$p < 0.001$	1.106
Digitalization	0.033	0.001	$p = 0.205$	1.082
Market Power	0.045	0.027	$p = 0.074$	1.042
Managerial Capability	0.071	0.039	$p = 0.01$	1.229
Financial Capability	0.189	0.001	$p < 0.001$	1.051
Firm Size (no. of employee)	0.132	0.015	$p < 0.001$	1.083
Firm Age (years)	0.018	0.026	$p < 0.485$	1.098
Manufacturing sector (dummy)	0.105	0.018	$p < 0.001$	1.079
$R^2 = 0.205$				
F-statistic = 33.023 $p < 0.001$				
Du rbin-Watson = 2.021				

Source: Author

DISCUSSION AND CONCLUSION

As shown in Table 2, results from linear multiple regression analysis find a strong positive link between SME green initiatives and firm internationalization, firm innovation capabilities, firm productive capabilities, managerial capabilities, and firm performance. On the other hand, this study finds no significant relationship between SME's green initiatives and Firms' Age, Digitalization, nor Market Power. However, this study was limited by the measures available in the online World Bank Enterprise survey database. Further studies may build upon the analytical framework developed in this study and use other data sources to provide more comprehensive measures of firm business transformation processes and capabilities. Given that Poland is a major player among Central and Eastern European countries, a better understanding of what drives SME manufacturing firms in Poland to transform their business processes towards greener processes is important for developing policy and management strategies that will address the challenges of environmental sustainability. A replication and extension of this study with data from other countries is

suggested as a step in understanding how multinational enterprises can play a greater role in reducing the negative effects of climate

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EVOLUTION OF THE EU'S SUSTAINABLE DEVELOPMENT CONCEPT AND GOALS OVER THE LAST DECADE

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Abstract

Over the last decade, the concept of sustainable development in the European Union has undergone a significant evolution, moving from a common understanding of a balance between economic growth, social justice and environmental protection to strategic frameworks and policies. With the adoption of the UN Sustainable Development Goals and the European Green Deal, sustainable development is at the center of its vision. The changes in the strategic goals are expressed in the integration of the green and digital transitions, the pursuit of climate neutrality by 2050, the circular economy and social sustainability, making the EU a global leader. The efforts are complemented by financing instruments as well as strengthening the regulatory framework in various areas. Comparative data for Bulgaria will also be analyzed within the framework of the study.

Keywords: sustainable development, environment, circular economy

JEL classification: Q01, O44, O52, L51

INTRODUCTION

Over the past decade, the idea of sustainable development within the European Union (EU) has changed quite noticeably. What once sounded like a broad, somewhat idealistic concept has turned into a framework with concrete, measurable, and cross-sectoral goals. In its early stages, sustainability in the EU was mostly about finding balance among economic growth, social fairness, and environmental protection. Gradually, however, it evolved into something much deeper – a guiding principle that shapes nearly every aspect of EU policymaking and governance (Barnes & Hoerber, 2013).

This evolution mirrors a broader global trend: the shift from general statements about sustainability to integrated policy strategies that connect environmental ambitions with competitiveness, inclusion, and technological innovation (Meadowcroft, 2013).

A major turning point came in 2015 with the adoption of the United Nations' 2030 Agenda for Sustainable Development. The 17 Sustainable Development Goals (SDGs) provided a shared framework for action and emphasized how ecological, economic, and social dimensions are all intertwined (UN, 2015). The EU quickly aligned its approach with these global goals, embedding the SDGs in both internal and external policies and positioning them as the foundation of a long-term development strategy (European Commission, 2016). Researchers often describe this phase as the point when the EU began moving away from a purely "environment-led" model toward a more systemic one – a model grounded in coordination across levels of governance, coherence between policies, and continuous monitoring based on data (European Parliament Think Tank, 2019).

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The European Green Deal (EGD), launched in 2019, reinforced and expanded this direction. It is often described not just as a climate or environmental initiative but as a comprehensive growth strategy and, in some ways, a new social contract for Europe (Oberthür & Dupont, 2021). The EGD connects environmental objectives with digital transformation, industrial modernization, and social justice. Its main ambition – to make the EU the first climate-neutral continent by 2050 – is supported by a series of targeted measures such as *Fit for 55*, *Farm to Fork*, and the *Circular Economy Action Plan* (Eckert, 2021). Together, these initiatives show how sustainable development has been translated into concrete policies and sectoral actions.

Financial instruments have also played a crucial role in this transition. Programs like NextGenerationEU and the Recovery and Resilience Facility (RRF) make sustainability a precondition for investment and growth (Elkerbout et al., 2021). This approach aligns with the wider idea of *sustainable finance*, which aims to direct both public and private capital toward climate-friendly and socially responsible projects (Mittwoch, 2024). Furthermore, the adoption of the EU Taxonomy Regulation and the new corporate sustainability reporting standards mark a clear move from voluntary commitments toward mandatory frameworks and accountability mechanisms.

At the same time, the EU’s sustainability narrative has expanded. In recent years, it has increasingly included digital transformation and social sustainability as essential elements of long-term resilience (Kovacic, 2024). This broader understanding reflects academic discussions around the so-called *twin transition*, emphasizing that Europe’s future competitiveness depends on integrating both green and digital transformations. Eurostat’s Sustainable Development Indicators (SDIs) have also become more sophisticated, helping policymakers track progress through data-driven assessments (Eurostat, 2023).

This study explores how the EU’s understanding and implementation of sustainable development have evolved between 2015 and 2025. It focuses on the connection between strategic vision, institutional structures, and practical policy outcomes. The analysis looks at how the Union has moved from broad, declarative goals to tangible, measurable results – and how this shift has strengthened its role as a global leader in sustainability governance. A separate comparative section will examine Bulgaria’s progress in applying European sustainability policies, drawing attention to the specific challenges, limitations, and opportunities national administrations face when turning EU ambitions into reality.

CONCEPTUAL AND STRATEGIC BACKGROUND

The idea of sustainable development first emerged as a response to growing tensions between three core goals – economic progress, environmental protection, and social justice. When the Brundtland Report defined it back in 1987 as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987), it captured a simple but powerful vision. Since then, the concept has evolved into a broad, multidimensional framework that shapes how governments and international institutions approach long-term development. In Europe, sustainability has come to represent much more than just environmental concern – it now

stands as a key governance principle that connects economic modernization, social cohesion, and ecological integrity.

In the early 2000s, this thinking began to take concrete form within EU policymaking. The EU Sustainable Development Strategy (EU SDS) marked the first serious effort to express sustainability as an overarching principle at the European level. When the Gothenburg European Council adopted the SDS in 2001, it was designed to complement the Lisbon Strategy for Growth and Jobs, effectively placing environmental protection alongside economic and employment priorities (European Council, 2001). A few years later, the Renewed SDS (2006) refined this approach. It identified several key themes – climate change, public health, social inclusion, and sustainable consumption – while calling for stronger policy coherence and more participatory governance (European Council, 2006). Many scholars view this period as a time of normative consolidation: the EU was defining what sustainable development meant within its own system and positioning it as part of its global identity (Lafferty, 2004; Baker, 2020).

However, by the start of the 2010s, criticism began to surface. Analysts pointed out that, despite the EU's strong rhetoric, its sustainability agenda often lacked clear implementation tools and measurable progress (Kettunen, 2023). The adoption of the United Nations 2030 Agenda for Sustainable Development in 2015 marked a decisive turning point. The 17 Sustainable Development Goals (SDGs) provided a global roadmap and emphasized that economic, social, and environmental priorities are interlinked and inseparable (UN, 2015). For the EU, this framework offered both direction and legitimacy. The European Commission's 2016 Communication, *Next Steps for a Sustainable European Future*, integrated the SDGs into major EU policy areas and reaffirmed that sustainable development should serve as "the overarching objective of the Union" (European Commission, 2016).

Over time, the EU's interpretation of sustainability has been shaped by two main imperatives: ensuring policy coherence and promoting systemic transformation. The idea behind Policy Coherence for Sustainable Development (PCSD) is that every policy – whether related to trade, agriculture, or migration – should contribute to sustainability goals rather than undermine them. At the same time, growing recognition of planetary limits and the urgency of the climate crisis has transformed sustainability into something more ambitious. Instead of simply adapting existing systems, the EU began to view sustainability as a process of deep transformation – a fundamental restructuring of production models, fiscal systems, and innovation strategies (Rockström et al., 2009).

This conceptual foundation paved the way for the European Green Deal (EGD) in 2019, widely seen as the EU's most comprehensive sustainability initiative so far. Building on the 2030 Agenda, the Green Deal weaves together environmental, social, and economic goals with digital transformation and competitiveness at its core. It represents a shift from isolated environmental policies to a new European growth model built around sustainability principles. By integrating these ideas into financial mechanisms, industrial strategies, and governance frameworks, the EU effectively turned sustainable development from an abstract commitment into a structured, measurable policy agenda.

In summary, the EU's trajectory over the past two decades reveals a clear evolution – from seeing sustainability as primarily an environmental issue to embedding it within the

very logic of European governance. This transformation has created the groundwork for more concrete policy developments, explored in the next section, such as the implementation of the European Green Deal, the advancement of the circular economy, and the growing importance of the social dimension within the green transition.

THE EU'S STRATEGIC EVOLUTION IN THE LAST DECADE

The decade between 2015 and 2025 has been a truly transformative one for the European Union (EU) in terms of how it understands and applies the idea of sustainable development. Over these years, sustainability moved from being a broad, almost aspirational goal to becoming a practical framework that shapes economic modernization, social inclusion, and environmental protection. Step by step, the EU began embedding sustainability into its laws, fiscal systems, and governance structures. This process eventually culminated in the launch of the European Green Deal (EGD) – the most comprehensive policy package the Union has produced so far. The following section outlines the key phases and strategic elements of this transformation: the adoption of the Green Deal, the rise of the circular economy, the strengthening of social sustainability and the Just Transition, and finally, the financial mainstreaming of sustainability goals.

When the European Commission introduced the Green Deal in December 2019, it marked a genuine turning point in the EU's policy direction. Described as Europe's new growth strategy, it aimed to separate economic progress from resource depletion and environmental harm. The plan's core objective was to make Europe the first climate-neutral continent by 2050, supported by intermediate goals for 2030 – including a 55% reduction in greenhouse gas emissions compared to 1990 levels. These targets were later given legal force through the European Climate Law.

Scholars have often described the Green Deal as both a modernization plan and a kind of new social contract that ensures no region or citizen is left behind (Eckert, 2021). By linking environmental transition with industrial innovation, competitiveness, and digital transformation, the EGD reframed sustainability as a source of growth rather than a limitation. The “Fit for 55” legislative package helped turn these ambitions into action, reforming the Emissions Trading System (ETS) and strengthening renewable energy and energy efficiency targets (Elkerbout et al., 2021).

Another important aspect of the Green Deal was the way it changed governance itself. The European Semester, which had previously focused mainly on macroeconomic coordination, was adapted to monitor progress on environmental and social sustainability goals as well (Zeitlin & Vanhercke, 2020). This was an institutional innovation that improved policy coherence among member states and tied economic oversight more closely to climate and social performance.

Researchers have highlighted that the Green Deal represents a shift away from gradual, incremental policymaking toward a more systemic and transformative approach (Thorman et al., 2023). It brought together previously separate areas – climate, energy, biodiversity, agriculture, and industry – under a single strategic narrative. By linking sustainability with

competitiveness, the EU has also positioned itself as a global leader and potential standard-setter in both sustainable finance and green governance (Bocquillon, 2022).

A key part of this broader transformation is the circular economy, which challenges the traditional “take–make–dispose” model by promoting reuse, recycling, and smarter resource management. The updated Circular Economy Action Plan from 2020 became a cornerstone of the EU’s sustainability agenda. Yet, the circular economy is not only about reducing waste – it is also an industrial and innovation strategy. It seeks to cut resource dependency, encourage green technologies, and foster new business models aligned with sustainability goals (Kirchherr et al., 2017). The 2020 plan particularly stressed circular design, sustainable products, and waste prevention in sectors like construction, textiles, and electronics.

The shift toward circularity reflects a deeper change in thinking. Rather than focusing on “end-of-pipe” solutions – that is, treating pollution after it occurs – the EU began to integrate sustainability across entire value chains. This approach supports the broader ambitions of the Green Deal by contributing to climate neutrality, job creation, and industrial resilience (Schroeder et al., 2018). Funding bodies such as the European Investment Bank (EIB) and Horizon Europe have since directed increasing amounts of capital toward circular economy projects, illustrating how sustainability is becoming embedded in the EU’s financial logic.

While environmental and economic pillars have long dominated sustainability discussions in Europe, the past decade has brought growing attention to the social dimension. The Just Transition Mechanism (JTM), introduced in 2020, captures this shift. It is designed to support regions and workers most affected by the shift to a low-carbon economy, ensuring that the process of decarbonization remains fair and inclusive.

Social sustainability covers much more than jobs – it includes equity, inclusion, and equal access to opportunities. The European Pillar of Social Rights (2017) and its Action Plan (2021) reaffirm this connection, emphasizing that sustainability must ultimately be centered on people. The success of the transition depends not only on financial or environmental performance but also on social legitimacy – on whether citizens perceive the process as fair and beneficial.

To that end, the Just Transition Fund (JTF), with a budget of €55 billion, was established to support retraining programs and economic diversification in carbon-intensive regions (European Commission, 2020a). Nevertheless, disparities remain. Countries with smaller administrative capacity or limited fiscal flexibility, such as Bulgaria and Romania, often find it more difficult to ensure that transitions are equitable.

The growing focus on social sustainability also reflects the EU’s evolving view of resilience. The so-called twin transition – green and digital – can only succeed if it promotes inclusiveness, human capital, and cohesion. This social pillar effectively grounds the EU’s transformation within a broader framework of democratic legitimacy.

At the same time, the financial and regulatory mainstreaming of sustainability has profoundly reshaped EU governance. After the COVID-19 crisis, the NextGenerationEU recovery instrument (€750 billion) required that at least 37% of total spending go toward climate objectives (European Commission, 2020b). This rule effectively hardwired sustainability into fiscal and recovery planning.

In parallel, the EU built a comprehensive sustainable finance framework to steer private investment toward responsible activities. The EU Taxonomy Regulation (2020) defines what counts as a sustainable economic activity, while the Sustainable Finance Disclosure Regulation (SFDR) and the Corporate Sustainability Reporting Directive (CSRD) increase transparency and accountability in how companies address sustainability.

Some scholars refer to these changes as the financialization of sustainability (Bocquillon, 2024). This means that sustainability is no longer driven only by policy directives but also by financial markets, where investment standards and disclosure rules act as tools for systemic change. These efforts align Europe with international initiatives such as the Task Force on Climate-Related Financial Disclosures (TCFD) and reinforce its leadership role in sustainable finance.

Still, challenges remain. Critics warn that the financialization trend can become overly technocratic, focusing too narrowly on quantitative indicators while overlooking the social realities of transition (Mertens & van der Zwan, 2025). Ensuring that financial instruments foster inclusive rather than selective growth continues to be a major policy test for the years ahead.

Overall, the EU's strategic journey over the past decade reveals a clear shift – from fragmented, policy-specific initiatives to an integrated sustainability architecture that brings together environmental, economic, and social priorities. Through the Green Deal and its related frameworks, sustainability has become the organizing principle of EU governance itself. The Union's long-term success, however, will depend on whether it can balance ecological ambition with fairness and unity across its diverse member states.

The next chapter turns to the case of Bulgaria, offering a closer look at how one member state navigates these complex changes – and what its experience reveals about the EU's capacity to achieve truly cohesive sustainable transformation.

MEASURING PROGRESS: FROM PRINCIPLES TO INDICATORS

The evolution of the European Union's sustainability agenda over the past decade goes far beyond headline strategies like the European Green Deal or the Circular Economy Action Plan. A core part of this transformation lies in the institutionalization of measurement – the effort to turn broad principles and political commitments into measurable goals, indicators, and monitoring tools. Through this process, the EU has shifted sustainable development from being mostly declarative to becoming a field rooted in evidence-based governance.

A major influence on this shift came from the 2030 Agenda for Sustainable Development, adopted by the United Nations in 2015. The EU pledged to implement all 17 Sustainable Development Goals (SDGs) and to create a monitoring system that would track progress both at the European and national levels (Eurostat, 2023). Since 2017, Eurostat has published Sustainable Development in the European Union: Monitoring Report on Progress towards the SDGs in an EU Context, which remains the main instrument for assessing the EU's progress across policy areas.

The current indicator system is organized around 102 specific indicators, grouped under the 17 SDGs but adapted to reflect EU policies and priorities. For example, SDG 8, which focuses on “Decent Work and Economic Growth,” includes measures such as resource productivity and circular material use – linking economic progress directly to environmental efficiency (Eurostat, 2024). This kind of adaptation demonstrates the EU’s distinctive understanding of sustainability, which emphasizes interconnected social, economic, and ecological transformation rather than treating each dimension as a separate goal (Guijarro & Poyatos, 2018).

Researchers note that these indicators have improved policy coherence and accountability across EU institutions (Böhringer & Jochem, 2007). At the same time, the growing reliance on quantitative indicators raises an important concern: the risk of oversimplifying complex sustainability challenges into numbers that may not capture their full social meaning. Finding the right balance between precision and depth – between what can be counted and what truly matters – remains an ongoing challenge.

Eurostat’s SDG Indicator Framework serves as the operational backbone of the EU’s monitoring system. It uses a three-layered approach:

- tracking overall EU progress toward each SDG (based on five-year trends),
- analyzing progress across policy clusters (economic, social, environmental), and
- comparing results between countries and demographic or regional groups.

According to Eurostat’s 2023 report, the EU made notable progress in several areas. Improvements were observed in reducing inequalities (SDG 10), promoting decent work and growth (SDG 8), and lowering poverty rates (SDG 1). There was also solid progress on goals related to sustainable agriculture (SDG 2), innovation and infrastructure (SDG 9), sustainable consumption and production (SDG 12), life below water (SDG 14), quality education (SDG 4), and gender equality (SDG 5). Moderate but steady gains were recorded in peace and justice (SDG 16), sustainable cities (SDG 11), global partnerships (SDG 17), and climate action (SDG 13) (Eurostat, 2024).

This growing reliance on measurement has important institutional implications. It strengthens evidence-based policymaking, improves cross-sector coordination, and links sustainability targets directly to mechanisms such as the European Semester and the European Green Deal. As a result, progress in sustainability is increasingly assessed alongside macroeconomic stability and fiscal performance.

Yet scholars caution that this approach may unintentionally introduce technocratic biases, emphasizing what can be quantified rather than what is socially or ethically significant. While the EU framework is well-developed in environmental and economic metrics, it still struggles to fully capture the social dimensions of sustainability – equity, inclusion, participation, and overall well-being. Expanding the scope of what counts as measurable sustainability remains one of the EU’s major methodological and political challenges.

In recent years, EU institutions have tried to move beyond simple indicator tracking toward impact-based evaluation. The European Commission’s Better Regulation Agenda (first launched in 2015 and revised in 2021) now requires that every new initiative undergo a sustainability impact assessment, integrating environmental, social, and economic dimensions into legislative design (European Commission, 2021). This embeds the

precautionary principle into EU policymaking and aligns legislation with sustainability goals from the start.

The European Semester and the Recovery and Resilience Facility (RRF) have further reinforced this integration through conditionality mechanisms – for instance, requiring that at least 37% of RRF investments contribute to climate goals and 20% to digital transformation. These thresholds transform broad ambitions into tangible fiscal and policy obligations.

According to Fabbrini (2024), this marks an important stage in the maturation of EU sustainability governance. Measurement has evolved beyond mere post-hoc evaluation; it now functions as a steering mechanism, shaping how policies are designed, funded, and implemented. In effect, sustainability indicators have become a kind of soft law, influencing member state behavior without the need for new treaties or directives.

However, persistent challenges remain, especially concerning data comparability across member states. Eurostat's harmonized indicators often fail to account for structural and regional differences. For example, while EU-wide averages may suggest steady progress in renewable energy deployment, several Eastern European countries – notably Bulgaria – continue to lag behind. Such gaps highlight the risk that indicator-based governance could unintentionally reinforce inequalities instead of addressing them.

Despite these concerns, the EU's achievement in building a comprehensive monitoring and evaluation system is significant by global standards. It reflects a unique multi-level governance model that connects international commitments (the UN SDGs), regional frameworks (EU strategies), and national implementation tools (such as the European Semester). Together, these elements form a complex but coherent system in which sustainability is not only a political objective but also a performance metric that shapes how Europe governs its future.

COMPARATIVE ANALYSIS: BULGARIA'S PROGRESS AND CHALLENGES

The European Union's shift toward a sustainable, climate-neutral economy presents both opportunities and challenges for its member states. For countries such as Bulgaria, which joined the EU in 2007, the past decade has been a period of catching up with European sustainability standards while also facing structural economic, social, and institutional barriers. Bulgaria's experience highlights the dual nature of EU integration: access to funding, policy coordination, and institutional learning provide clear benefits, yet aligning national development pathways with the SDGs and the European Green Deal (EGD) remains a complex task.

According to the Eurostat SDG Monitoring Report (2024), Bulgaria has achieved only moderate or limited progress across most of the 17 SDGs, consistently lagging behind the EU average in areas such as climate action, clean energy, and innovation capacity. On the other hand, the country performs relatively well in partnership for the goals (SDG 17), life below water (SDG 14), and affordable and clean energy (SDG 7).



Source: Eurostat

Fig. 1. SDG country overview: Bulgaria

Economic indicators show that Bulgaria's GDP per capita (in PPP) rose from 46% of the EU average in 2013 to around 64% in 2023 (Eurostat, 2024). While macroeconomic growth has been stable and public debt low, the country continues to struggle with productivity gaps and technological modernization (World Bank, 2022).

Environmental indicators reveal that Bulgaria remains one of the EU's most carbon-intensive economies. Energy generation is heavily reliant on lignite coal, particularly from the Maritsa East complex, the largest CO₂ emitter in Southeast Europe (EEA, 2024). Although Bulgaria has committed to reaching climate neutrality by 2050, per capita greenhouse gas emissions remain 30–40% above the EU average.

Social indicators reflect persistent inequality and exclusion. Despite some improvements in poverty reduction over the last decade, Bulgaria had the highest share of people at risk of poverty or social exclusion in the EU in 2023 – 32% compared to the EU average of 21.6% (Eurostat, 2024). These mixed outcomes highlight the dual character of Bulgaria's sustainability transition: progress in institutional adaptation and EU funding access, alongside structural weaknesses that slow transformative change.

The energy sector is central to Bulgaria's sustainability challenges. Coal and lignite dominate electricity production, and the Maritsa East complex remains a focal point of both environmental impact and employment. While plans exist to phase out coal by the early 2030s, resistance persists due to local reliance on mining jobs. The Just Transition Mechanism (JTM) provides approximately €1.2 billion to Bulgaria through 2027 to support regional diversification and workforce reskilling (European Commission, 2023a).

The National Recovery and Resilience Plan (NRRP), approved in 2022, dedicates about 58% of its total investment to green and digital priorities, exceeding the EU's minimum thresholds (European Commission, 2022). Key reforms focus on energy efficiency, renewable energy deployment, and sustainable mobility. However, progress has been hampered by administrative fragmentation and delays in implementation.

In terms of renewable energy, Bulgaria reached a 22% share of gross final energy consumption in 2023, slightly above the EU average (Eurostat, 2024). Yet, much of this

relies on traditional biomass and hydropower, while wind and solar investments remain limited. Outdated grid infrastructure and policy uncertainty continue to discourage private investment (Markov, 2023).

The circular economy is another critical area. Bulgaria has formally adopted the EU Circular Economy Action Plan (2020) and incorporated circularity measures into the Waste Management Plan 2021–2028. Nevertheless, the recycling rate of municipal waste (40%) remains below the EU average (49%), and landfill dependence is still high (Eurostat, 2023). Weak enforcement of waste legislation and limited incentives for industrial eco-innovation have been identified as key barriers (Goranova & Anguelov, 2024).

Overall, Bulgaria's green transition illustrates the gap between policy alignment and real-world implementation. EU financial and regulatory frameworks have accelerated reforms, but long-term success will depend on institutional strengthening and broad societal engagement.

The digital transition has become central to EU sustainability strategies, promoting innovation and resource efficiency. Bulgaria, however, continues to lag behind other member states. The Digital Economy and Society Index (DESI) 2023 ranks Bulgaria last among the 27 EU members, citing low digital skills, limited business adoption of technology, and underdeveloped public sector digitalization (European Commission, 2023b). This digital lag constrains the country's ability to fully leverage synergies between the green and digital transitions – the so-called “twin transition.” Still, the NRRP includes ambitious reforms in e-governance, digital infrastructure, and ICT-based innovation. Strengthening digital capacity could, over time, boost resource efficiency, sustainable production, and energy management (Parashkevova et al., 2024).

In innovation and research, Bulgaria remains underdeveloped. R&D spending is only 0.9% of GDP, far below the EU target of 3% (Eurostat, 2024). Nevertheless, emerging clusters in software, engineering, and clean technologies in Sofia, Plovdiv, and Varna suggest gradual integration into the European innovation ecosystem.

Social sustainability continues to be the most persistent challenge. Employment rates have improved, and unemployment fell below 5% in 2023, but income inequality (Gini coefficient 40.4) and regional disparities are among the highest in the EU (Eurostat, 2024). Rural depopulation and the emigration of skilled workers further weaken social cohesion.

EU instruments such as the Just Transition Fund (JTF) and Cohesion Policy 2021–2027 aim to address these disparities through investments in education, digital skills, and infrastructure. Yet research shows that Bulgaria's administrative fragmentation and limited absorption capacity often hinder effective fund utilization (European Parliament, 2024). Many municipalities lack the expertise to design and implement sustainable development projects, limiting bottom-up innovation.

There have been some positive social trends. Early school-leaving fell from 12.5% in 2013 to 9.8% in 2023, and participation in early childhood education increased (Eurostat, 2024). These improvements contribute to long-term human capital development, a critical prerequisite for sustainable and inclusive growth.

Institutional and governance factors remain decisive. Bulgaria has established a National Council for Sustainable Development, but coordination across ministries is weak.

Short-term political cycles and frequent government changes often undermine policy coherence between environmental, economic, and social priorities.

EU-level frameworks – including the European Semester, the NRRP, and the European Green Deal Dashboard – have improved policy alignment and monitoring. However, their effectiveness ultimately depends on national ownership and participatory governance. Sustainability transitions require not just external incentives, but adaptive domestic governance that actively involves civil society, academia, and the private sector.

Looking ahead, Bulgaria's sustainability prospects depend on three strategic imperatives:

1. Accelerating decarbonization through renewable energy expansion and industrial modernization;
2. Strengthening administrative capacity and policy coordination for effective EU fund utilization;
3. Promoting social inclusion and regional equality to ensure a just transition.

How successfully Bulgaria addresses these priorities will determine its contribution to the EU's broader transformation toward climate neutrality and inclusive prosperity.

DISCUSSION: ACHIEVEMENTS, GAPS, AND FUTURE DIRECTIONS

Over the past ten years, the European Union has made significant progress in embedding sustainable development at the heart of its policy framework. Initiatives such as the European Green Deal, the Fit for 55 package, and REPowerEU have collectively driven the EU's transition toward climate neutrality, establishing legally binding targets for emissions reductions and a robust regulatory foundation. Member states have also made tangible progress on several UN Sustainable Development Goals (SDGs), particularly in areas like renewable energy expansion, waste management, and greenhouse gas reduction (Eurostat, 2024). Through instruments like the EU Taxonomy and the Sustainable Finance Disclosure Regulation (SFDR), the EU now stands among the global leaders in sustainability policy coherence and green finance innovation (Cremasco & Boni, 2022).

Despite these advances, challenges remain. Progress is uneven across member states, with Northern and Western European countries generally outperforming Southern and Eastern regions, including Bulgaria and Romania. While the EU has developed comprehensive legislative and financial frameworks, policy fragmentation and limited coordination between sectoral initiatives still hinder full policy integration. Similarly, the incorporation of the SDGs into EU governance is often more declarative than transformative, as economic and digital transitions frequently outpace social and institutional developments.

Financing and monitoring continue to pose key challenges. Even with substantial initiatives like NextGenerationEU and the Just Transition Mechanism, questions remain regarding long-term fiscal sustainability, administrative capacity, and the ability to measure cross-cutting progress on the SDGs with reliable, comparable indicators. While the European Semester now includes sustainability considerations, its effectiveness in enforcing national reforms aligned with the SDGs remains limited.

Looking ahead, the EU's success will hinge on its ability to integrate green, digital, and social transitions into a single, cohesive strategy. Future efforts should prioritize policy coherence, strengthen data-driven monitoring systems, and ensure that the social dimension of the green transition – particularly fair access to green jobs, energy affordability, and regional cohesion – remains central. At the same time, reinforcing global partnerships and the EU's external sustainability diplomacy will be essential to maintain its leadership in the post-2030 sustainable development agenda.

In summary, while the EU has made considerable strides in embedding sustainability into its strategic and institutional DNA, the coming decade will be crucial in determining whether these frameworks can translate into a truly resilient, inclusive, and climate-neutral European model.

CONCLUSION

Over the last decade, the European Union has transformed its approach to sustainable development, moving from a broad, normative commitment toward a fully integrated governance framework. Today, sustainability is no longer a peripheral goal but a central pillar of the EU's economic, social, and environmental policies. The adoption of the UN Sustainable Development Goals in 2015 and the launch of the European Green Deal in 2019 have been particularly transformative, embedding clear targets, regulatory mechanisms, and funding priorities into the Union's long-term strategy. These initiatives have strengthened policy coherence across member states and positioned the EU as a global leader in climate action and sustainable governance.

However, the EU's experience demonstrates that achieving sustainability is about far more than setting ambitious targets. Real progress requires the alignment of multiple policy areas, the engagement of diverse stakeholders, and robust institutional capacity to turn strategy into measurable results. The integration of the green and digital transitions, alongside the social dimension of the Just Transition, highlights the growing maturity of EU sustainability governance. At the same time, persistent disparities between member states and uneven implementation of policies underscore the need for deeper coordination, more effective monitoring, and equitable access to resources to ensure that no country or region is left behind.

Looking forward, the EU faces a critical period in preparing for the post-2030 sustainability agenda and achieving its 2050 climate neutrality goal. Success will depend not only on maintaining momentum but also on translating strategic principles into practical, lived outcomes across all sectors of society. Sustainability must remain both a guiding philosophy and a tangible reality – shaping economic competitiveness, social inclusion, and environmental stewardship. The coming years will test the Union's ability to foster resilience, adapt to emerging global challenges, and demonstrate that sustainable development is not just an aspirational framework but a viable path toward a prosperous, equitable, and climate-resilient Europe.

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VOLATILITY DYNAMICS OF BITCOIN AND EUROSTOXX 50 IN THE EUROZONE: AN EMPIRICAL GARCH ANALYSIS

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Abstract

This study empirically analyzes the volatility dynamics of Bitcoin and the EuroStoxx 50 index from 2014Q1 to 2025Q2 using GARCH methodology. The analysis focuses on comparing the volatility characteristics and persistence between digital and traditional assets within the European context. Results indicate that Bitcoin exhibits significantly higher volatility than EuroStoxx 50, with a ratio of 4.95:1. The average conditional volatility for Bitcoin reaches 43.23%, compared to 8.73% for EuroStoxx 50. These results highlight the distinct risk profiles of digital versus traditional assets.

Keywords: Bitcoin, EuroStoxx 50, volatility, GARCH, portfolio

JEL: G15, G17, C58

Introduction (TNR 12pt., bold, left centred)

The emergence of cryptocurrencies, particularly Bitcoin, has significantly transformed the global financial landscape since 2009. Understanding volatility in relation to traditional financial markets has become critical for investors and policymakers. This study focuses on the volatility dynamics between Bitcoin and the EuroStoxx 50 index within the European context.

The European Central Bank's monetary policy, including negative interest rates and quantitative easing, provides a unique setting for examining asset volatility. The period from 2014 to 2025 covers several major economic events, including the COVID-19 pandemic and subsequent inflationary pressures.

Bitcoin's decentralized nature contrasts with traditional equities influenced by corporate fundamentals and regulatory frameworks. The EuroStoxx 50, representing the largest Eurozone stocks, serves as a benchmark for institutional investment behavior. Comparing these fundamentally different assets under varying macroeconomic conditions provides insights into risk transmission and cryptocurrencies' evolving role in financial markets.

The primary objective is to analyze and compare the volatility dynamics of Bitcoin and EuroStoxx 50, identifying their distinct risk characteristics and persistence patterns.

DATA

This study utilizes quarterly data from 2014Q1 to 2025Q2, totaling 46 observations per variable. Bitcoin quarterly prices serve as the primary cryptocurrency measure, while ECB interest rates capture monetary policy stance, M2 money supply reflects overall liquidity, and the GDP index (2015=100) measures economic activity.

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Table 1. Data table

Q	BTC_quar- terly	EURO_Stoxx50	M2	ECB rate	GDP_Index
2014Q1	335.1	3,198.39	9284719	0.25	97.524
2014Q2	466.2	3,115.51	9362807	0.15	97.773
2014Q3	306.9	3,113.32	9482753	0.05	98.237
2014Q4	265	3,013.96	9676028	0.05	98.612
2015Q1	228.4	3,615.59	9815782	0.05	99.341
2015Q2	237	3,600.69	9947884	0.05	99.784
2015Q3	211	3,418.23	10060424	0.05	100.19
2015Q4	396.3	3,351.44	10217313	0.05	100.684
2016Q1	367.4	3,028.21	10342705	0	101.183
2016Q2	607.4	2,990.76	10452292	0	101.404
2016Q3	545.7	3,055.25	10569166	0	101.885
2016Q4	913.5	3,045.09	10710530	0	102.64
2017Q1	1007	3,559.59	10881654	0	103.44
2017Q2	2142.9	3,449.36	10988182	0	104.172
2017Q3	3659	3,662.18	11095402	0	104.916
2017Q4	11993.6	3,230.68	11208278	0	105.753
2018Q1	5615	3,536.52	11290502	0	105.814
2018Q2	5460.1	3,525.49	11497274	0	106.33
2018Q3	5687	3,197.51	11561340	0	106.404
2018Q4	3235.4	3,609.29	11709262	0	107.036
2019Q1	3646.2	3,514.62	11895554	0	107.768
2019Q2	9452.5	3,466.85	12079082	0	108.154
2019Q3	7619	3,604.41	12268513	0	108.348
2019Q4	6397.4	3,159.43	12380743	0	108.317
2020Q1	5835.5	2,927.93	12790701	0	104.686
2020Q2	8139.5	3,174.32	13221584	0	93.102
2020Q3	9189.9	2,958.21	13442381	0	103.888
2020Q4	23631.3	3,640.91	13745104	0	104.268
2021Q1	50008.3	3,974.74	14019354	0	104.935
2021Q2	29560.1	4,089.30	14232712	0	107.269
2021Q3	37862.1	4,250.56	14489494	0	109.168

Q	BTC_quarterly	EURO_Stoxx50	M2	ECB rate	GDP_Index
2021Q4	40660.3	3,481.44	14708392	0	110.054
2022Q1	41095.8	3,802.86	14979994	0	110.696
2022Q2	19026	3,708.10	15142824	0	111.682
2022Q3	19818.8	3,617.54	15422603	1.25	112.283
2022Q4	15420.9	4,174.60	15229154	2.5	112.181
2023Q1	26266.6	4,359.31	15188493	3	112.317
2023Q2	27901.6	4,471.31	15091218	4	112.517
2023Q3	25506.9	4,061.12	15072362	4.5	112.503
2023Q4	38397	4,163.45	15100189	4.5	112.543
2024Q1	66129.9	4,921.22	15133918	4.25	112.968
2024Q2	58393	4,872.94	15289072	4.25	113.201
2024Q3	56874.6	4,827.63	15399891	3.65	113.677
2024Q4	90168.1	4,648.40	15575597	3.15	114.018
2025Q1	76292.4	5,160.22	15658327	2.65	114.671
2025Q2	90961.9	5,319.92	15710290	2.15	114.804

Source: Author's own elaboration

Data Standardization

Before estimating the GARCH model, the data underwent preprocessing to bring each indicator to a comparable scale and to stabilize the variance. The price levels of Bitcoin and the EURO STOXX 50 index were transformed into quarterly log-returns using the following formula:

$$rt=100 * \ln\left(\frac{P_t}{P_{t-1}}\right) \quad (1)$$

Which removes the trend component and ensures stationarity, necessary for reliable volatility modeling. The macroeconomic variables M2, the ECB interest rate, and the GDP index were also standardized by calculating the z-score.

$$Z_{i,t}=\left(\frac{x_{i,t}-x_i}{s_i}\right) \quad (2)$$

where $x_{i,t}$ is the value of variable i at time t , x_i is its mean value over the entire period, and s_i is the standard deviation.

Table 2. Data Standardization

Q	BTC_quarterly_ret	EURO_Stoxx50_ret	M2_std	ECB_rate_std	GDP_Index_std
2014Q2	33.10	-2.63	-1.53	-0.48	-1.57
2014Q3	-41.81	-0.07	-1.48	-0.54	-1.49
2014Q4	-14.68	-3.24	-1.39	-0.54	-1.42
2015Q1	-14.86	18.20	-1.32	-0.54	-1.29
2015Q2	3.70	-0.41	-1.26	-0.54	-1.20

Source: Author's own elaboration

The final dataset contains the logarithmic returns of BTC and EURO STOXX 50 expressed in percentages, as well as standardized macroeconomic variables with a mean of 0 and a standard deviation of 1. These transformations ensure the homogeneity of scales and allow for the interpretation of the effect of each factor in the GARCH model.

METHODOLOGY

The GARCH model, introduced by Engle (1982) and extended by Bollerslev (1986), captures volatility clustering, time-varying variance, and the link between conditional mean and variance. Asymmetric GARCH model

3.1 GARCH Framework

The GARCH(1,1) model specification is:

$$\text{Mean Equation: } r_t = \mu + \phi r_{t-1} + \varepsilon_t \quad (3)$$

$$\text{Variance Equation: } \sigma_t^2 = \omega + \alpha \varepsilon_{t-1}^2 + \beta \sigma_{t-1}^2 \quad (4)$$

GARCH(1,1) Model with t-Distribution

$$\text{Mean Equation: } r_t = \mu + \varepsilon_t \quad (5)$$

$$\text{Variance Equation: } \sigma_t^2 = \omega + \alpha \varepsilon_{t-1}^2 + \beta \sigma_{t-1}^2 \quad (6)$$

$$\text{Error Distribution: } \varepsilon_t \sim t(0, \sigma_t^2, \nu) \quad (7)$$

3.2 Incorporating Macroeconomic Variables

We extend the framework by including macroeconomic factors:

Extended Mean Equation:

$$r_t = \mu + \phi r_{t-1} + \gamma_1(\text{ECB\_ratet}) + \gamma_2(\text{M2\_growht}) + \gamma_3(\text{GDP\_growht}) + \varepsilon_t \quad (8)$$

Extended Variance Equation:

$$\sigma^2 = \omega + \alpha \epsilon_t - 1^2 + \beta \sigma_t - 1^2 + \delta_1(\text{ECB\_ratet}) + \delta_2(\text{M2\_growtht}) + \delta_3(\text{GDP\_growtht}) \quad (9)$$

RESULTS

Table 3. Descriptive Statistics of Returns:

Statistic	Bitcoin	EuroStoxx 50
Mean	12.45	1.13
Std. Deviation	43.23	8.73
Minimum	-77.01	-19.96
Maximum	118.72	20.76

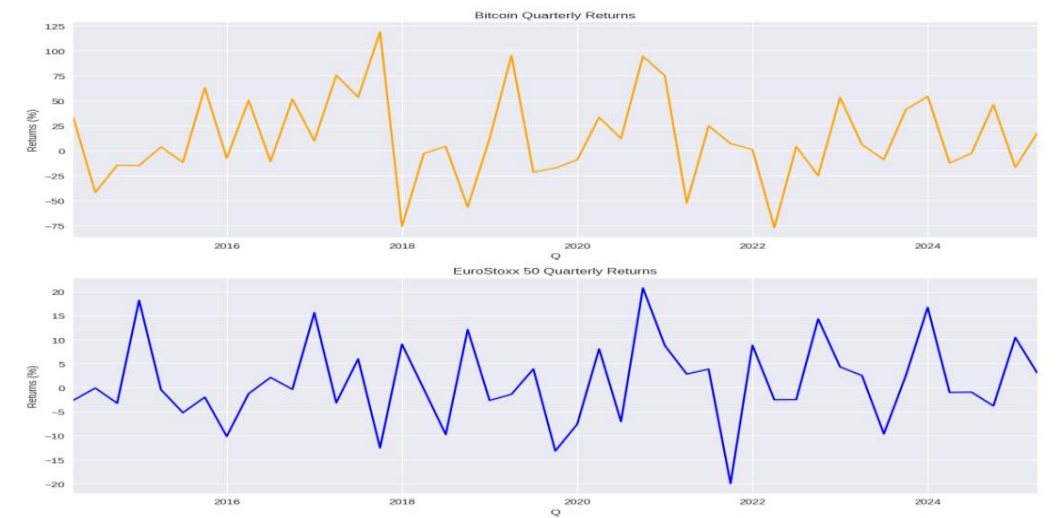
Source: Author's calculations.

Table 4. Stationarity Test Results (Augmented Dickey-Fuller Test)

Asset	ADF Statistic for re- turns	p-value	Stationary (5% level)
Bitcoin Returns	-7.0274	0,0000	Yes
EuroStoxx 50 Returns	-5.5685	0,0000	Yes

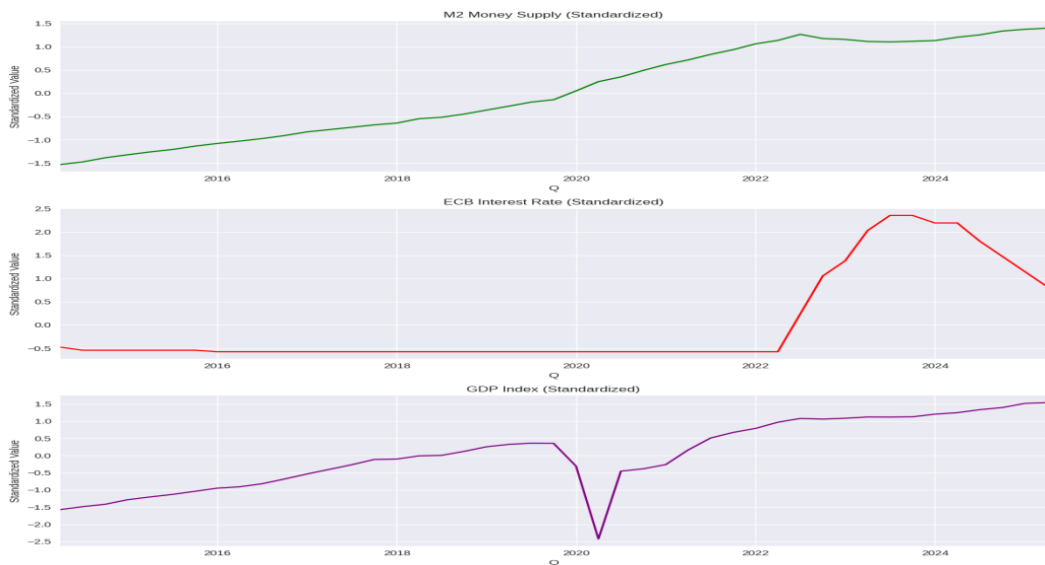
Source: Author's calculations.

Note: The null hypothesis of the test is that the series has a unit root (non-stationary).



Source: Author's own elaboration

Fig. 1. Quaterly returns



Source: Author's own elaboration

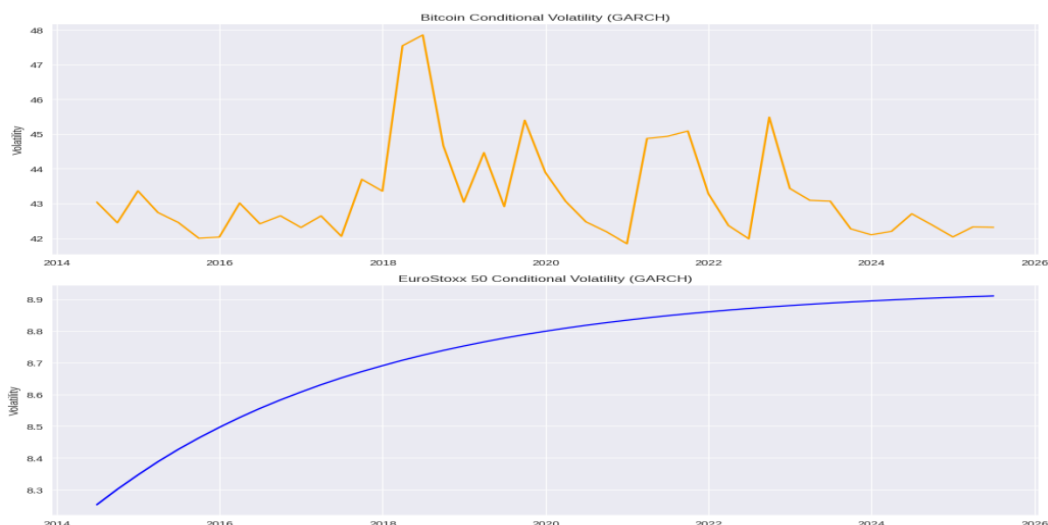
Fig. 2. Dataset Overview

Table 5. GARCH(1,1) Model Estimation Results

Parameter	Bitcoin			EuroStoxx 50		
	Coef.	Std.Err.	p-value	Coef.	Std.Err.	p-value
Mean Equation						
Constant	12.27	6.263	0.05	1.1	1.294	0.395
Variance Equation						
Omega (ω)	931.33	2858.108	0.745	5.45	10.815	0.614
Alpha(α)	0.041	0.1	0.682	~0.000	0.023	1
Beta (β)	0.46	1.505	0.76	0.932	0.168	0.000*
Model Diagnostics						
Persistence ($\alpha+\beta$)	0.5			0.93		
Log-Likelihood	-233.21			-160.64		
AIC	474.41			329.27		
No. Observations	45			45		

Source: Author's calculations.

Note: Volatility Model coef std err t P>|t| 95.0% Conf. Int.Covariance estimator: robust



Source: Author's own elaboration

Fig. 3. Conditional Volatility

Average Conditional Volatility:

Bitcoin: 43.2310

EuroStoxx 50: 8.7291

Ratio (BTC/EURO): 4.95

Correlation between Bitcoin Volatility and Macro Variables:

M2: -0.0644

ECB Rate: -0.2648

GDP: 0.0535

Correlation between EuroStoxx 50 Volatility and Macro Variables:

M2: 0.9125

ECB Rate: 0.5084

GDP: 0.8139

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ – level of statistical significance*

RESULTS AND DISCUSSION AND KEY FINDINGS

The present empirical analysis applies the GARCH methodology to examine the volatility of Bitcoin and the EuroStoxx 50 index over the period from 2014 to 2025. The results demonstrate significant differences in volatility between the two assets, as well as distinct dynamics in volatility persistence.

Comparative Analysis of Volatility

The present study finds that Bitcoin exhibits significantly higher volatility compared to the EuroStoxx 50. The analysis of conditional volatility derived from GARCH modeling shows a ratio of 4.95:1, indicating that Bitcoin is almost five times more volatile than the traditional European stock market.

Bitcoin: – Conditional volatility: 43.23% – Extreme fluctuations: -77.01% to +118.72%
EuroStoxx 50: – Conditional volatility: 8.73% – Moderate fluctuations: -19.96% to +20.76%

This study quantitatively confirms the hypothesis that cryptocurrencies represent substantially more unstable and risky assets compared to traditional stock markets. The volatility difference of 4.95:1 highlights the fundamental distinctions in the nature and behavior of digital versus traditional financial assets.

The analysis reveals significant differences in the volatility dynamics of the two assets. For Bitcoin, lower volatility persistence is observed ($\alpha + \beta = 0.50$), which suggests a faster decay of volatility shocks and a more reactive market environment. This is characteristic of young and developing markets such as the cryptocurrency market.

In contrast, the EuroStoxx 50 demonstrates high volatility persistence ($\beta = 0.93$), indicating prolonged effects of volatility shocks and stable volatility clusters. This model is typical of mature traditional stock markets, where information is absorbed more slowly and systematically.

When applying the GARCH methodology, the models did not reach statistical significance, which may be due to the limited sample size of 45 observations. This is a common issue when analyzing financial time series with short periods.

The descriptive analysis clearly demonstrates the fundamental difference in volatility between the two assets, with the ratio of 4.95:1 confirming the hypothesis of substantially higher risk associated with cryptocurrency investments.

KEY FINDINGS

1.Bitcoin exhibits significantly higher volatility (4.95 times) compared to the EuroStoxx 50, confirming the hypothesis of extreme risk in cryptocurrency markets.

2.Bitcoin shows moderate volatility persistence (0.50), characteristic of young and re-active markets, whereas the EuroStoxx 50 demonstrates high persistence (0.93), typical of mature traditional markets.

3.Bitcoin's volatility decays more quickly after shocks, while EuroStoxx 50 volatility exhibits prolonged effects from market disturbances, reflecting different levels of market maturity.

The results highlight the need for specialized risk management strategies for cryptocurrency investments, as well as opportunities for diversification between digital and traditional assets.

CONCLUSION

This study provides evidence of significantly higher volatility in Bitcoin compared to the EuroStoxx 50 and reveals differing dynamics of volatility persistence between the two markets. These findings contribute to a better understanding of cryptocurrency market behavior and its fundamental differences from traditional financial markets, with important implications for investment decisions and financial risk management in the digital era.

This study provides clear evidence of significantly higher volatility in Bitcoin compared to the EuroStoxx 50. The primary contribution of this research lies in the powerful descriptive statistics, which unequivocally demonstrate the fundamental risk differences between digital and traditional assets.

While the GARCH methodology was employed to explore volatility persistence, the models did not achieve statistical significance due to sample size limitations – a common challenge in financial time series analysis with limited observations. Consequently, conclusions about volatility dynamics and persistence patterns should be interpreted with caution.

Nevertheless, the core finding of Bitcoin's extreme relative volatility remains robust and statistically compelling based on the descriptive evidence. These results contribute to understanding cryptocurrency market behavior and highlight the need for specialized risk management approaches for digital assets, with important implications for investment strategy and portfolio construction in the evolving financial landscape.

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CHALLENGES AND SOLUTIONS IN MARKETING MANAGEMENT OF THE REGIONAL TOURIST PRODUCTS

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Abstract

On the one hand, tourist region management concepts based on strategic approach providing innovative and well co-coordinated tourism products is exceedingly important for tourism regions. On the other hand, tourist region marketing is increasingly becoming extremely competitive at a global scope. Exactly competitiveness and tourism concentration create numerous challenges and problems in the creation of consumer loyalty and sustainable competitive advantage in the tourist product in a given region. In this context, the paper aims to analyze the regional concept and attempts to synthesize challenges of integrative marketing and management of the tourist regions. Balancing the strategic aims of all interested sides and increasing total economic and focusing on unique characteristics and attractiveness of each region are the most important objectives of the integrative marketing management on a regional level. Tourist regions need to differentiate their products and develop partnerships between the public and private sector locally in order to co-ordinate delivery at a regional level. Destination marketing must lead to the optimisation of tourism impacts and the achievement of the strategic objectives for all tourist organizations. Managing a destination brand presents many challenges, and this report opens by briefly reviewing the integrative marketing management context, without pretending to be sophisticated. The central focus, this report investigates is the best practices in tourist region as the attempt to identify successful management coincide at regional level.

Keywords: marketing, management, tourist regions, regional product, challenges

INTRODUCTION

The **relevance of the topic** is due to the growing role of branding and integrated marketing management as an opportunity to promote identity, which will ensure differentiation and effective positioning of tourist areas in the minds of target tourists. The presence of a "unique image" to present the demarcated territories as tourist regions with their own names as attractive places to visit before the international communities is a prerequisite for ensuring a competitive advantage of a given tourist area. The strong competition on the domestic and international tourism market has a significant effect on the development and increase of the competitiveness of the Bulgarian tourist product, including at the level of the tourist region. The management of tourist regions creates a need for synchronized actions at all levels, directing all efforts to the creation of an innovative and specialized tourist product, providing the tourist region with the activation of domestic and international demand, differentiating the aggregate tourist product. The **significance of the problem** of promoting a regional product at the level of tourist regions and, accordingly, the positioning of the

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foreign tourist market is justified, firstly, by the fact that tourism currently provides a significant share of the foreign exchange earnings of our country, and secondly – by the existing resource potential, bordering the tourist regions and each other with the opportunities for the development of many different types of tourism reasons to make more efforts to build a more stable and recognizable brand of Bulgaria as a tourist destination for specialized types of tourism by region. The **subject of research** in this report is integrated marketing management as a process providing tools, methodologies, approaches and strategies for promoting a regional product and increasing tourist interest in tourist areas. The **object of research** is the successful concepts of integrated marketing management at the regional level, in particular tourist areas, as destination marketing is an essential part of the tourism industry and is an approach used at all levels – macro, regional, local and micro level and focuses on the advantages and offer of location to a wider audience with marketing content, which inspires and attracts tourists. The **main objective** of this study is to study and identify good practices and successful management concepts for the management of tourist areas and the development and promotion of a regional tourism product by formulating problems and proposing solutions. One of the **main tasks** in the integrated malcatering management and branding of tourist areas is the creation of a series of unique associations in the minds of the target audiences. Branding provides a framework and toolkit for differentiating, focusing and organizing competitive destinations' identities, based on truths and reality. Identity is a deliberately formed collaboration of the distinctive inherited and produced assets of the territories (WTO, Madrid 2009).

METHODOLOGY OF THE STUDY

Regional tourism policy is a complex and dynamic process that is determined by many economic and social factors. Therefore, for the purposes of this report, a mixed-methods approach is used, which allows for a comprehensive and comprehensive consideration of the problems to achieve an effective understanding of the problem under study, as well as *content analysis* and *synthesis* and *summary of information*, *comparative and analytical methods* and *expert assessment* in terms of the goals and objectives set for the implementation of this study. A *holistic approach* is also used, which is characteristic of branding and finds a place in the development of an appropriate marketing strategy for promoting a regional product, especially since branding is an "apolitical method" for propagandizing territorial identity in order to maximize revenues from international tourist visits. To achieve the goals and objectives of the study, secondary and primary information sources were used. The first category includes mainly academic publications by Bulgarian and international specialists in the field of the researched issues, statistical data from the National Statistical Institute, the Ministry of Tourism, consulting agencies, WTO, information from specialized media and current Internet sources.

Structure. The report is structured in several parts: introduction, conceptual base and methodology of the study, literature review, theoretical framework of the problem, presentation, conclusion and summarized conclusions. This study employs a mixed-methods approach to analyze integrated marketing management of regional tourist products,

combining both qualitative and quantitative techniques to ensure a comprehensive understanding of the challenges and solutions.

Data Sources. *Primary sources* (expert assessments and interviews with stakeholders in regional tourism, including municipal authorities, tourism companies, and local organizations); *secondary sources* (academic publications, statistical data from the National Statistical Institute and the Ministry of Tourism, reports from consulting agencies, World Tourism Organization documents, and relevant online sources); *methods of analysis* (content analysis and synthesis: systematic review of literature and policy documents to identify key trends, practices, and challenges in regional tourism management); *comparative analysis* (examination of different regional tourism models and branding strategies to determine best practices and areas requiring improvement); *expert assessment* (collection of professional opinions from tourism stakeholders to validate findings and propose practical solutions); *rationale* (the holistic methodology aligns with the strategic nature of integrated marketing management, allowing for a multi-dimensional evaluation of regional tourism products and so by combining empirical data with expert insights and literature review, the study identifies effective strategies for promoting regional tourism, enhancing competitiveness, and ensuring sustainable development).

A BRIEF OVERVIEW OF THE MAIN TOURIST ZONINGS OF BULGARIA AND A REVIEW OF THE LITERATURE

So far, several variants for complex tourist zoning of the country have been created. For the first time in 1968, *E. Lozanov* laid the foundations of the tourist zoning in Bulgaria and proposed a scheme of **7 regions**. Later, in 1970, *M. Bachvarov* outlined **4 tourist regions** (Black Sea, Sofia, Central, covering the Balkan Mountains, the Fore-Balkan, the Trans-Balkan fields and Sredna Gora) and the Rhodope region, dividing them into 2 types: **developed** (Black Sea and Sofia) and **developing** (Central and Rhodope). The next tourist zoning of Bulgaria was developed by a team of the Department of Geography of Tourism at Sofia University "St. Kliment Ohridski". Cl. Ohridski" headed by *L. Dinev* in 1973, which separated **7 main tourist regions**: (Danube, Stara Planina, Sub-Balkan-Srednogorski, Rila-Pirin, Rhodope, Vitoshka-Osogovo and Black Sea). In 1974 *L. Dinev* proposed a more detailed division (main tourist region, tourist region, tourist microregion, tourist localization, tourist core and tourist site). In 1996 *M. Bachvarov* and *Tsv. Tonchev* proposed their scheme of **2 resort-tourist regions**: developed (Sofia, Plovdiv and Black Sea) and developing. Only three regions are defined as developed – Sofia, Plovdiv and Black Sea. Much later, in 2004, *M. Asenova* developed some theoretical issues on the problems of tourist zoning. In 2008, *D. Donchev* and *M. Pengerliev* presented their views. In October 2008, the State Agency for Tourism established a regional scheme under the project "National Strategy for Sustainable Development of Tourism in Bulgaria" of **8 tourist regions** (Sofia, Rila-Pirin, Rhodope, Thrace, Black Sea, Old Bulgarian Capitals, Stara Planina and Danube), and later the Black Sea region was raised to the Northern and Southern Black Sea coasts and currently Bulgaria is divided into **9 tourist regions**. that are large enough to be clearly recognizable on the tourist map and small enough to be managed effectively. The

concept for tourist zoning of Bulgaria was developed in 2014 by order of the Ministry of Economy and Energy, in direct connection with the implementation of the new Tourism Act of 26.03.2013, which for the first time in our country regulates the the creation of tourist regions for the purposes of regional marketing and tourism management at regional level. (Karailieva, 2018) **In Bulgaria**, the problems related to tourist zoning have not yet been thoroughly researched, but theory and practice continue to develop in this direction by modeling innovative approaches to specialized types of tourism and new models for successful functioning and promotion of tourist regions of Bulgaria, leading to the sustainability of tourism and the promotion of the country as a tourist destination. (Tsonev et al., 2023)

Among the native researchers in this field and modern concepts of tourist regions, the views of *M. Grozeva, V. Marinov, P. Evrev, E. Dogramadzhieva, M. Asenova, M. Yaneva, E. Velikova, N. Tsonev, S. Kaleichev, A. Pandjerova* and others.

THEORETICAL FRAMEWORK OF THE PROBLEM

Tourism management at regional level cannot be considered separately from the tourism industry and the environment in which tourism develops and must be synchronized in accordance with the norms and requirements of the countries of the European Union, the adopted documents of the World Tourism Organization, the mechanisms of the free market economy, which is based on competition. At present, the management and marketing of tourist regions (Karailieva, 2017), together and separately, face a number of problems and challenges due to the interests of all levels of tourism management. *On the one hand*, the management of tourist regions is based on coordinated actions at all levels, directing all efforts towards the creation of an **innovative and specialized tourist product**, providing tourist regions with the activation of domestic and international demand, differentiating an **integrated tourist product**.

On the other hand, marketing should be aimed at the sustainable development of each tourist region as an attractive and competitive year-round tourist destination on the domestic and international markets. The product diversification of each tourist region should be based on **research** and identification of the unique tourist needs for the specific region as a specific geographical and socio-cultural region. The measurement of tourist satisfaction should logically become the standard for strategic control and business success. It should be perceived as part of a **socially-oriented marketing strategy**.

Therefore, the synchronization of the strategic goals of all stakeholders in tourism, increasing the overall economic benefits and maintaining the sustainability of tourist resources, focusing on the uniqueness and attractiveness of each tourist region, are some of the most important goals of integrated marketing management at the regional level.

REGIONAL TOURISM INTEGRATION

Modern tourism management at regional level, based on a *strategic approach*, providing differentiated according to the specialization of the tourist region, innovative and effectively coordinated actions at all levels, is of utmost importance for the development of the tourist region. **Integrated planning**, as an indisputable value of the scientific and synthesis approach in management, should ensure the complex treatment of all problems on the territory in the tourist region, on the basis of unified regional and sectoral planning, by coordinating the socio-economic and spatial planning and thus balancing the use of the potential of resources, incl. and the tourist ones. In this context, **integrated management** in its synergistic paradigm requires the management of tourist regions not only to introduce requirements and restrictions for tourism companies operating on the territory, but also to coordinate mutual interests between them. Of course, this process should be regulated by explicit agreements between the parties, but its implementation should find a place in joint activities. Therefore, an essential element of the **integrated management algorithm** (Rizova, 2021). should be the preparation and coordination of situations that can be defined as bifurcation, i.e. those in which the established balances of interests are disturbed. Despite the difficulties in predicting the future, especially in an area such as tourism, the management of tourist areas must start from a long-term perspective when establishing its relations with commercial entities, from plans that go *beyond the "horizon"* of a particular season or year.

A frequently used **marketing approach to promote and promote tourism and the tourist destination** at the regional level are the so-called **strategic alliances**, which are defined as "an association with strategic goals between tourist destinations in a given region/region, branch organizations of the tourism industry, individual businesses, local and regional authorities, etc. with a view to building a common regional brand and achieving through complementarity a common competitive advantage through sustainable development of tourism in the region." (Atanasova, 2019). The main functions of strategic alliances are related to the development of a **long-term strategy for the promotion and development of tourism in the specific region**; protection of the interests of tourist companies in the region; collecting information regarding the number of tourists, visited places and attractions in the area, etc., as well as promoting the tourist destination, through various initiatives with the local government or other strategic alliances is the branding of a tourist destination in order to gain popularity, as a way to attract more tourists and visitors. Therefore, the strategic objectives of each tourist region must be coordinated with the objectives of the business stakeholders in creating **value added** for tourists, as well as in the long term by the interests of the social society. Their development depends on integrated management and on the relationships at all levels with regard to tourism and reflects on the overall strategic goals for tourism development. These opportunities and their realization are extremely important and serve as a basis for making management decisions related to the ability of the tourist region to build a comprehensive and long-term vision of its tourism activity, in connection with the dynamically changing market conjuncture and to offer the market a **competitive regional tourist product**. This is achieved by improving the tourist infrastructure and conducting an effective marketing policy.

NEED FOR INTEGRATED MARKETING MANAGEMENT OF TOURIST AREAS

The competitiveness of a particular territorial unit (tourist region) is based on its positions in terms of resources, technologies, products and capacities. To a large extent, it is determined by the ability of individual entities, including business (companies specializing in tourism activities), institutional (state bodies) and territorial (local municipalities) for rapid adaptation, oriented towards the absorption of opportunities arising from a change in the environment in which tourism develops.

The development of sustainable tourism in a country begins with the creation of conditions for the development of tourism at regional level, aiming to provide a **tourist practice** that satisfies the interests of all stakeholders. (Karailieva, 2020). The **integrated platforms for marketing of tourist regions** will contribute to adequate information of the target groups on the territory, integration by individual activities, coordination of investment activity of individuals and legal entities, offering complex offers, promoting public-private partnerships and promoting regional tourism products and brands.

Realizing the importance of **the image of the tourist area** is of great importance for strategic management. Tourists perceive a destination (in particular a tourist area) as a **brand**, which in turn requires a constant transition from rational-focused branding to emotionally-focused branding. (Lindstrom M., Ph. Kotler, 2005). A strong tourist brand is image and recognizable, creating a sense of quality and trust in tourists. Therefore, the **product diversification** of the tourist region is based on research and identification of the unique tourist needs of the specific destination as a specific geographical and socio-cultural region.

Strategic vision in the management of tourist regions can be achieved through the **approaches of marketing management** – marketing-management, which in turn leads to economic and social transformations in the tourism business. (Atanasova, 2018) A wide range of activities are subject to **integrated marketing** management of destinations: activities supporting the development of regional products and market information, advertising activities, introduction of modern technologies and information systems in order to improve information services, marketing and planning of tourist destinations, support for public awareness activities and information services for local businesses and communities.

For sustainable socio-economic development of tourist areas, therefore, it is necessary to apply **marketing tools** that are oriented in the following **directions**: *product development* in accordance with consumer preferences, resource potential and comparative advantages of the territory; *stimulation of marketing investments* in the production and sale of products that are distinguished as "traditional" and "emblematic" for the territory; *coordination of marketing activity* in the territory (Braun, 2008); promotion of the tourist area; building *integrated platforms* for the development of marketing of tourist regions, etc.

The development of tourist regions largely depends on the overall marketing efforts of individual entities with certain social and economic interests. The main prerequisites for the **transition from independent to integrated marketing of territories** (Tonkova, 2012) are as follows: the practice of self-marketing is not able to ensure the target effectiveness of the respective entity; the territory is characterized by a complex system of interconnections, which requires the study of a direct effect and a transfer effect of marketing activity; unsuccessful investment projects in conditions of unbalanced investments on the territory;

possibility for institutionalization of marketing departments in municipalities; upcoming opportunities for the development of public-private partnership, which will give a new impetus to the sustainable socio-economic development of the territories; the general concern for environmental protection and preservation of comparative advantages of tourist areas.

The benefits for municipalities are expressed in the following: efficient use of tourist resources; promotion of tourist products on the territory among the target segments; increasing the investment attractiveness of the territory; increasing the basic and generating additional revenues for municipalities; enhancing the image of the settlement and strategic management of the territorial brand (Stanciulescu, 2009); increasing the competitiveness of the territory; multiplication of successful practices for balancing the investment activity on the territory and absorption of a synergistic effect for the development of municipalities; increasing the efficiency of event management and marketing, etc.

RESULTS AND DISCUSSION

The analysis of integrated marketing management of regional tourist products highlights both challenges and practical solutions for enhancing competitiveness and sustainability:

Firstly, Regional Differentiation and Branding. The analysis of integrated marketing management of regional tourist products reveals several key findings that underline both the challenges and potential solutions for effective regional tourism development. The research shows that tourist regions that emphasize their unique cultural, historical, and natural assets achieve stronger brand recognition among target audiences. Regions with clearly defined identities are better able to attract both domestic and international tourists, creating a competitive advantage. However, inconsistent branding and lack of cooperation among stakeholders often hinder the effective promotion of regional tourist products. Strategic alliances between public and private entities, as well as coordinated marketing campaigns, are critical for overcoming these challenges.

Secondly, Public-Private Partnerships and Coordination. The study confirms that integrated management and cooperation between municipalities, tourism companies, and regional authorities are essential for sustainable tourism development. Regions with structured partnerships report better synchronization of activities, optimized resource use, and more effective marketing communication. The results indicate that without institutionalized frameworks and clearly defined responsibilities, individual efforts remain fragmented, reducing the overall impact of regional marketing strategies.

Thirdly, Tourist Experience and Product Diversification. Regions that invest in product diversification and experiential tourism, such as thematic routes, cultural events, and gastronomy – demonstrate higher tourist satisfaction and repeat visits. This finding supports the theoretical framework that emphasizes the importance of a consumer-focused approach in integrated marketing. It also highlights the necessity for continuous monitoring of tourist behavior and preferences to adapt regional offers effectively.

Fourthly, Challenges in Information and Communication. The results highlight a persistent gap in the use of modern digital marketing tools and integrated platforms for tourist information. While some regions utilize online channels effectively, others lack

coordinated digital presence, leading to missed opportunities in reaching target markets. The discussion points to the need for investment in digital marketing, data-driven strategies, and coordinated online platforms to increase visibility and competitiveness.

Fifthly, Strategic Management and Long-term Planning. The findings suggest that regions with a long-term strategic vision, incorporating both economic and social goals, are more successful in maintaining sustainable development. The discussion emphasizes that integrating marketing management with regional development plans and stakeholder alignment ensures that tourism growth is balanced, socially responsible, and economically beneficial.

In summary, the results indicate that the successful implementation of integrated marketing management at the regional level requires a combination of strategic planning, stakeholder collaboration, effective branding, product diversification, and modern marketing practices. Addressing these areas can significantly improve the competitiveness of regional tourist products, ensuring sustainable growth and enhanced tourist satisfaction.

CONCLUSION

This **study** demonstrates that integrated marketing management is a key factor for the successful promotion and development of regional tourist products. The main research question – how regional tourism can be effectively managed and marketed to enhance competitiveness has been addressed by identifying critical challenges and practical solutions. These include coordinated public-private partnerships, differentiated branding, product diversification, and strategic use of digital marketing platforms. The **findings** offer several opportunities for further research, such as evaluating the long-term effectiveness of destination branding, assessing the impact of digital marketing tools on tourist behavior, and analyzing stakeholder collaboration in emerging or less developed tourist regions. The **originality** of this study lies in synthesizing both theoretical and practical aspects of integrated marketing management at the regional level, highlighting actionable strategies for improving tourist experiences and regional competitiveness. The relevance of the results is significant for policymakers, tourism managers, and destination marketers, providing evidence-based recommendations for sustainable tourism development and the creation of competitive regional tourist products. In response to the main **research question**, this study demonstrates that integrated marketing management of regional tourist products is essential for enhancing competitiveness, ensuring sustainable development, and increasing tourist satisfaction. The analysis confirms that successful regional branding, coordinated public-private partnerships, product diversification, and strategic use of digital marketing tools significantly improve the performance of tourist regions. The **results** highlight several opportunities for further research, including the assessment of digital marketing effectiveness in regional tourism, the role of stakeholder collaboration in emerging tourist regions, and the long-term impact of destination branding on tourist loyalty and economic growth. The originality of this study lies in synthesizing challenges and solutions in the integrated marketing management of regional tourist products, focusing specifically on the practical application of strategies at the regional level. The relevance of the results is evident for both

policymakers and practitioners, providing actionable insights for promoting regional tourist destinations, optimizing resource use, and strengthening the overall competitiveness of the tourism sector.

In summary, the main **problems** related to integrated marketing management of tourist regions can be minimized by creating a *common vision* for synchronized management and innovation activity at regional level and integrated marketing of the territories in the direction of developing and offering a competitive regional tourist product, taking into account the new trends in demand and the change in tourist behavior.

So, **solutions** to some of the problems can be sought in the following directions:

Firstly, activities supporting the development of regional products and tourist information – advertising activities, organization of events with regional and national scope and impact;

Secondly, activities for the introduction of *integrated marketing of destinations* in order to improve the information services, marketing and planning of tourist destinations in the individual municipalities, packaging of tourist attractions in the region;

Thirdly, activities related to profiling and creating a *regional identity* and *brand* of the tourist region;

Fourthly, marketing of an *integrated regional tourist product* at the regional level, highlighting specific and unique characteristics of tourist products and services in the direction of *imposing a tourist region as attractive for tourism*, profiling and building a strong tourist brand;

Fifthly, increasing *tourist culture* and provoking *tourist interest* through a strong advertising campaign, creating conditions for organizing special events, focusing efforts on international marketing, PR and advertising of S&P and many others.

In **conclusion**, the results demonstrate that successful regional tourism management depends on coordinated branding, stakeholder collaboration, product diversification, strategic digital marketing, and long-term planning. Implementing these approaches strengthens regional competitiveness and supports sustainable development.

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FINANCIAL STABILITY IN THE INSURANCE SECTOR

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Abstract

The global pandemic COVID-19 had significant repercussions on numerous industries worldwide. We examine the side effects of the COVID-19 pandemic on the operational and financial outcomes of insurance firms operating in Albania. The selected sample consists of twelve insurance firms of the Albanian insurance market for nine years, from 2013 to 2021. This research is based on secondary data from the financial statements of both life and non-life insurance companies and investigates how performance, as the most important indicator of financial stability, is affected by different factors. Our findings show that the COVID-19 pandemic, the capital ratio, and the profitability significantly influence insurance firms' Return on Assets (ROA).

Keywords: COVID-19, Insurance industry, Performance

JEL Classification: G2. G22

1. INTRODUCTION

This study evaluates the determinants influencing the financial stability of insurance firms operating within the Albanian market. Performance is considered one of the most vital and significant determining factors. The insurance sector in Albania assumes a significant role in fostering economic growth and supporting the financial system. *“The insurance sector must deal with challenging market conditions and maintain operations while at the same time protecting employees and policyholders”* (EIOPA, 2020). The impact of insurance markets and financial institutions on individuals' lives is significant as they serve as intermediaries facilitating risk transfer through diversification.

The insurance sector in Albania is relatively nascent. Before 1991, there were no insurance companies in operation within the country. However, at present, there exist twelve distinct Life and Non-life insurance companies. The insurance industry in Albania is subject

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to different laws and regulations and is overseen by the Albanian Financial Supervisory Authority (AFSA). The AFSA implements the European Union (EU) directives and regulations as set forth by the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA) to enhance and maintain financial stability. Over the past decade, considerable research has been conducted on the insurance market concerning matters of risk and performance. Examining these enterprises' economic viability and potential risks over the past decade in Albania holds paramount significance. The examination of various variables impacting the operational efficacy of non-life insurance companies has been extensively investigated in prior academic research. This research also incorporates life insurance companies, thereby offering a comprehensive depiction of the overall financial solidity of the sector.

This study investigates the performance of companies within the industry sector through the utilization of Return on Assets (ROA). Examining vital financial indicators, such as Return on Assets (ROA), Liquidity, the impact of COVID-19, the capital ratio, equity ratio, Profitability, Leverage, and Current Assets ratio, will afford us enhanced comprehension regarding the performance of these companies. Two hypotheses have been formulated to examine the statistical significance of selected variables for nine years (2013-2021), encompassing non-life and life insurance entities.

The empirical findings illustrate that implementing the lockdown measures harmed the insurance industry and affected its performance, which is concerning given its crucial role in ensuring financial stability.

The limitations of this paper were that some insurance companies only had economic activity for some years, the financial statements of some firms have different structures, and sometimes, data is difficult to find.

2. LITERATURE REVIEW

2.1 Background of the insurance sector

The first evidence of Albania's insurance sector development is found before World War II. However, following the change of the communist regime in the 90s the flourishing of the insurance sector marked its beginning. In a decade of privatization, buying and selling, old investors leaving the country, and new ones exploring opportunities, regulators setting the pace for business activity, we find today the insurance sector hosting both life and non-life insurances and offering a variety of products to the market. According to (Sherifi, 2015), the most significant changes in the industry were noticed after the market liberalization and regulation, the real estate development, and the introduction of new insurance products, which consequently attracted more capital.

There are 12 insurance companies in Albania of which 6 are non-life insurance companies; 2 offer life insurance, and 2, INSIG and Albsig, offer both non-life and life insurance. One company possesses a valid license to provide reinsurance services, and four insurance companies operate beyond the borders of Albania in various foreign countries. According to Madani et al. (2014), INSIG, SIGMA, and SIGAL are operational in Kosovo and Macedonia, while ALBSIG exclusively operates in Macedonia. The Financial

Supervisory Authority is the supervisory and regulatory entity overseeing insurance financial markets to safeguard consumers. Furthermore, its objective is to uphold stability and transparency within the insurance sector.

According to the AFSA's report, the Sigal Uniqua Group Austria emerged as the predominant entity within the life insurance industry in 2021, with a market share of 52.74% (see Figure 1). The following figures show the respective percentages of Sicred sha at 19.54%, Insig Life sha at 15.25%, and Albsig Life sha at 12.47%. Albsig Life Sha emerged in 2019 as a recent addition to the life insurance industry, thus leading to its limited market share. However, when evaluating Insig Life and Sicred, it is evident that Sicred is experiencing rapid growth within the market. Non-life companies as presented in Figure 2 show as a primary market player for 2021 Sigal Uniqua Group Austria, holding a share of 25.6%. The second highest percentage is attributed to Albsig with 18.69%. Following closely in the third position is Sigma Interlbanian Viena Insurance Group, with 13.02%. Similarly, Eurosrig also secures a comparable percentage of 13.01%. Intersig Viena Insurance Group holds a stake of 9.8%, the highest among market participants. Comparatively, Insig sha possesses the smallest share at 9.62%, followed by Atlatik sha at 6.55% and Ansrig sha at 6.41%.

Figure 2 depicts the graphical representation of Return on Assets (ROA) for the past five years. The year 2020, characterized by the global pandemic, demonstrates an elevated ratio, however, the actual impact is observed in 2021 when the profitability of insurance entities declines. Despite the onset of the pandemic in March 2020, its impact endured throughout 2021. During this period, a decline in net income was observed across all companies.

According to Figure 2, the volume of gross written premiums during 2020 was ALL 16.6 billion, a decrease of 5.73% compared to 2019. Gross written premium income decreased in Life Companies due to not re-signing some contracts in combined life insurance. In non-life companies, the revenue was reduced from the compulsory motor insurance, Green Card, and Border Insurance portfolios; because of the COVID-19 pandemic, the movement of motor vehicles outside the border was prohibited. During the year 2021, the volume of gross written premiums generated was ALL 19.3 billion, or an increase of 16% compared to 2020. Gross written premiums increased by 22.74% in the Life companies compared to 2020, mainly due to the number of contracts in Debtor life insurance, by nearly 82.23% of the total increase in life insurance premiums. In non-life companies, gross written premiums increased by 15.5% compared to 2020 due to the compulsory motor vehicle insurance portfolio, about 53.8% of the total increase of non-life insurance premiums.

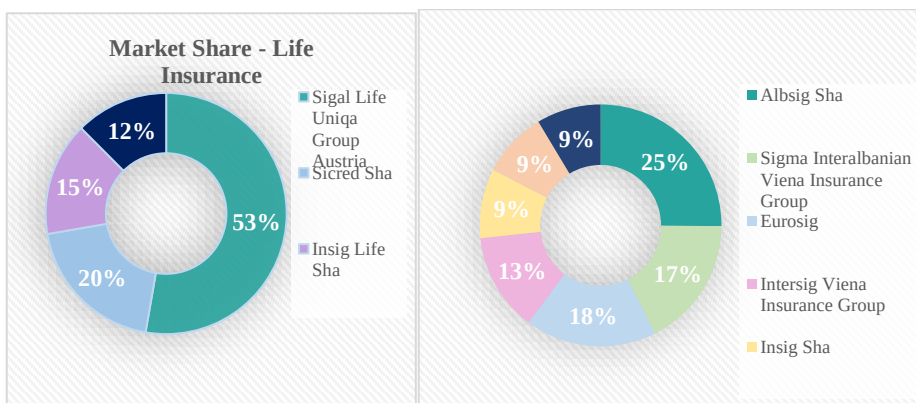


Fig. 1. Market share – Life insurance and Non-Life Insurance.

Source: Albanian Financial Supervisory Authority, 2021

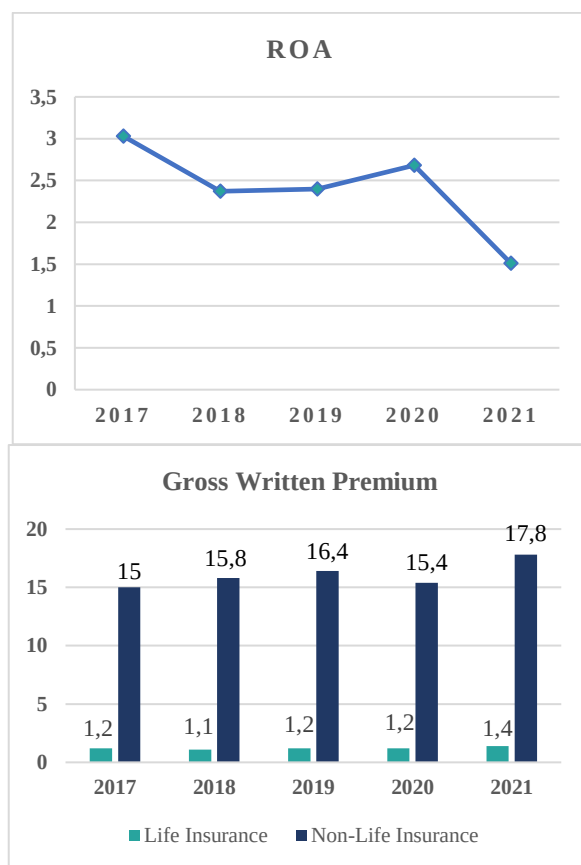


Fig. 2. ROA and Gross Written Premiums

Source: Albanian Financial Supervisory Authority, 2021.

2.2 Measuring the performance and risk

The performance of insurance companies significantly boosts overall economic growth in addition to having a beneficial impact on the market value of the businesses. It is essential to evaluate the development of this industry and to identify the common problems that this sector faces. This contributes to the interpretation and analysis of data that managers may use to assess performance levels and offer insights into strengths and shortcomings. Three important aspects define the performance of the insurance companies as seen in the literature: profitability, the level of receivables and their efficient management, and the risk that they are willing to undertake.

According to Burca and Batrinca (2014), profitability attracts investors, enhances solvency, and consequently builds the trust and assurance of customers. The significance of financial information is embedded in the financial statements of all enterprises. Investors from both developed and developing markets undertake different investments by relying on comprehensive financial information found in these financial statements and subsequently driving economic expansion. "Thus, one of the objectives of the management of insurance companies is to attain profit as an underlying requirement for conducting any insurance business" (Lee, 2014).

The financial success of a business depends on many factors, and it is imperative to use economic indicators and assess how well organizational objectives are being accomplished. These metrics are used to evaluate the performance of the business, help improve financial skills, and find investment possibilities in a variety of industries. By successfully satisfying stakeholder needs, these metrics support the business's success (Mansur, 2003). As such to evaluate the performance of insurance companies, the Return on Assets (ROA) in combination with various independent variables is tested.

Tauringana and Afrifa (2013) observed that insurance companies could withhold claims if their receivables were not effectively managed, thus suggesting that the management must prioritize the collection of outstanding debts. The receivables play a substantial role in working capital management and influence the overall performance of a firm. It should be noted also that the collection of receivables can often be heavily influenced by external factors related to the organization.

The financial risk faced by insurance companies includes the risk from the economic interaction between the insurance companies and their policyholders, as well as with other companies and individuals, in addition to the execution of various financial transactions. This risk is characterized by probabilities, capital losses, financial reliability, and reduction of income. (Neronya et al., 2018; Häusler, 2004). To evaluate risk, insurance companies apply Z-scores and Solvency II requirements. The Albanian market is not encompassed within the provisions of Solvency II. Consequently, the information derived from the financial statements solely comprises the solvency requirements dictated by the Albanian legislation governing insurance companies. The financial statements of insurance companies included a specific mention of Solvency Margin as determined by legal requirements.

Pulawska (2021) studied the effect of COVID-19 on insurance companies in Belgium, France, Germany, Italy, and Poland. Using quarterly data before and during the pandemic with a fixed effects model the analysis of performance and risk was conducted for 10 years. The research showed a positive and significant relationship between life insurance and

economic growth in the long and short term for all analyzed countries. During the pandemic period, in these countries, legislators discussed allowing the insurers and reinsurers to consider schemes that transferred insurance risk to the government. The estimation results of the European countries demonstrate that the COVID-19 pandemic negatively affected the insurance sector's stability, while it was noticed that the COVID-19 pandemic did not have any effect on the Z-score ratio. The estimation results demonstrated that the COVID-19 pandemic increased the value of receivables in insurance companies.

Morara and Sibindi (2021) find a positive relationship between the financial performance and the size of insurers, measured by their total assets. Moreover, the findings indicate that performance is inversely correlated with age in terms of the time the insurance company has been active in the market. Finally, the study demonstrates a positive correlation between the insurer's financial performance and investment returns as such insurers ought to optimize their returns via the implementation of prudent investment strategies.

Tomislava et al. (2017) examine the insurance industry in Eastern European countries in their research. This study looks at how the performance of the insurance markets in a few selected Central and Eastern European nations is affected by macroeconomic, industry-specific, and insurance company-specific factors. The empirical results demonstrate a strong and significant relationship between the performance metrics of the Return on Equity (ROE) and Return on Assets (ROA) models and the lagged age variable, which represents the number of years an insurance firm has been in operation. According to these findings, businesses that have been on the market for a longer time do better. Furthermore, the macroeconomic variable of real GDP per capita growth has a significant and favorable effect on performance, but only when seen in relation to the return on equity (ROE). This result suggests that enhancing insurance performance requires favorable macroeconomic conditions. Therefore, a mix of macroeconomic factors and insurance company-specific factors affect an insurance company's profitability.

In continuance to the above, the elements affecting the financial performance of insurance businesses in the UK are examined by Jadi (2015). This study uses empirical data to show that organizational structure, size, liquidity, and profitability all have statistically significant effects on the financial performance of insurance businesses in the UK. This study suggests a different method for determining an insurance company's size by using the gross premium written metric. Additionally, this study explores how the global financial crisis has affected insurance companies' financial performance. The study's findings demonstrate a significant difference in rating performance between the pre-crisis and post-crisis eras. According to this study, several critical factors, including profitability, liquidity, company size, and organizational structure, have an impact on the financial success of businesses that participate in FSR. Notably significant are the performance disparities between the financial and post-financial crisis eras.

This paper tries to define the factors that have influenced the performance of insurance companies over the past decade. Previous research papers have examined the impact of various independent variables on insurance companies, such as the COVID-19 pandemic, firm size, leverage, profitability, liquidity, equity ratio, and capital ratio. Based on previous research we raise two hypotheses and test them with two models including Return on Assets (ROA) and Receivables to Total Assets. Our hypotheses are as below:

H₁: Insurance companies' performance is better during a pandemic than before it.

H₂: Insurance companies have a more significant receivables position during a pandemic than before.

Summarizing the above, we can say that defining the insurance companies' performance factors is crucial in determining their management and their stability during turmoil and economic shocks.

3. DATA AND METHODOLOGY

To empirically examine the performance of insurance companies, we collected data from the "National Business Center," which is a mandated platform for insurance companies to disclose their financial statements and to promote transparency to the public. The panel data set employed in this study encompasses from 2013 to 2021. The study analyzes the financial data obtained from the annual financial statements of twelve insurance companies operating in Albania. This implies that all three periods are considered, including the pre-pandemic, pandemic, and post-pandemic years. Data was gathered from both life and non-life insurance companies in Albania, specifically focusing on the impact of business interruption on insurance coverage and the challenges insurance companies faced during the initial lockdown period.

According to Bowerman et al. (1990), regression analysis is a statistical method for establishing relationships between variables. According to Draper and Smith (1981), a standard definition for a regression model entails a singular algebraic equation in the form specified. *Multiple linear regression* is a statistical technique employed to model the relationship between two or more explanatory variables and a response variable by establishing a linear equation based on the observed data. Multiple regression analysis is a suitable statistical technique in cases where a significant correlation exists between the dependent and independent variables. This research uses two regression analyses.

This study examines the association between Albanian insurance companies' performance, as the ROA measure indicates, and various independent variables, including COVID-19 impact, capital ratio, profitability, and leverage. According to Boyjoo and Ramesh (2017) and Kusi et al. (2019), the Return on Assets (ROA) metric provides a measure of a company's asset profitability concerning its peers within a given industry. Furthermore, the correlation between the dependent variable Receivables to Total Assets is assessed by examining the value of receivables after the fiscal year concerning the overall assets. This analysis also considers various independent variables such as capital ratio, leverage, profitability, long-term debt, liquidity, and the impact of the COVID-19 pandemic.

The following models are used:

$$ROA_{j,t} = \beta_0 + \beta_1 \text{COVID-19pandemic}_t + \beta_2 \text{Size}_{j,t} + \beta_3 \text{FinLeverage}_{j,t} + \beta_4 \text{Profitability}_{j,t} + \beta_5 \text{Liquidity}_{j,t} + \beta_6 \text{EquityRatio}_{j,t} + \beta_7 \text{CapitalRatio}_{j,t} + \varepsilon_{i,t} \quad (1)$$

$$\text{Receivables/Total Assets}_{j,t} = \beta_0 + \beta_1 \text{COVID-19pandemic}_{j,t} + \beta_2 \text{Size}_{j,t} + \beta_3 \text{FinLeverage}_{j,t} + \beta_4 \text{Profitability}_{j,t} + \beta_5 \text{Liquidity}_{j,t} + \beta_6 \text{EquityRatio}_{j,t} + \beta_7 \text{CapitalRatio}_{j,t} + \varepsilon_{j,t} \quad (2)$$

where: the dependent variable is $ROA_{i,t}$ (Return on Asset) which measures the performance in insurance company i at time t . In the second model, our dependent variable is receivables to the total asset in insurance company i at time t . $Covid19\text{-}pandemic_{j,t}$ = Dummy variable with values 0/1. $Size_{j,t}$ = Natural Logarithm of Assets. $FinLeverage_{j,t}$ = Long term Debt/Total Assets. $Profitability_{j,t}$ = Logarithm of Net Income. $Liquidity_{j,t}$ = Current Assets/ Total Assets. $EquityRatio_{j,t}$ = Equity / Total Assets. $CapitalRatio_{j,t}$ = Capital/ Total Assets. $\varepsilon_{j,t}$ = error term.

A binary variable having values of 0 or 1 is used to assess the effect of the COVID-19 pandemic on insurance firms. A panel data analysis was executed to examine the hypotheses' validity. This study employs a fixed-effects model to conduct the regression analysis, where the model parameters remain fixed throughout the research. According to Wooldridge (2013), this model facilitates the incorporation of unobserved heterogeneity among companies concerning their policies, standards, or financial reporting developments. One notable benefit of employing the fixed-effect model is effectively accounting for firms' unobserved characteristics. The selection of the model under the existing specification is determined by Hausman's (1987) specification test.

4. RESULTS

The regression analysis is conducted, encompassing all the independent variables. The Rate of Return on Assets (ROA) is the dependent variable, while the independent variables consist of COVID-19, capital ratio, leverage, and profitability. According to the model summary generated in Table 1, the coefficient of determination (R-squared) is determined to be 0.53 indicating that the independent variables account for 53% of the variation in the dependent variable.

Table 1. Fixed effects panel regression analysis.

Dependent variable ROA	Model (1)
Intercept	-78.71***
	(-5.50)
Covid-19	-11.33***
	(-4.30)
Capital_Ratio	0.0487**
	(2.42)
ProfitabilityLogNI	5.023***
	(6.55)
LeverageLongtermDebtTotal	0.00894
	(0.16)
Observations	80
R-squared	0.53
Time fixed effects	Yes
Industry FE	Yes

t statistics in parentheses
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

According to the results above, COVID-19 decreased the average ROA by 11.33 times, and these results are highly statistically significant. Lockdowns because of the COVID-19 pandemic negatively impacted the insurance sector, which confirms the first hypothesis. The capital ratio positively impacts the ROA, with a value of 0.0487, which is statistically significant. Profitability has a value beta of 5.023, which is highly statistically significant and positively impacts the performance of companies. Leveraging long-term debt with a Beta value of 0.00894 positively impacts the insurance companies' performance, but it is not statistically significant.

Table 2. Fixed effects panel regression analysis.

Dependent variable Receivables to Total Assets	Model (2)
Intercept	12.94
	(0.90)
Covid-19	0.470
	(0.20)
Capital_Ratio	-0.105***
	(-3.21)
Equity_Ratio	0.179**
	(2.13)
ProfitabilityLogNI	-1.339*
	(-1.99)
LeverageLongtermDebtTotal	0.0655
	(0.82)
LiquidityCurrentAssetsTotal	0.574***
	(7.72)
Observations	80
R-squared	0.45
Time fixed effects	Yes
Industry FE	Yes

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2 shows the results of the second model, where Receivables to Total Assets is the dependent variable, and the independent variables are: COVID-19, capital ratio, equity ratio, liquidity, leverage, and profitability as independent variables. In the model summary, the value of the R-squared is 0.45. meaning that 45% of the total variation of the model is explained by independent variables.

Testing Hypothesis 2, the estimation results demonstrate that the COVID-19 pandemic has a positive impact of 0.047, which is not statistically significant, indicating that the pandemic has not affected the receivables of the insurance companies. Moreover, the Capital Ratio shows a negative effect of -0.105 times in Receivables, which is statistically significant. Equity Ratio had a coefficient of 0.179, which is statistically significant. Profitability demonstrates a negative effect by -1.339 points and is statistically significant. Leverage has a positive coefficient of 0.0655, but it is not correlated and does not impact receivables.

Liquidity demonstrates a positive coefficient of 0.574 times and is highly statistically significant based on the p-value. It increases Receivables by 0.574 points. The second hypothesis is rejected because the COVID-19 pandemic does not affect Receivables to Total Assets. However, our study was only for one year after the pandemic, so it may have indications in the long run. Liquidity was a significant indicator of receivables, with a coefficient equal to 7.72.

5. CONCLUSION

In conclusion, it is essential to comprehend and assess the performance of insurance firms under normal and special circumstances and their susceptibility to various external factors. This paper presents an empirical framework that examines the factors influencing the financial performance of insurance companies in Albania, as assessed through the metrics of Return on Assets (ROA) and Receivables to Total Assets during the COVID-19 pandemic. This study utilizes secondary data from the financial statements provided by a sample of twelve insurance companies operating in Albania from 2013 to 2021. Considering the results shown in the previous session we can conclude that:

1. Return on Assets is explained at a level of 53% by the independent variables and is positively and significantly affected by COVID-19, which makes hypothesis 1 accepted. Other variables that are significant and affect ROA include capital ratio, profitability, and leverage.

2. Receivables to total assets are explained at a level of 45% by the independent variables and are positively but not significantly affected by COVID-19, which makes hypothesis 2 rejected. Other variables that affect receivables significantly include the capital ratio, the equity ratio, the profitability, and the liquidity.

The above results are in line with previously reviewed literature that shows that COVID-19 besides other factors has a negative effect on the profitability of insurance firms. As such cautiousness and special actions should be undertaken by insurance firms to manage these situations. More importantly, considering other operational variables, the management of insurance companies can adjust its policies and decision-making process to better align and support the increase in performance. In this way, financial stability and growth are ensured and sustained.

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SECURITY AND PRIVACY IN CLOUD COMPUTING

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Abstract

Cloud computing has emerged as a transformative technology, enabling organizations and individuals to access scalable resources, reduce infrastructure costs, and improve operational efficiency. Despite these advantages, security and privacy remain critical challenges that hinder broader adoption. This article provides an introduction to cloud computing by outlining its essential technical characteristics, including on-demand self-service, resource pooling, rapid elasticity, and measured services. However, along with these features come significant risks related to security and data protection. The primary concerns addressed in this paper include lack of control over stored data, untrusted access mechanisms, illegal or unauthorized data usage, and ambiguities in roles, authorities, and responsibilities between cloud providers and users. Specific threats such as unauthorized access, data breaches, loss or corruption of information, and resource exploitation are discussed in detail. Furthermore, the article presents current solutions and protective mechanisms, including strong encryption techniques, advanced access control systems, security policies, auditing mechanisms, and adherence to international standards. By analyzing both the challenges and mitigation strategies, the study highlights the importance of integrated security approaches that balance efficiency with user privacy. Ultimately, ensuring trust in cloud platforms is fundamental to their sustainable growth and to fostering widespread confidence in adopting cloud technologies worldwide.

Index Terms- Security, Privacy, security risks, Cloud service models, security requirements, SaaS, PaaS, IaaS.

1. INTRODUCTION

The age of technology is changing the world and we are witness of its effects. With the invention of the internet, the world became smaller in terms of communication and cooperation between people. Furthermore, the services over the internet that enabled this connected world required technical resources.

As data transfer volume, applications, social media, business and other online services increased vastly in recent years, the need for cloud computing services became nearly inevitable. Moreover, the cloud computing technology emerged since it provided possibilities to utilize various online services such as cloud hosting, cloud storage, cloud servers by use of shared computer resources such as hardware and software.

To define the term “Cloud computing”, most of the research papers refer to the NIST (National Institute of Standards and Technology) definition. This definition is cited from the book (Siani Pearson, George Yee, 2013) as follows: “*Cloud computing is a model for enabling convenient, on demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider’s*

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interaction”. According to NIST, cloud-computing model consist of five essential characteristics (On demand self-service, broad network access, resource pooling, rapid elasticity and measured service), three service models (Software SaaS, Platform PaaS and Infrastructure IaaS) and three deployment models (Private, Public and Hybrid).

Today, many organizations and industry companies are moving towards this technology due to benefits offered by cloud computing model such as quick positioning, measured services, scalability, accelerated delivery, adaptability, universal network access, prominent elasticity, low-cost catastrophic restoration, data storage solutions, fast reconstruction of services, etc.

In 2018 (Fig. 1), 26% of European enterprises purchased cloud computing services and incorporated cloud technologies to improve their operations while reducing costs; this was an increase of 25% on 2016.

18% of companies use medium-highly sophisticated services (i.e. hosting of the enterprise's database, accounting software applications, CRM software and computing power). The ratio for large enterprises is 39%, well above that of SMEs (17%).

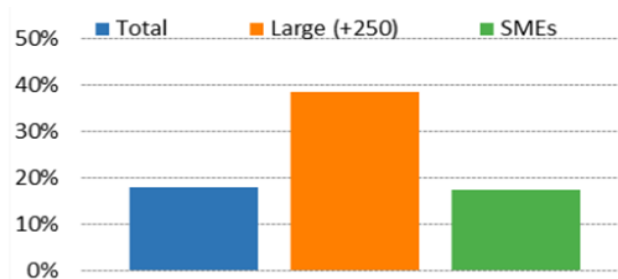


Fig. 1. Eurostat, Cloud computing services of medium-high sophistication (% of enterprises), 2018

Beside many benefits, cloud computing also faces many challenges especially in privacy and security issues, which are the key elements of this article.

2. PRIVACY

In general, the term “privacy” defines the right of using your assets without being disturbed, observed, intercepted or interrupted. The users of cloud computing technology are concerned regarding their information and interactions in the cloud because they are aware of:

- Who is behind that foreign and unknown online platform that has full control over their data?
- Who manages their sensitive data?
- What will happened with their stored data?
- Does somebody else has access to his or her data?

On the other hand, cloud computing service providers are concerned on how to ensure the main principles such as confidentiality, availability, integrity, reliability and performance for their users. Furthermore, there

exists many challenges and issues for cloud service providers in achieving these principles, notably in privacy and information control.

The main concerns to address in this article are lack of data control, lack of access trust, illegal usage of data and undefined authorities and responsibilities. Below, will define the main privacy challenges in the cloud computing arranged as follows according to article:

Protection of data – is a key concern in cloud computing, therefore many research are conducted that came up with the solution of using encryption techniques on stored data but also in transmission over the internet such as SSL encryption, but still protection must be enhanced.

Lack of user control – includes both legal issues and issues raised by users.

This means that users cannot always control their data on cloud because service providers host and manage their data, which sometimes raises the issue of data transparency and data exposure.

Illegal use of data – is another privacy concern for the users because the cloud service providers may sell user's data to third party companies without their approval. There must be defined the agreements between providers and users regarding unauthorized data usage.

Training of Employees – lack of trained staff could affect data management that usually leads to user's data privacy breach.

Legal protection – is another serious concern due to lack of uniformed legislation for cloud computing across different countries. Furthermore, data on cloud is not defined in terms of location hence data flow across borders can impose different privacy laws.

2.1 Data protection by means of encryption technique

Since data integrity and confidentiality are essential issues when deploying Cloud computing, modern systems use data encryption by allowing the sender to send an encrypted message to the recipient via a cloud storage server. The sender should not know any other information except the identity of the recipient (should not know the public key or the certificate of the recipient). The recipient must possess two things in order to be able to decrypt the text.

As a start, it is necessary his secret key stored on the computer. In addition to the secret key, he needs a unique personal security device which can be connected to the computer. It is impossible to decrypt the text without one of them.

Moreover, the moment a security device is lost, it is revoked and can no longer be used to decrypt any text.

This can be achieved through the Cloud server, which immediately executes an algorithm to change the existing encrypted text making it decrypted from the lost device. This process is completely transparent to the recipient.

The Cloud client generates an encryption key, through which data is encrypted and decrypted on the way to the Cloud provider.

Good encryption key management is required to ensure data privacy. For this reason the following steps should be followed:

- It should be determined whether the keys will be maintained by the Cloud customer or by trusted key management providers;
- It must be determined whether the keys are stored in the Cloud;
- Encryption keys should not be stored with encrypted data;

- Encryption keys must be managed securely. Data encryption and the use of sophisticated encryption algorithms have the side effect of increasing CPU load on servers and users' computers. This load and processing delay becomes even more apparent in Big-Data situations. The solutions offered in such cases and the best options are those that encrypt the data before placing it in the Cloud and decrypting it after receiving it from it.

3. SECURITY

The term, “security” means protection of your own assets. Security is based on a wide range of policies and technologies, which are used to protect the data, applications and various infrastructures of Cloud Computing. Security risks are shared between Cloud providers and Cloud customers, based on Cloud distribution and service model. Therefore, the same principle also applies to cloud computing privacy and security due to the possibilities of online data theft, violation, interception and alternation.

Even though security in cloud computing is more enhanced than privacy, there are some issues that need to be considered, as described below:

Data breaches – data stored on the cloud may include financial statements, health information, trade secrets or personal information, therefore it is very attractive target for the hackers.

Network security – data needs to be secured not only at databases but also during transmission. It is required to use strong traffic encryption in order to secure network traffic.

Data access – data stored in the cloud must to be accessible from anywhere at any time from any system. There are some issues in the cloud regarding access from any device, such as information interruptions and different types of attacks occur in situations when there is weak client verification system

Multitenancy – cloud computing is a shared service with multiple users therefore they are not very isolated from each other. Furthermore, cloud service providers use virtualization to offer different services and separate users, which includes sharing virtual machines or allocating a virtual machine to a user. This means that one user might affect other users on the same service.

Deletion of data – data deletion may occur due to any attack or disaster so there is a need for backup. Cloud data destruction or loss can incur a permanent damage to the business.

Phishing – cloud computing suffers from phishing attacks as they target email platforms, websites and other services by inserting a malware on attached files which activates it by only a click, therefore the hackers can hijack user’s accounts.

Data location – as cloud computing offers data mobility, the users usually keep their sensitive data in cloud, thus the data location must be a priority.

Attacks – the main attack that targets cloud-computing services include man-in-the-middle attack, wrapping attack, denial of service attack, malware injection attack, data stealing, side channel attack and authentication attack. It is crucial for cloud service providers to take measures in preventing and protecting from these attacks.

Malicious insiders – human mistake is evident and very often cause the loss or damage of data.

Apart from human mistakes, there also exists malicious insiders who can damage, use or steal the data on purpose. An insider may be a present or previous employee, contractual employee, a company partner etc.

3.1 Security and service models in Cloud

In addition (Fig. 2), to the common security issues related to Cloud in general, each service model has its own specific security issues.

In the IaaS model, the developer has greater control over security because applications run on virtual machines separate from each other but executed on the same physical machine. The only point to be careful in this model is the virtual machine operator who must own and provide a higher security. In the PaaS model, the provider can provide a certain level of control to the specialists who build applications on this platform. For example, developers can create their own data authentication or encryption systems. However, providers provide a security below the application level by making data inaccessible between applications.

In the SaaS model, the most problematic issues are the analysis and filtering of security alarms, loss of data control, data protection, and compliance with government regulations. Employees of the Cloud provider may accidentally or not lose important and confidential data about a company. In order to maintain confidentiality, Cloud clients must use encryption and sophisticated methods to manage access to SaaS services

Encryption is an effective method of securing data before it is stored in the Cloud provider. However, encryption cannot be applied to services where data is to be used in computing. It is important that migration policies in the new SaaS model enable a well-defined security architecture for accessing SaaS services.

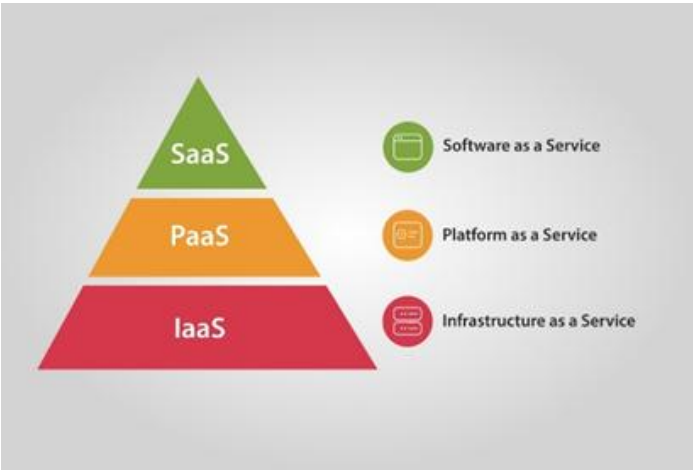


Fig. 2. Source, LISLINK, Startup laboratory

In 2018, in the framework of the defense of a dissertation, a questionnaire was conducted through 22 representatives of Albanian government institutions, who use public and

Cloud government services, as well as representatives of institutions which are trying to pass their applications and services in Government reindeer.

From the answers received (Fig. 3), 82% of the institutions specified the time out of service as the biggest problem for security. Off-time time can lead to significant cost losses and impair important processes for the institution. Other major problems are identity theft (77%), denial of service attacks (73%), privacy (55%), etc.

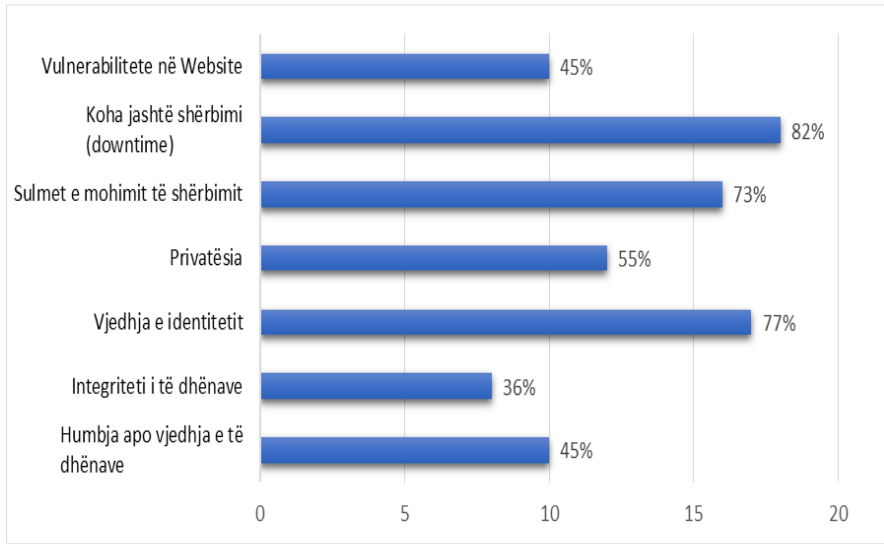


Fig. 3. Security problems.

Although they may have a security problem, according to INSTAT in 2020, cloud services (services used on the Internet to access software, storage capacity, etc.) are used by 18.2% of Albanian enterprises that have access to the Internet from 11.4% that resulted in 2019.

3.2 Identity Management in Cloud

Identity management enables the authorization of access only to persons with certain rights. To accomplish this, solutions like Single Sign On (SSO) must be implemented for existing users. In addition, identity management standards such as SAML, SPML, WS-Federation, etc. can be used as a way of authenticating and authorizing users.

Cloud applications in more sensitive areas such as in e-Government require more reliable and secure mechanisms. This gap for such cloud applications is solved by applying the STORK framework for secure cloud authentication using eIDs. The STORK framework supports various national eID solutions and will be the relevant eID framework across Europe in future.

Identity theft is considered one of the main security problems. Blocking access to unauthorized persons comes as a necessity to enable basic security criteria and to keep confidential data. Secure authentication options include electronic certificates, token use,

biometric methods, etc., which maximize forceful interference with cloud systems. Compromise in terms of security is one of the weak points, which brings a great risk to the user. There are many systems that seek to fix this vulnerability, proposing a way that enables both encryption and access controls for users.

In addition to the protection methods, the appropriate password policies (such as minimum length, duration of use, history, complexity, etc.) as well as those for account protection (duration of blocking access after failed attempts) must be followed. Since most resource allocation is done through remote connections, unprotected API-s, the center of attacks are mainly management API-s and PaaS services.

Ways of attacks such as phishing, fraud and exploitation of software vulnerabilities continue to succeed. Credentials and passwords are often reused, increasing the impact of these attacks. But the solutions in Cloud add a new threat. If an attacker obtains credentials, he can view activities and transactions, manipulate data, return falsified information, and redirect customers to dangerous sites. The service instance can become a base for the attacker, from where he can use the user's reputation for further attacks. It is very important that the institutions that deal with the policies of Cloud and their implementation, take into account the above principles when transferring services to Cloud. In this respect, some services in Re meet the principles of security, while some others only a part of them.

3.3 Actors' responsibilities for security in Cloud

When applying for the use of cloud computing services, users usually have serious concerns about the lack of information or the way resources are managed by Cloud providers, e.g., location of sensitive data, lack of physical control of the data storage center, reliability of data backup, measures to be taken in case of damage, etc.

Also, Cloud users have concerns about exposing their data to foreign governments and their privacy laws. Different user roles, e.g., the Cloud service provider, the Cloud user and the IT administrator need to be defined, defined and used on its platform. Uncertainty in these roles and in defining the responsibilities of each role in relation to data ownership, access control, infrastructure maintenance, etc., can lead to legal or technical problems (especially when working with third parties).

Also, contractual uncertainties can lead to anomalies or incidents. Users of Cloud service usually consider the Cloud service provider as primarily responsible for security issues in Cloud, although each actor is responsible for specific security-related issues.

Among other things, the decision of a Cloud user to migrate part of its IT infrastructure to a Cloud infrastructure would result in the transfer of part of the data control to the service provider. This can pose a major threat to user data in terms of roles and privileges.

Along with the transparency associated with the Cloud provider's practices, a misconfiguration can occur which can trigger internal attacks. These weak points would damage the reputation of the provider and may result in a lower trust of the Cloud user.

The institutions surveyed in the above survey, which were considering switching their services to SaaS, face some technical challenges.

73% of institutions (Fig. 4), rated 'Applications Security' as one of the main challenges, followed with difficulties of integration with the existing system (68%) and system and network security.

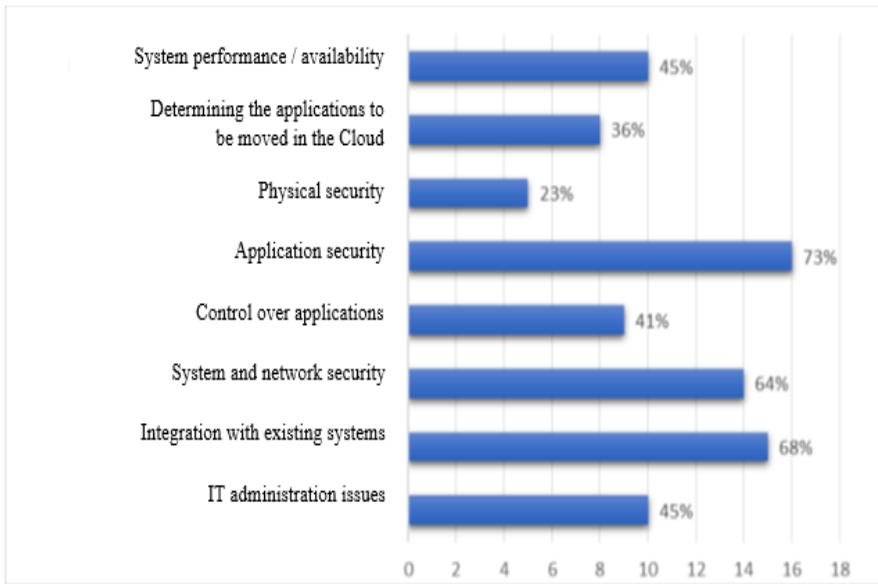


Fig 4. Technical challenges of adaptation to Cloud environment

From this survey (Fig. 5), only 5% of the representatives of the institutions considered security as a responsibility of the user, 77% of the representatives of the institutions considered security as a responsibility of the Cloud service provider.

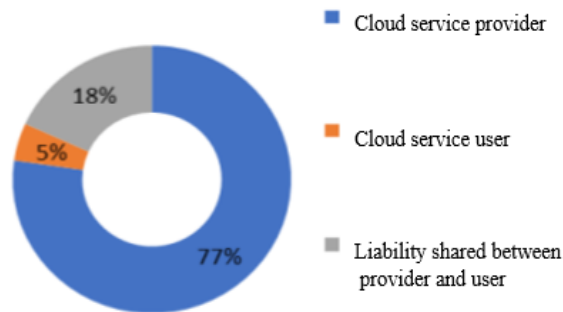


Fig. 5. Actors' responsibilities for security in Cloud

3.4 Threats associated with Cloud computing services

An important measure to be taken to secure the Cloud computing environments is proper encryption and key data management. Sensitive data is in transit over the network, increasing the risk of capture, hijacking, or loss, so it is very important to implement access control and data encryption systems, which are transferred between the parties. The best methods today, provide effective cryptographic schemes for controlling access to the cloud for data

sharing. These systems provide temporary data encryption schemes, which are shared between parties based on the identity of the parties.

Also, it is quite important to determine the actor, who will control the encryption and decryption of the keys (customer or provider), and whether the encryption method used is appropriate. In Cloud environments, service providers have the privilege of accessing data, creating the risk of data loss or unauthorized access to the Cloud.

In Albania, the Authority of the Commissioner for the right to information and protection of personal data, suggests some of the rules that must be respected when using the Cloud computing service, so that the processing is in accordance with the rules for protection of personal data and guarantee security of personal data processed, as follows:

1. The Cloud client and the Cloud service provider enter into a written contract between themselves and each subprocessor in case of delegation.

2. Transparency is essential for a fair and lawful processing of personal data.

3. The client determines the goals of the processing before the collection of data by the data subject and informs the latter

4. Personal data must be kept in a form which allows the identification of data subjects for no more than is necessary for the purpose for which the data were collected or for which they are further processed.

5. Defines the rights and obligations of the Cloud client.

6. Defines the rights and obligations of the Cloud service provider.

7. Audit. Given the possibility of collecting a large amount of personal data from the Cloud service provider, the latter should be subject to third party audits in addition to the audit performed by the Cloud client itself.

4. SUMMARY OF SOLUTIONS TO SECURITY CHALLENGES AND ISSUES

Many security issues need to be considered in order to enhance cloud security. Presented below, there are summary of some solutions security challenges and issues mentioned in the article.

Encryption techniques: is a method that includes usage of cryptographic algorithms and techniques in order to establish secure transmission and storage of data in the cloud. This method also protects data processing and computation thus it is a great tool for privacy maintenance.

Identity and access management: usage of an identity management guidance that includes all main issues and recommendations such as access management, identity management, access control, user access certifications, identity and access reporting etc.

Intrusion management: include the method of pattern recognition for detecting unfamiliar and unpredicted events in order to react proportionally for preventing the intrusions.

Authentication and authorization management: used for detecting unauthorized access to cloud computing. In general, an authorized person must use a valid username and password to access the cloud services, including verification steps before using cloud services.

Digital signatures: used to identify the authenticity and integrity of the user. It is an asymmetric cryptographic technique.

5. CONCLUSION

Based on the literature review, it is depicted that cloud computing is an emerging technology that offers facility to share software and hardware resources over the internet. The advantages of this technology include lower IT infrastructure cost, increased computing power, unlimited storage capacity, easier group collaboration etc.

Beside advantages, it has also some disadvantages such as dependence on stable network connection bandwidth, no access of information in case of cloud data loss and the most important security and privacy of stored data. However, the issues that must be further enhanced include the innovation mostly on the side of cloud service providers.

Furthermore, specification of unauthorized service usage must be defined by agreements between users and cloud service providers. The other open issues that also need further research include uniformity of laws for stored data between countries and necessity of employees training at every level. As the demand for cloud computing is increasing, the security and privacy issues will be solved by the competition between cloud service providers.

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THE DIGITAL TRANSFORMATION OF THE EUROPEAN UNION'S ECONOMY: COMPETITIVENESS, SUSTAINABILITY AND THE FUTURE OF THE DIGITAL EURO

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Abstract

More than ever, the digital age is upon us. The number of individuals accessing and relying on the internet is increasing. One aspect of this future is the European Union's digitization. The economy, politics, and the social structure itself will all face changes as a result. The EU seeks to increase innovation, improve infrastructure, and promote digital skills while maintaining environmental responsibility through programs like the Digital Decade policy framework. Additionally, the introduction of the digital euro represents an important breakthrough in financial modernization, allowing us to make payments in all nations that are part of the euro area.

INTRODUCTION

The European Union is at a pivotal moment of digital transformations- all these processes include reshaping of the governance system, the economic model, and last but not least the social aspect- there are many elders who are not digitally educated. These and many other difficulties during this long and complex transition. Other aspect for the digitalization of the European Union is the constant competition to stay up to date, to be productive and continue improving.

At the same time other challenge is the disparities in digital readiness among Member States, also the dependence on foreign technologies and the growing concerns over data security and privacy.

Moreover, The Digital Euro and the transition to digital currency. Indeed, it is a groundbreaking initiative- a major step into reshaping the European monetary system by enhancing payment efficiency. But are not there some potential and concerning issues- such as hacker attacks and no privacy due to the fact that our money is going to be constantly visible. Meaning what and where we use them for.

Digital transformation:

Digital skills:

***'Technological change requires people and businesses to acquire new digital skills and competencies.'* (Digitalisation in Europe – 2025 edition – Interactive publications – Eurostat)**

One main topic and important aspect for our topic is the digital skills of the people who are going to face these new era of the European Union. Due to Eurostat, and more precisely according to the EU target, 80% of the population should have basic digital skills by 2030.

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The bare minimum to be considered with basic digital skills is at least 1 activity in each of 5 different competence areas- information and data literacy, communication, digital content creation, safety and problem-solving.

‘44% of EU citizens lack basic digital skills’ (due Eurostat- Digitalisation in Europe – 2025 edition – Interactive publications – Eurostat)

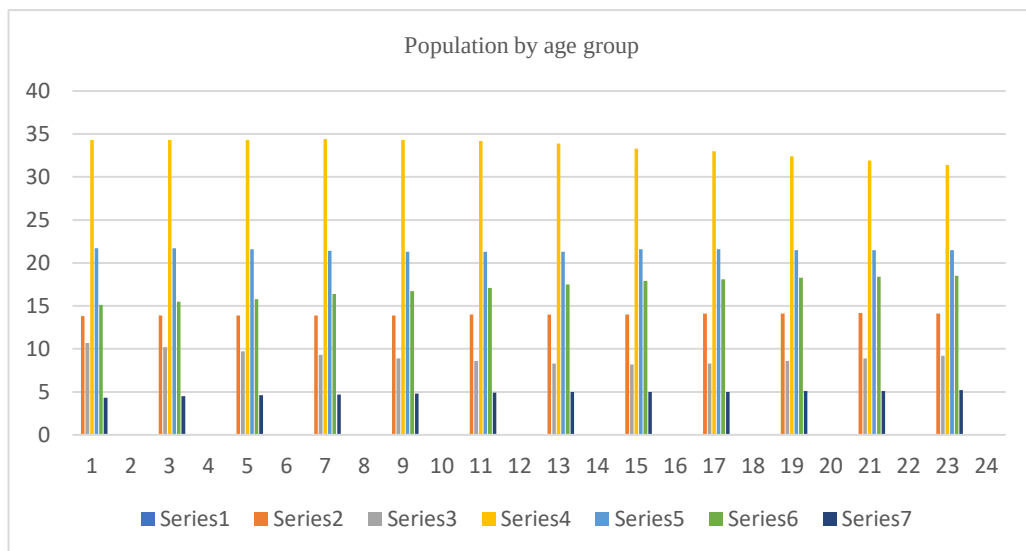
Additionally, due to the source written above the share of people with basic or above basic digital skills in 2023 was highest in the Netherlands with 83%, followed by Finland with 82%, etc.



Source: Eurostat

Fig. 1. People with basic or above basic digital skills, 2023

As you can see by yourself the percentage for Bulgaria is barely 35.5% which illustrates one of the main challenges that I mentioned above- the social aspect, the age differences, and the fact that Bulgaria is with aging generation.



Source: Eurostat

Fig. 2. Population by age group in Bulgaria 2013-2024

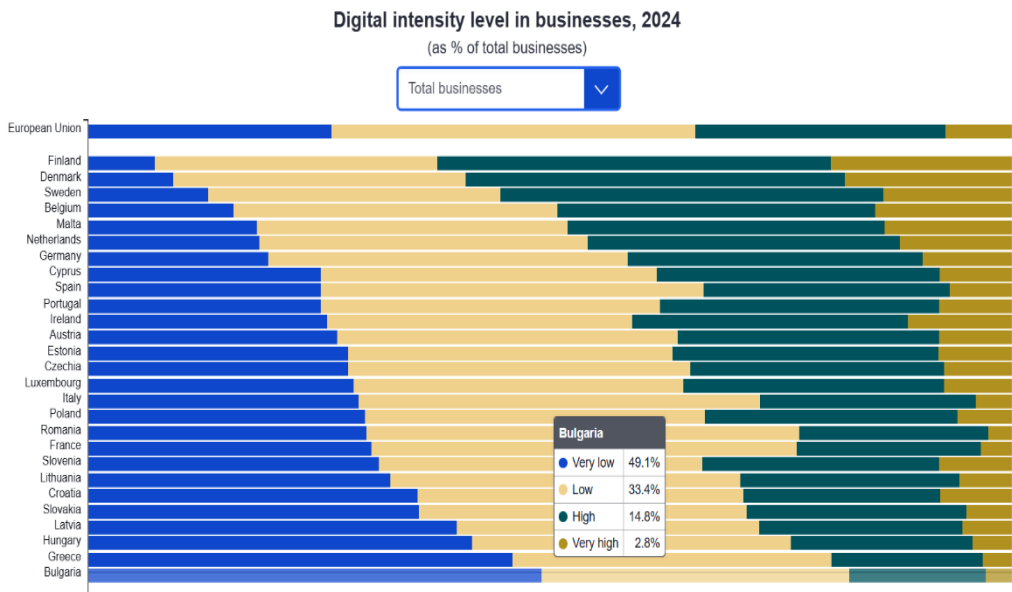
Technology uptake in businesses:

Here comes even more intriguing aspect of our topic, and more precisely the technologies and innovation in business. Integrating innovative technologies in business processes is important due to the fact that might actually simplify the working process and also might reduce the mistakes made by humans. And here comes the AI and the digitalization of the business such as online sales, use of less paper for documentation, working from home which also means less driving and less emissions. So, the integration of technologies in business is also an ecological, less stress movement.

Due to Eurostat the EU has set itself 2 main goals for the digital transformation of the businesses by 2030: *'more than 90% of SMEs should reach at least a basic level of digital intensity and 75% of EU companies should use cloud computing services, perform big data analysis or use AI.'* (source: *Digitalisation in Europe – 2025 edition – Interactive publications – Eurostat*).

Furthermore, the digital intensity of the business is monitored by DII or also known as Digital Intensity Index which is used for the measurement of the usage of 12 different digital technologies such as AI. With more simple words scores how much the business depends on the digital tools they use.

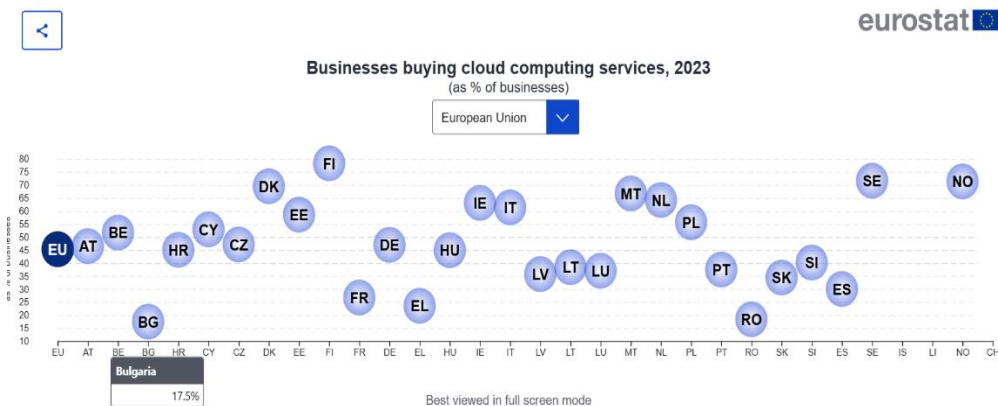
'Over 70% of EU SMEs reach basic digital intensity' (Source: **Eurostat Digitalisation in Europe – 2025 edition – Interactive publications – Eurostat**)



Source: Eurostat

Fig. 3. Digital intensity level in businesses, 2024

Continuing with other aspect of the idea of digitalization- the Cloud services. They are used by 45% of the EU businesses. These services enable businesses to access different resources hosted by third party and helps the companies because they do not have the need to create their own IT infrastructure.

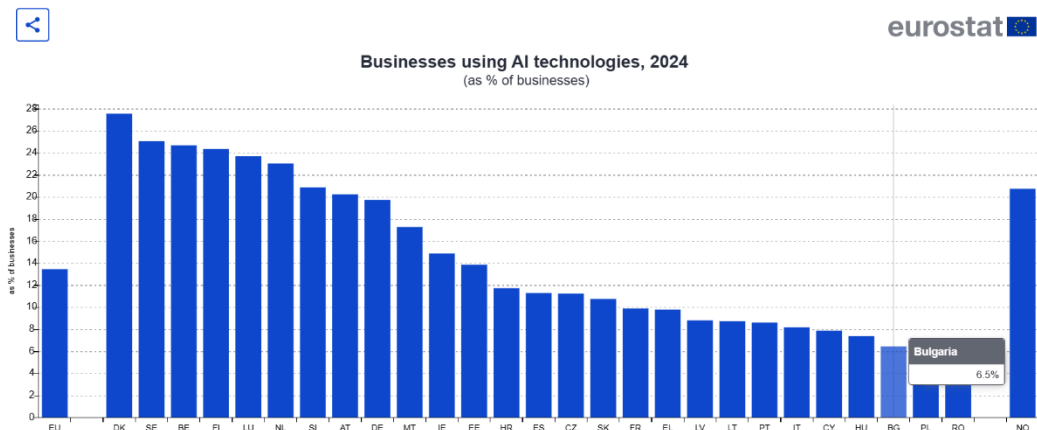


Source: Eurostat

Fig. 4. Business buying cloud services, 2023

Last but not least, the AI technologies in EU business is over 13%. As I mentioned further in the article that AI gives the business a priceless opportunity- hence to be more time

efficient, to make better decisions, to analyse data, etc. Also, AI gives machines and systems the capability to learn and reduces the possibility of mistakes.

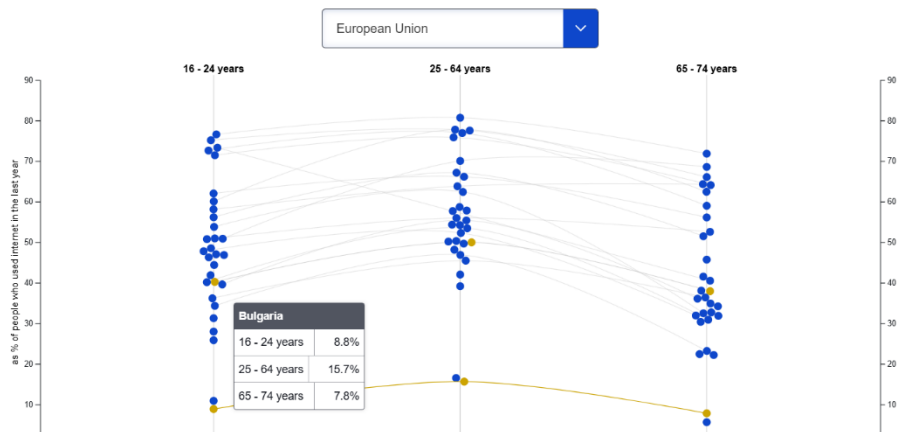


Source: Eurostat

Fig. 5. Business using AI technologies, 2024

E-Government:

The E-government is the second point that is important to be said in the article. Nowadays, most of the people who work 9-5 does not have the time to go to certain institution and finish his/her job. So, these people surf the internet and use the sites of the different institutions in order to successfully do the administrative procedures they want. One of the main benefits this has is the ability to access any information you need. ‘According to the EU digital decade targets, all key public services for businesses and citizens should be fully online by 2030.’ (source: Eurostat Digitalisation in Europe – 2025 edition – Interactive publications – Eurostat).



Source: Eurostat

Fig. 6. People obtaining government information online, 2024

Digitalisation: Opportunities and risks:

Digitalisation itself has a lot of opportunities but as I have explained above in the article hides a lot of risks especially for the countries with poorer digital knowledge and skills such as Bulgaria.

However, it still has its opportunities such as job creation, advancing education, boosting competitiveness and innovation, enabling a green transition, etc. But this hides risks such as hacker attacks. So, it is quite necessary to safe digital space to be created. And the EU is committed to do so for the citizens and for the businesses. Also, other challenge and goal to during the process of digitalisation is to reduce the dependence on other regions for key digital capacity, to increase the investments in digital technologies, to promote convergence among member states, etc.

Digital decade programme:

That is the path of the EU for digitalisation. The programme is structured in four areas- digital skills, digital transformation of business, secure and sustainable digital infrastructure, and digitalisation of public services. It is expected these targets to be reached by 2030 and includes annual cooperations with member states, the European Commission and constant monitoring mechanism. This programme aims to allow people and businesses to have a human-centred, inclusive, sustainable digital future.

AI ACT:

Continuing, with the AI Act which is part of the digital strategy. By the power of this regulation the EU ensures better conditions for the developing of the technologies and also a safer environment for the users. But let us ask one question- Why AI?

The artificial intelligence has and also can create many benefits- such as more efficient manufacturing, to improve the healthcare, etc. The main purposes of this act are to ensure the AI systems used in the EU are safe, transparent, traceable, non-discriminatory, etc. The entire process started in April 2021 when the European Commission proposed the first AI law, establishing a risk-based AI and then The Act entered into force on 1st August 2024. Its purpose is to analyse different applications and then to classify them into categories based on the level of risk. Furthermore, the Act uses a four-tier risk framework- Unacceptable risk (ex. Threats to safety, fundamental rights or values, manipulative system), High-risk (ex. Systems that might have significant impact on people's rights, safety or important sectors), Limited risk (systems with transparency or informational risk) and Minimal or no risk (that's the branch where the majority of AI systems fall). Moreover, some generative AI, like ChatGPT will not be considered as high-risk, but still have to fill some requirements and EU copyright law- such as the generated text to be only AI, to prevent the system from generating illegal content, etc. On the other hand, the more advanced and improved version GPT-4 might pose a risk due to the generation of different images and videos, which should be strictly labelled as AI generated and again to not promote or express an illegal content.

Digital Euro:

The last but not least- The Digital Euro.

But before exploring the digital euro in greater detail, it is important to address certain key points: To begin with brief explanation what digital currency is, types and pros and cons.

Digital currency is also known as digital money, exists only in digital form without physical counterpart. Unlike traditional cash, these money cannot be touched or stored and are mainly used for quick transactions or trading across borders. The second question is: what are the types of digital currency?

There are 3 types of digital currency: cryptocurrencies, virtual currencies, and central bank digital currencies (CBDCs). The cryptocurrencies are currencies that use cryptography to secure transactions, examples for such are the Bitcoin and Ethereum. The cryptocurrencies might or might not be regulated by the authorities. The virtual currencies are unregulated and are controlled by developers or founding organizations consisted by various stakeholders, example is a gaming network token. And the CBDCs are regulated digital currencies issued by the central bank of a country. The CBDC can be a supplement or a replacement for a traditional fiat currency. The means of which the CBDCs are planned to be implemented are speed of transaction, security of centralized payment systems, lowering the cost and dangers of handling cash. Also, this system provides a great transparency due to the reason every cent that a person has spent will be automatically reflected in the wallet. But still there are some risks. And here comes the third question: What are the advantages and disadvantages of the digital currency and more specifically the CBDCs?

Continuing with the advantages- such as fast transactions, lower cost of transactions, no physical manufacturing required due to the fact that many are required for the production of physical currency, accessible around the world. But still there are some disadvantages such as storage and infrastructure issue- such as the necessity of stable internet connection, hacking potential- your money might be stolen from your digital wallet, irreversibility.

China	People's Bank of China (PBOC) is testing e-CNY, and millions are already using it.
Sweden	Since 2020, Sweden's Riksbank has been testing the e-krona.
EU	European Central Bank (ECB) that is going to issue the digital euro.
England	The Bank of England is looking into prospect of launching the Bitcoin cryptocurrency.
Canada	The Bank of Canada has ideas of creating a CBDC.

Source: Investopedia

Fig. 7. Examples for major central bank that are looking into issuing their digital currency

Last but not least, the Digital Euro. Is proposed by the ECB as a CBDC for retail use with the idea to be used by the citizens and businesses across the euro-area. The key idea is to work similarly to cash in the means of instant payments. So, there are some proposals to work both online and offline (if the network connection is poor). Also, the digital euro is

planned to be free of charge to everyone. It is going to be stored in digital wallets. The preparation phase started in November 2023, and it is expected to end by late 2025.

CONCLUSION

From my perspective, the whole idea behind this period of rapid digitalization is quite frightening due to many reasons and many speculations some of them are the risks of hacker attack not only in our digital wallets but even in our phones, where all the essential information is stored. Also, the constant usage of AI systems has its pros and cons. For example, in business it optimises the working processes and reduces the mistakes but at the very same time people are starting to use it for their daily needs. The possibility of AI generated videos with concerning content is still a factor of significant importance. Based on my analysis, the digital money may offer a certain degree of privacy, however, it is regulated by the country's central bank, which means the bank can trace your transactions and know the exact amount of money you possess.

In conclusion, the continuous desire for modernisation, as well as the improvement and simplification the citizens' and businesses' lives and needs, is commendable and indeed essential. Nevertheless, there are numerous risks that must be carefully considered before taking any action.

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THE PETRODOLLAR SYSTEM AS A TOOL OF GEOPOLITICAL POWER

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Abstract

With the establishment of the petrodollar system in the 1970s, the linkage of global oil trade to the United States dollar has both consolidated U.S. economic dominance and created various structural imbalances in global finance. This paper will examine the formation of the petrodollar throughout the late 20th century, its economic and geopolitical impacts and the systemic vulnerabilities that stem from it. It argues that while the system expanded U.S. power, it did so by fueling wars, dependency and inequality. Fundamental challenges such as de-dollarization efforts and emerging BRICS alternatives are on the rise.

Keywords: petrodollar, U.S., oil, de-dollarization, BRICS

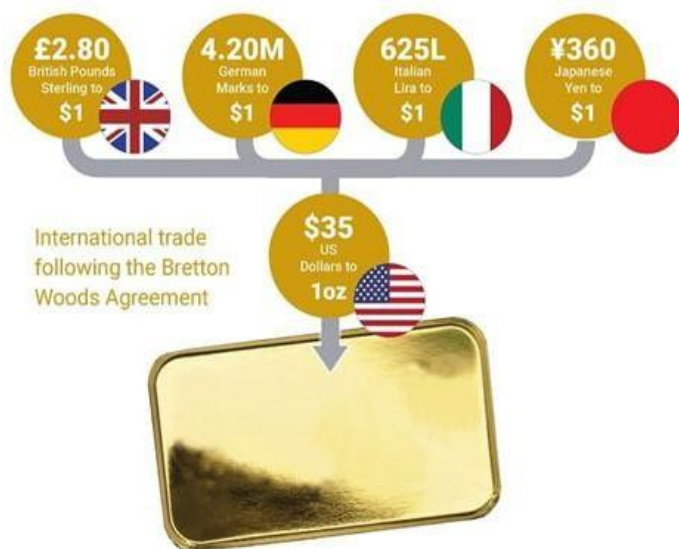
JEL: F50, F60, N10, Q30

INTRODUCTION

The state of global economic relations after the end of World War II was largely defined by the supremacy of the U.S. dollar as the dominant currency, initially backed by the gold standard and later as a medium of international business. It was the most on-demand currency during the Bretton Woods agreement, due to all others being tied to it. However, after the U.S. abandoned this framework in 1971, they needed to find an alternative means of keeping the dominance of the dollar. The solution to this dilemma – the infamous Petrodollar. Through their arrangement with Saudi Arabia and other Gulf countries soon following suit, the U.S. secured the dollar to be the exclusive means of their oil sales worldwide. This practice laid the foundation of this extremely powerful, yet lucrative strategy.

The petrodollar system made it certain that there will be consistent global demand for U.S. currency and treasury securities, which would in turn allow the U.S. to sustain regular trade deficits without the risk of a balance-of-payments crisis. But nothing comes as an advantage to every side, certainly not the petrodollar. It has made energy and geopolitical control much closely tied, increased global dependency on the dollar and preserving this system. Economists argue that this framework has only fueled inequality, financial coercion, as well as environmental damage through the linkage of global economy to fossil fuel consumption and the strategic interests of the U.S.

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Source: Bullion by post Europe

Fig. 1. Bretton Woods framework

By the late 1960s, the U.S. were faced with budgetary pressures from their spending on the Vietnam War, Cold War and more. Inflation was growing and so was the balance-of-payments deficit. Although the U.S. held less than one third of the world's monetary gold at this point, they were still responsible for keeping up the majority of international reserves (Stiglitz, 2002). This mounting pressure led to a major event in 1971 known as the Nixon Shock. It was then that President Richard Nixon decided to end the dollar's convertibility into gold, effectively ending the Breton Woods system and thus leading to a new era of fiat currencies (Clark, 2005). Naturally, this abrupt shock set on a global monetary crisis, as countries scrambled to find a way to evaluate their reserves and conduct international trade with no peg to gold.

In the meantime, there was major political instability in the Middle East, reaching its peak with the Yom Kippur war in 1973, fought between Israel versus Egypt, Syria and the coalition of Arab states, of which Saudi Arabia was a part of. In response to the U.S. support for Israel, Saudi Arabia and other oil rich countries from OPEC imposed an oil embargo on the U.S. While this proved to be a major blow to the States., causing an energy crisis and skyrocketing prices, it was just as tough on Saudi Arabia. Without selling oil to the U.S., their revenue fell dramatically, while their established reliance on American technology and global markets showed the impossible strain, they exposed themselves to. Faced with harsh economic turmoil and inflation, the U.S. sought to find a way to stabilize their monetary position through securing exclusive dollar pricing of oil (Spiro, 1999).

With both sides being pressured, in 1974 Washington negotiated a vital bilateral agreement with Saudi Arabia, the largest OPEC producer, which states that Saudi oil would be sold exclusively in U.S. dollars, while their excess revenues would be reinvested into U.S treasury securities. In exchange, the U.S would guarantee military protection, as well as political support for the Saudi regime (Clark, 2005) (**Figure 2**). Although a crucially

important deal, it was technically secret and therefore no official government statement appeared around it, only becoming public in 2016. Soon after, other OPEC members followed suit, which only helped institutionalize the petrodollar system. It became a mechanism that ensures global demand for dollars and secured it as the primary reserve asset worldwide.

Hallenges are emerging against the petrodollar. With alternative trading agreements on the rise, such as ones coming from the BRICS bloc and various bilateral energy deals being denominated in other currencies, it is evident that a potential shift toward a multipolar monetary order is not out of the picture. This paper aims to critically examine the history, mechanisms and effects of the petrodollar system, arguing that while it shaped and defined U.S. global dominance for decades, it has also had severely adverse effects in many areas beyond simply economics.

ORIGINS OF THE PETRODOLLAR SYSTEM

The origins of the petrodollar system are fully connected to the sharp changes in international monetary order in the early 1970s. These changes occurred as a long buildup of various factors stemming from the Bretton Woods agreement in 1944. Before that point, most currencies were tied to the gold standard, drastically different from the fiat money most common nowadays. It meant that for a country to print money it would first need to acquire enough gold to back it. However, during WWII most countries, especially European ones, largely drained their previously held gold reserves, while the U.S. was left with over 70% of the world's gold. This led to the Bretton Woods agreement in 1944, in which 44 countries agreed to peg their currencies to the U.S. dollar, which would be itself convertible to gold at 35\$ per ounce. Thus, those countries would still indirectly have their currency tied to gold (**Figure 1**). Through this agreement, the main goal of monetary stability was achieved, but it placed serious weight on the U.S. economy, as with international trade expanding, the global demand for dollars went beyond its gold reserves (Hudson, 2003).

When looked at from an economic perspective, the petrodollar functions as a substitute for the gold standard, with global liquidity now tied to oil, instead of gold. From a political perspective, it initiated a new form of monetary imperialism. One in which the U.S. could finance its deficits and overseas military operations by simply issuing more dollars, rather than tangible reserves (Hudson, 2003). Recycling of petrodollars through Western banks also reinforces financial globalization, but at the cost of deepening developing countries' dependency on U.S. controlled credit markets.

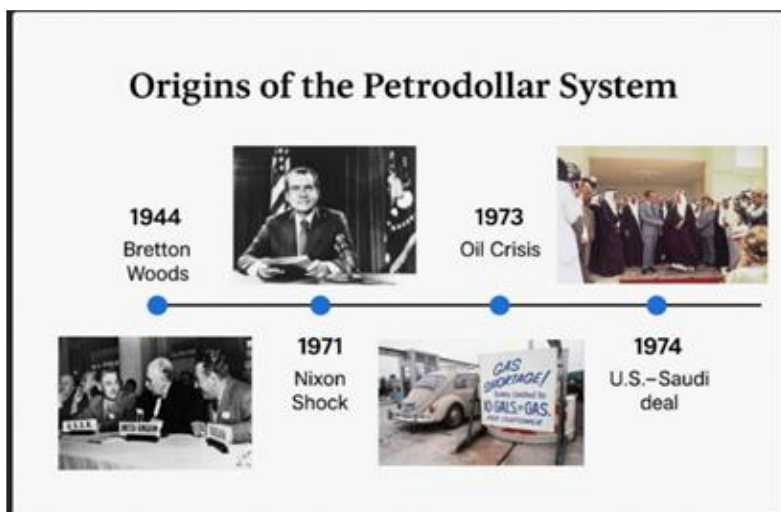


Fig. 2. Timeline of events

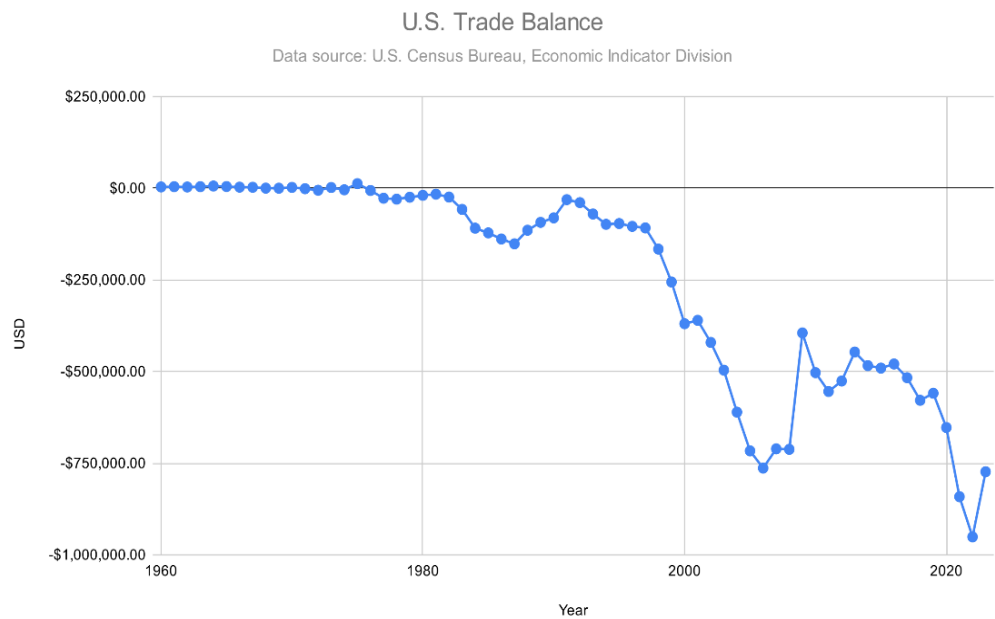
Even though the petrodollar system helped provide short term stability after the collapse of Bretton Woods, it ultimately entrenched the structural disbalance between the U.S. and the rest of the world. The dollar's focused power became a source of U.S. hegemony and global vulnerability, as countries that wish to import oil must accumulate dollars to secure their energy needs. The result of this dynamic were the subsequent economic crises, geopolitical tension and following conflicts linked to maintaining the dominance of the dollar (Spiro, 1999; Clark, 2005).

MECHANISMS OF THE PETRODOLLAR SYSTEM

It can be said that the petrodollar system functions through the sustained global demand for U.S. dollars, resulting from interlinked financial and economic mechanisms. The core of this system is precisely the exclusive oil pricing in U.S. dollars, established through the U.S. – Saudi agreements of the 1970s and further on adopted by all OPEC members (Clark, 2005). This practice technically forces any nation which seeks to import oil to perpetually hold dollar reserves or conduct their business through the U.S. banking system. This ensures a constant demand for dollars, regardless of the state or strength of the American economy at that point in time (Spiro, 1999).

So how can countries acquire those crucial dollars they are forced to use when purchasing oil? They can do so either by exporting goods or services to the U.S., they could exchange their domestic currency in foreign exchange markets, or they could also borrow dollars from international markets. Regardless of the way, it always comes down to the fact that this mechanism ties the liquidity of global trade to the dollar, thus making it the de facto reserve currency worldwide.

The result of this is a clear structural advantage for the U.S., where they can just issue dollars at minimal cost, while other nations must produce tangible goods or services to earn them (Hudson,2003). An interesting consequence of this framework is the fact that the U.S. needs to run a trade deficit for it to work (**Figure 3**). This is due to the constant need for dollars to be circulating outside of the U.S., so that countries can keep using them for oil trade. A lack of dollars circulating worldwide may make it difficult for nations to cover all their oil needs, which may lead to them seeking alternatives, possibly disastrous for this hegemony.



Source: U.S. Census Bureau

Fig. 3. U.S. Trade Balance from 1960

One of the most important elements of this system is the so-called petrodollar recycling. It describes the process of when the oil-exporting nations, particularly those in the Persian Gulf, build up substantial surpluses of dollar revenues, they reinvest them into U.S financial assets such as treasury bonds, real estate and corporate equities (**Figure 4**). They do so as an alternative to converting those holdings into their local currencies, which would likely cause inflation. Thus, they not only stabilize their own wealth in a secure and liquid form, but they also channel their profits back into the U.S. economy (Spiro, 1999). This is not a process required by law or treaty, but due to the structure of the petrodollar agreement it is logically highly incentivized politically and economically.

Foreign Holdings of U.S. Treasury Securities as a Share of Outstanding Public Debt



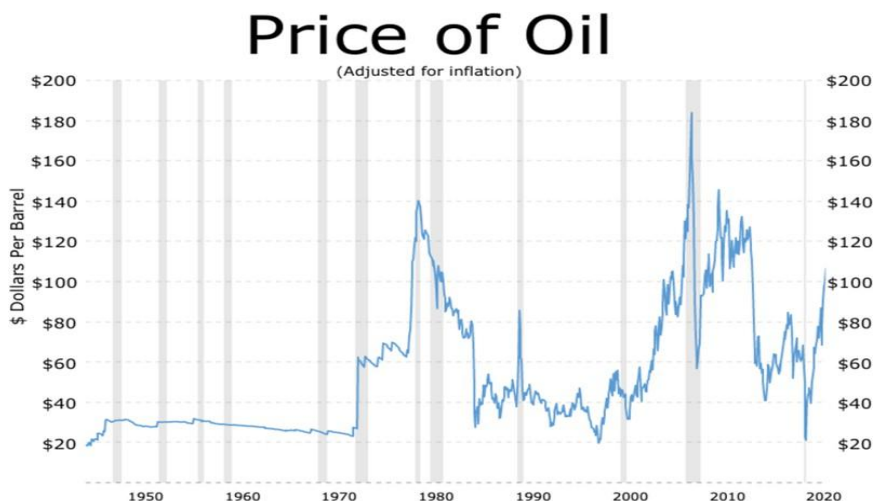
Source: Haver Analytics, Bloomberg, US Treasury, Federal Reserve, PIMCO

Fig. 4. Foreign holdings of U.S. Treasury securities as a share of Outstanding public debt

Through this continuous reinvestment of oil earnings into American markets, most U.S. fiscal deficits can be effectively financed, and capital markets can be sustained (Hudson, 2003). It is evident that this forms a self-reinforcing cycle of global energy trade and U.S. fiscal policy. The States pay in dollars for their imported oil and goods from abroad, while those same dollars then go back to their financial institutions as investment capital from the exporting nations. Thus, allowing the U.S. to maintain that chronic current accounts deficit, but without the balance-of-payments restrictions that normally limit other countries (Stiglitz, 2022).

The mechanisms led by the petrodollar system affect more than just national economic matters, they also have a tight connection with political affairs. Since the vast majority of global oil trade goes through U.S.-based financial institutions, the States effectively wield control over the whole global financial infrastructure. It enables them to impose sanctions, restrict access to payment systems and exert their influence over monetary policies of foreign nations (Clark, 2005). Those abilities give the U.S. a remarkable strategic advantage when they wish to assert their national interests worldwide.

The collective effects of these mechanisms have been described by scholars such as Michael Hudson as a form of “monetary imperialism”, in which the U.S. gains disproportionate global benefits through its ability to issue the world’s key currency (Hudson, 2003). Anchoring global energy trade to the dollar ensures that the States can finance their trade and budgetary imbalances not through productivity growth and fiscal discipline, but rather through monetary expansion. This arrangement might have had some short-term effects on global financial stability, but it has overwhelmingly caused long term distortions like debt dependency among developing nations, exposure to oil price volatility (**Figure 5**) and vulnerability to U.S. interest rate changes.



Source: Wikimedia commons

Fig. 5. Price of Oil and its notable jump as of the Petrodollar arrangement

GEOPOLITICAL AND ECONOMIC IMPACTS OF THE PETRODOLLAR SYSTEM

The petrodollar system reshaped both global finance and geopolitics. It linked the U.S. dollar to the most strategic commodity in the world – oil, thus securing Washington a monetary advantage extending far beyond its industrial and military power (Hudson, 2003). By intertwining global trade with dollar dependence, it allows the U.S. to exercise influence through not only military means, but also monetary.

As all countries need dollars for purchase of oil, most central banks hold significant dollar reserves. This dependency means the U.S. has extraordinary leverage – its monetary policy decisions go hand in hand with global liquidity, borrowing costs and exchange rates (Stiglitz, 2002). This de facto enforcement of dollar reserves within countries proves risky, as changes within the U.S. and their policies may negatively affect those dollar reserves, resulting in an economic downturn.

Geopolitical consequences of this system stretch far beyond the realm of economics. To maintain dollar hegemony over oil trade, the U.S. has at times engaged in direct or indirect military intervention. Scholars like Spiro (1999) and Clark (2005) argue that the main imperative for U.S. foreign policy in the Middle East has been the enforcement of dollar-based oil markets. Starting with the infamous Gulf War (1990-91), the U.S. strongly reaffirmed their grip over the Persian Gulf's oil infrastructure. Shortly after Saddam Hussein announced his decision to sell oil in euros instead of dollars came the 2003 U.S. invasion of Iraq. The result of which was that the first thing the new U.S. controlled government did, was to switch back oil sales to dollar. Then in 2011 came the NATO intervention in Libya, following the plans of Muammar Gaddafi for a gold-backed pan- African currency called

the “Gold Dinar”, with which he aimed to challenge the dollar and CFA franc, threatening French and American financial hegemony. Although U.S. military presence in the Middle East today is not as extensive as it once was, present control in the region is still at large **(Figure 6)**. In recent years, Venezuela can be observed as another point of conflict in regard to oil and the petrodollar. Possessing the largest petrol reserves in the world, they have made attempts to trade oil outside of the petrodollar framework, by seeking to extend ties and conduct business with China and Russia and use alternative methods such as euros, yuan and even cryptocurrencies. This has led to extensive sanctions and strict financial isolation over the Venezuelan economy by the United States. Tensions between the 2 sides remain high and although no official military enforcement has yet occurred, time will show if it is out of the picture.



Source: Council on Foreign relations; Al Jazeera

Fig. 6. U.S. military presence in the Middle East as of 2025

THE FUTURE OF THE PETRODOLLAR SYSTEM

With emerging global trends now challenging the monopoly of the dollar over energy trade, its dominance is becoming increasingly uncertain. The growing BRICS bloc, with China and Russia in the lead, has been pushing forward in their efforts to conduct oil and gas trade in Chinese yuan or other gold backed instruments. Recent agreements between China and Saudi Arabia allow partial oil payments in yuan, which represents a symbolic,

but crucial step toward de-dollarization. A decline in dollar's share of global reserves is evidence of countries swaying away from the established framework (**Figure 7**).

Expansion of digital payment systems and central bank digital currencies also opens new channels for international trade outside of the traditional dollar-clearing network. Such developments could gradually weaken the role of the U.S. Treasury as the primary safe asset of the world and thus reduce the automatic recycling of petrodollars into U.S. debt.

Losing Ground

Dollar's share of global reserves declines to 25-year low



Source: Bloomberg

Fig. 7. Dollar's share of global reserves

It is unlikely that a transition away from the petrodollar will be swift or orderly, as no other currencies yet match the dollar's liquidity, stability or political backing. It is doubtful that the system would collapse suddenly, but with energy trade diversifying and emerging economies seeking greater autonomy, the next decade will likely bring gradual evolution of a more plural global currency order.

CONCLUSION

Emerging as a response to the collapsed Bretton Woods order, the petrodollar system transformed oil into the new basis of global monetary stability. Intertwining global energy trade to the dollar, it allowed the U.S. to sustain their deficits and exercise power through financial means, instead of purely military. Critically, this framework led to significant inequalities, lasting dependance on fossil fuels and from there to resource motivated conflicts. Various initiatives by BRICS, yuan-based energy deals and emerging digital currencies threaten to erode this hegemony. The result of this shift will show whether the world will find a fairer and more sustainable system, or whether one form of imbalance will only be exchanged for another.

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THE ROLE OF INTERNATIONAL FINANCIAL INSTITUTIONS IN DEVELOPING COUNTRIES

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Abstract

This paper examines the role of International Financial Institutions (IFIs) such as the International Monetary Fund, World Bank and the regional development banks in shaping the economic development of emerging and low-income countries. IFIs provide financial assistance, policy guidance and technical support to promote macroeconomic stability, poverty reduction and sustainable growth. Drawing on evidence from Africa and Latin America, the paper explores how financial institutions arrangements influence development trajectories, while also considering criticisms of conditionality and public expenditure management. The findings emphasize how IFIs are evolving in response to global challenges such as climate change, digital transformation and geopolitical shifts.

Keywords: International finance, Development, Emerging economies, IMF, World Bank

JEL: F33, O19, H63

INTRODUCTION

In the contemporary global economy, International financial institutions (IFIs) have evolved into central actors in shaping macroeconomic policy, institutional reform and governance across the developing world. Their influence extends far beyond the provision of financial assistance- IFIs now serve as normative and regulatory agents in the international financial architecture, promoting policy frameworks that seek to enhance the stability, transparency and integration into global markets. Established under the Bretton Woods Agreement of 1944, the International Monetary Fund (IMF) and the World Bank were initially conceived as instruments for post-war reconstruction and the prevention of financial instability. Over subsequent decades, their mandates expanded substantially, encompassing development financing, structural adjustment and, more recently, sustainability and digital transformation. As a result, IFIs have become key players between global capital and national economic governance.

For many developing countries, engagement with IFIs constitutes both an opportunity and a constraint. On one hand, IFI-supported programmes provide critical access to capital, technical expertise and policy credibility that can facilitate economic recovery and strengthen macroeconomic resilience. On the other hand, such assistance is frequently conditional upon the implementation of specific policy reforms, commonly known as conditionalities, which, while designed to foster fiscal discipline and institutional efficiency, have at times been criticised for imposing austerity, constraining domestic policy autonomy and deepening social inequality (Birdsall, 2007). Consequently,

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the relationship between IFIs and developing nations is complex, simultaneously characterized by dependence, cooperation and contestation.

This paper contends that the developmental outcomes of IFI engagement are inherently context-dependent, shaped by the international financial governance and domestic institutional capacity. The effectiveness of IFI interventions varies according to political will, administrative competence and the degree of alignment between externally prescribed policies and local economic priorities. By examining the operations of key IFIs, particularly the IMF and World Bank, this study aims to assess their dual role as stabilising forces and agents of structural transformation in the developing world. Through a mixed-method analysis combining financial data, institutional theory and comparative case studies from Rwanda and Argentina, the paper seeks to illustrate both the achievements and limitations of IFI involvement in promoting sustainable economic development.

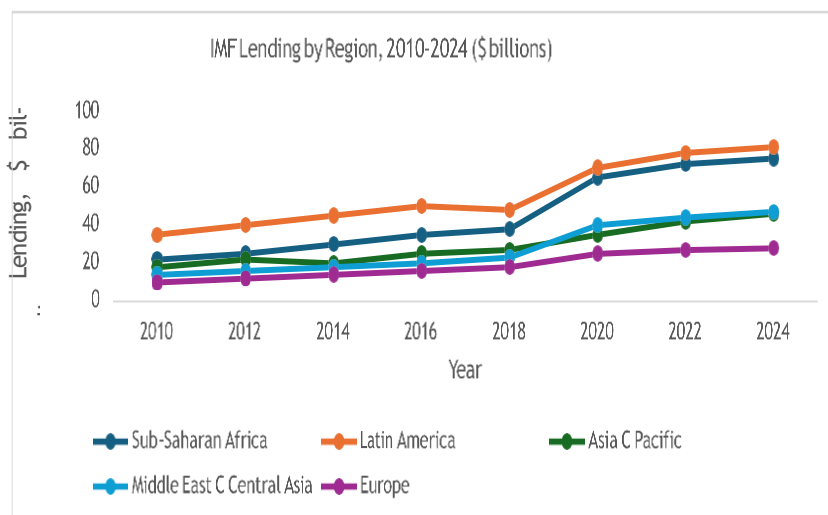
OVERVIEW OF THE FUNCTIONS OF IFIS

International financial institutions refer to multilateral organizations established by sovereign states with the objective of promoting global monetary stability, fostering economic growth and facilitating international trade and investment. Their primary function is to provide financial resources and technical assistance to member countries in times of need, while ensuring that global financial systems remain stable and predictable. The IMF was designed to maintain stability in the international monetary system by overseeing exchange rates, providing emergency liquidity and advising on macroeconomic policy. Its surveillance function allows the IMF to monitor member economies, identify potential vulnerabilities and recommend corrective measures. The World Bank Group focuses on long-term economic development and poverty reduction through project-based lending, technical assistance and capacity building.

Regional development banks such as the African Development Bank (AfDB), Asian Development Bank (ADB) and the Inter-American Development (IDB) were later established to address region-specific needs, from infrastructure development to trade facilitation and regional integration. These institutions collectively fill financing gaps, mobilize private investment, promote cross-border cooperation in the Global South. Over time, IFIs have evolved into powerful actors in global economic governance, expanding their influence beyond financial stabilization to include structural adjustment, governance reform and climate resilience initiatives. However, their growing role in shaping domestic policy priorities has sparked debate about national sovereignty, the democratic legitimacy of global financial governance and the social consequences of externally imposed economic reforms.

Financial support and instruments

One of the most visible and influential functions of IFIs lies in their ability to provide financial support to member states facing macroeconomic or developmental challenges. The IMF, in particular, provides short- and medium-term lending facilities to countries struggling with balance-of-payments crises, currency depreciation or debt distress. Its main instruments include the Stand-By Arrangement (SBA), Extended Fund Facility (EFF) and Rapid Financing Instruments (RFI), which are tailored to address immediate liquidity shortages or support longer-term reforms. These paradigms often come with policy conditionalities, requiring governments to implement fiscal consolidation, trade liberalization or public sector reforms. While such measures can restore investor confidence and macroeconomic balance, they can also impose significant social costs, particularly when implemented rapidly or without adequate safety nets. The debate over conditionality remains one of the most contested aspects of IMF investments, as critics argue it can constrain domestic policy choices and further increase inequality.



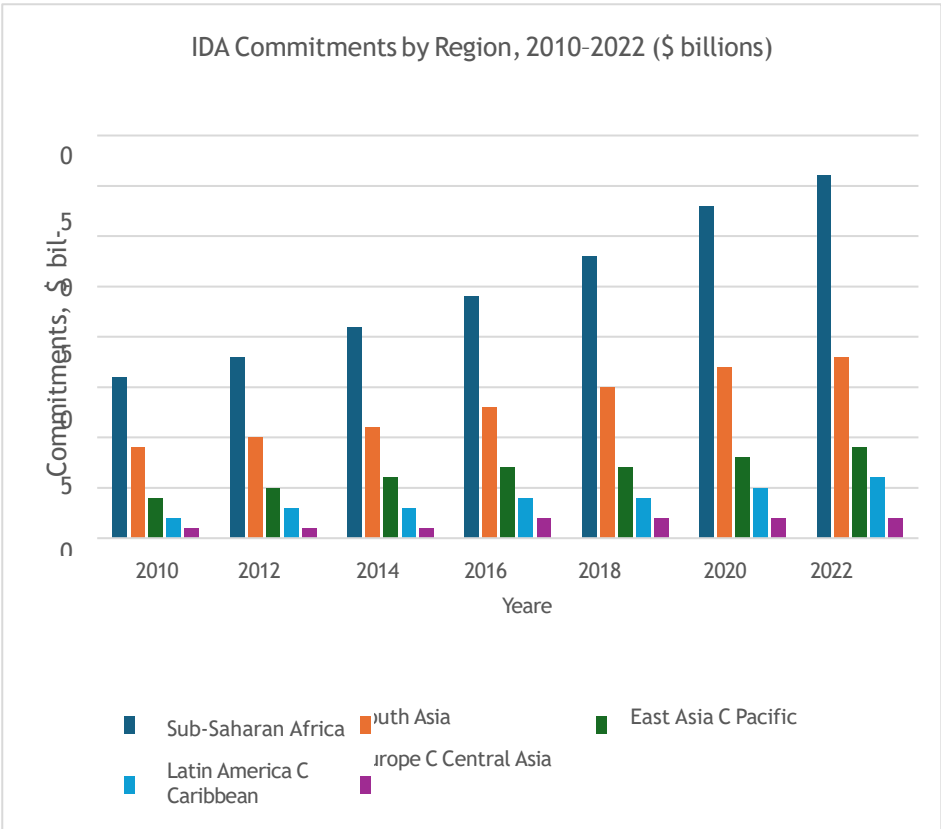
Source: International Monetary Fund (2024), IMF financial data portal: Lending outstanding by region and facility type.

Fig. 1. IMF outstanding by region, 2010-2024 (\$ billions)

The World Bank Group, by contrast, provides primarily long-term financing through the International Development Association (IDA) and the International Bank of Reconstruction and Development (IBRD). IDA's concessional loans- which carry low or zero interest rates and extended repayment periods- target the world's poorest countries. Between 2010 and 2022, IDA commitments averaged approximately \$34 billion annually, with around 70% directed toward Sub-Saharan Africa and South Asia

(World Bank, 2022). These funds are often allocated to sectors with high development impact, such as energy infrastructure, healthcare and education. Regional development banks such as the AfDB and ADB complement these global initiatives by addressing localized needs. The AfDB’s annual report of 2021 highlights a growing emphasis on green infrastructure and resilience projects, reflecting a broader shift in IFI priorities toward sustainable finance. Through blended finance and guarantee mechanisms, these institutions increasingly leverage private capital, making them key intermediaries between public funding and private investment.

Overall, IFI financial instruments have evolved from crisis-response tools into development catalysts. Their success, depends heavily on the governance quality and absorptive capacity and recipient countries. Strong institutions, transparent management and domestic policy ownership are critical to transforming external finance into lasting developmental outcomes.



Source: World Bank (2023) World development indicators and IDA commitments database.

Fig. 2. IDA commitments by region, 2010-2022 (\$ billions)

Policy Advice and Technical Assistance

In addition to financial support, IFIs play essential role in providing policy advice, institutional improve fiscal transparency and strengthen social protection programs. The assistance also extends to institutional reforms that promote effective governance. By supporting civil service modernization, public investment management and regulatory reforms, IFIs aim to build the state's capacity to implement sound economic policies. On the other hand, such policy prescriptions could often reflect a set of neoliberal principles emphasizing deregulation, privatization and fiscal irregularities- which may not always align with local social priorities. In the recent years, IFIs have acknowledged the limitations of purely economic approaches and increasingly integrate social inclusion, gender equality and environmental sustainability into their advisory frameworks. This evolution indicates a gradual, yet important, shift towards a more holistic understanding of development that balances economic efficiency with social justice.

CASE STUDIES- REGIONAL EXPERIENCES

Sub-Saharan Africa- Rwanda's development partnership

Rwanda offers a compelling case of successful engagement with International Financial Institutions. Following the devastation of the 1994 genocide, the country faced a collapsed economy, destroyed infrastructure and a deliberated public sector. Beginning in 1998, the IMF and World Bank became key partners in Rwanda's reconstruction strategy. Through the Poverty Reduction Mechanism and subsequent Policy Support Instrument programs, the IMF provided macroeconomic stabilization support that anchored fiscal discipline and lowered inflation from 64% in 1994 to under 5% by 2004 (IMF, 2023). Concurrently, the World Bank financed reconstruction and poverty reduction programs focusing on health, education and infrastructure. Projects such as the Rwanda Transport Sector Development Project helped rebuild the essential infrastructure and promote inclusive growth. Between 2000 and 2020, Rwanda's, GDP per capita nearly tripled, while the poverty rate fell from 58% to 38% (World Bank, 2022). These outcomes demonstrate how a country with strong institutional ownership and coherent governance can effectively leverage IFI resources. However, Rwanda's experience also highlights certain limitation. There are arguments that sustained dependence on concessional financing can risk creating aid dependency and inhibit domestic capital mobilization. Despite its progress, Rwanda remains reliant on external aid for approximately 15-20% of its annual budget (AfDB, 2021). The Rwandan case thus underscores that IFI engagement can be transformative only when accompanied by domestic policy leadership, fiscal accountability and gradual transition from aid to investment-led growth.

Latin America- Argentina's financial crises

Argentina's relationship with the IMF presents a markedly different narrative- one of cyclical crises on contested reforms. Since joining the IMF in 1956, Argentina has entered more than 20 programs, reflecting chronic macroeconomic volatility. The

country's 2018 Stand-By Arrangement (SBA), which is valued at \$57 billion, remains the largest IMF program in history. Intended to restore market confidence and address inflationary pressures, the arrangement required sharp fiscal tightening, monetary contraction and subsidy reduction (IMF, 2023). Initially, the program aimed to stabilize the Argentine peso and narrow the fiscal deficit. However, by mid-2019, GDP had contracted by 2.5%, inflation soared above 50% and unemployment climbed to 10% (World Bank, 2022). Even though the IMF's emphasis on austerity measures contributed to the country's economic prosperity, it could be argued that they overlooked Argentina's social vulnerabilities, eroding public trust and fuelling political instability. The economic turmoil contributed to the election of a new government that later sought to renegotiate the debt on more flexible terms.

In 2022, a revised Extended Fund Facility replaced the SBA, emphasizing growth-oriented fiscal consolidation and social spending safeguards, serving as an acknowledgment of past policy shortcomings (IMF, 2023). Argentina's experience underscores the complexities of applying uniform stabilization policies to diverse national contexts. It highlights that while IFI support can restore temporary stability, sustainable outcomes depend on domestic political consensus, structural reforms and inclusive growth strategies.

Together, the Rwandan and Argentine cases illustrate the dual identity of IFIs: as stabilizers that provide crucial support during crises, but also strategists whose policies profoundly shape national development trajectories. Their contrasting outcomes reveal that success depends less on the scale of external assistance and more on domestic institutional capacity, governance quality and policy coherence.

Criticism and Challenges

Despite their achievements, IFIs face enduring criticism regarding their conditionality frameworks, governance structures and social impacts. During the 1980s and 1990s, the IMF and World Bank introduced Structural Adjustment Programs (SAPs) requiring austerity, privatisation and trade liberalisation as conditions for lending. While intended to promote efficiency and fiscal balance, these reforms often led to rising inequality, reduced public services and social unrest across Africa and Latin America. Another major concern involves sovereignty and democratic accountability. IFI conditionality can limit national governments' ability to pursue independent fiscal or industrial policies. Moreover, governance within IFIs remain heavily weighted toward developed economies, particularly the United States and European Union, which collectively hold disproportionate voting power. This imbalance undermines the perception of IFIs as truly multilateral institutions.

In response, both the IMF and World Bank have undertaken reforms to enhance inclusivity and transparency. These include quota realignments to increase developing country representation and greater emphasis on social protection and budgeting. The World Bank's Country Partnership Frameworks and the IMF's Resilience and

Sustainability Trust launched in 2022 represent attempts to integrate sustainability and equity considerations into financial assistance (IMF, 2023; World Bank, 2022).

The future of IFIs in a changing global landscape

The 21st century presents a different environment for IFIs. The rise of new actors such as the Asian Infrastructure and Investment Bank (AIIB) and New Development Bank (NDB) signifies a diversification of development finance, reducing historical monopoly of Bretton Woods institutions. These emerging lenders, often less conditional in their lending, provide competition and alternative models of engagement. Simultaneously, climate change and digital transformation have redefined global development priorities. Both the IMF and World Bank now view climate resilience as a core mandate, with the World Bank committing 35% of its total financing to climate-related projects by 2025 (World Bank, 2022). The IMF, meanwhile, has incorporated climate risks into its surveillance reports and launched facilities to assist countries transitioning to low-carbon economies (IMF, 2023). Furthermore, IFIs are adapting to the digital revolution by supporting fintech ecosystems, digital public infrastructure and financial inclusion in developing economies. Initiatives such as the IMF's Fintech Agenda and the World Bank's Digital Economy for Africa reflect this evolving focus. The future effectiveness of IFIs will depend on their ability to balance traditional stabilization roles with innovative, forward-looking agendas that address both economic and environmental vulnerabilities.

CONCLUSION

The evolution of International financial institutions from post-war reconstruction agencies to complex development actors reflects their enduring relevance to global economic stability.

Through financial assistance, policy advice and institutional support, IFIs have contributed significantly to poverty reduction and macroeconomic resilience across the developing world. Rwanda's post-conflict recovery exemplifies how coordinated IFI engagement, grounded in strong domestic ownership, can foster long-term growth and institutional reform. Conversely, Argentina's repeated financial crises illustrate the pitfalls of rigid policy conditionality and the political fragility that can arise from externally imposed austerity measures. These case studies highlight a critical insight: the success of IFI programs hinges less on the financial magnitude of support and more on alignment between external objectives and national priorities. Effective collaboration requires shared ownership, transparent governance and social safeguards that mitigate adjustment costs.

Looking forward, IFIs face a world defined by climate change, digital transformation and geopolitical fragmentation. Their credibility will depend on their capacity to adapt- by democratizing governance structures, incorporating climate and social

resilience into their frameworks and fostering inclusive growth through digital innovation. The emerging competition from new institutions such as the Asian Infrastructure Investment Bank (AIIB) and the New Development Bank (NDB) underscores the need for Bretton Woods institutions to remain flexible, participatory and development-driven.

Ultimately, the continued legitimacy of IFIs will rest on their ability to evolve from crisis lenders into genuine partners in sustainable development, balancing financial stability with social inclusion and environmental governance. If successful, they can remain both stabilizers of global finance and strategists for equitable growth, guiding the developing world through the complex economic transformations of the 21st century.

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SHORT-TERM FORECASTS OF PRICE CHANGES OF GOODS IN BULGARIA AFTER THE CONVERSION TO EURO, JANUARY 1ST 2026

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Abstract

This report aims to examine the short-term forecasts of price changes in Bulgaria following its adoption of the Euro on 1 January 2026. It examines the likely short-term inflationary effects that accompany currency transition by analyzing previous data, cross-country experiences and econometric forecasting models. The analysis will include changes in Bulgaria's Consumer Price Index (CPI) and Harmonized Index of Consumer Prices (HICP). The main data sources used in this report will be extracted from Eurostat, as well as the Bulgarian National Statistics Institute. The four main categories we are going to explore are Food and non-alcoholic beverages; Alcoholic beverages, tobacco and narcotics; Clothing and footwear and Housing, water, electricity, gas and other fuels. A comparison with Croatia will be made in order to gain insight as to what they experienced when going through the euro changeover in 2023.

INTRODUCTION

The adoption of the euro represents one of the most significant monetary events in Bulgaria's modern economic history. As the country currently prepares to officially join the Eurozone on 1 January, exactly 19 years after it became a member of the European Union. Since this decision became public, attention has turned to the potential short-term impact it will cause on consumer prices. Although Bulgaria has maintained a long-standing currency board agreement with the Lev pegged to the Euro at the fixed rate of 1.95583 BGN per EUR, the whole nation is, nevertheless, concerned regarding potential price increases after the changeover.

The main objectives of this study are: to estimate potential short-term inflationary effects linked to the currency change; to identify the expected change of price of goods in the following categories – Food and non-alcoholic beverages, Alcoholic beverages, tobacco and narcotics, Clothing and footwear and Housing, water, electricity, gas and other fuels; to evaluate the role of perception and rounding effects. This report focuses on the period between January 2025 and December 2026, encompassing pre- and post- adoption stages to enable a comparative analysis.

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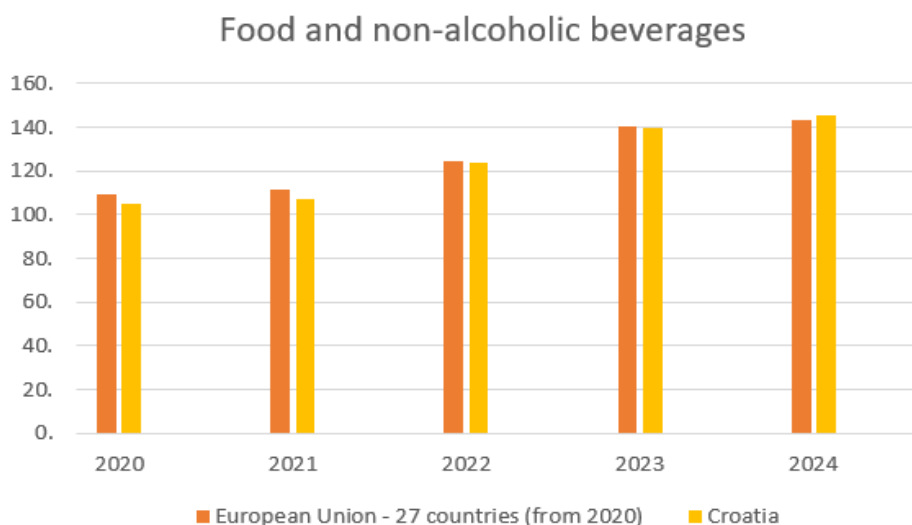
CROATIA AFTER ADOPTING THE EURO

Empirical studies on euro changeovers across the European Union provide valuable insights into the short-term dynamics of price adjustments. Research following the 2002 introduction of the euro in Western Europe (Mastrobuoni, 2004; Dziuda, 2009) indicated that the actual inflationary impact was modest, typically below 0.3 percentage points in annual CPI terms. However, consumer perception of inflation was often much higher due to rounding effects and increased price salience in low-value transactions. Subsequent studies in Slovakia (2009), Estonia (2011), and Croatia (2023) confirmed that although overall price stability was maintained, specific categories such as restaurants, personal services, and small retail goods experienced noticeable increases in the early months following euro adoption.

The European Central Bank released an article called “Has the euro changeover really caused extra inflation in Croatia?”, in which is stated that the overall impact on consumer prices was limited and temporary. Although Croatian consumers initially feared price hikes, official data show that inflation was already on a downward path when the euro was introduced – falling from 12.7 percent in December 2022 to 12.5 percent in January 2023 and 11.7 percent in February 2023. Some service sectors, such as restaurants, cafés, hairdressers, and healthcare providers, recorded higher-than-usual price increases in January 2023, yet these changes were largely consistent with seasonal patterns observed in earlier years. Analysis of microdata from major retail chains showed that approximately 65 percent of product prices remained unchanged during the currency conversion, 25 percent decreased, and only about 10 percent increased, indicating broad compliance with rounding rules and fair pricing guidelines. The ECB also highlights that, unlike in some previous euro adoptions, Croatian consumers did not report a sharp rise in perceived inflation compared with measured inflation, suggesting stable inflation expectations. Overall, the blog concludes that Croatia’s euro changeover produced only a small, one-off effect on prices, limited mainly to specific service categories, and that the transition to the common currency was smooth without generating significant inflationary pressure.

Let us take a deeper dive into the Harmonized Index of Consumer Prices of Croatia in the period 2020-2025 and comparing it to the EU average for our four categories – Food and non-alcoholic beverages; Alcoholic beverages, tobacco and narcotics; Clothing and footwear and Housing, water, electricity, gas and other fuels.

Food and non-alcoholic beverages



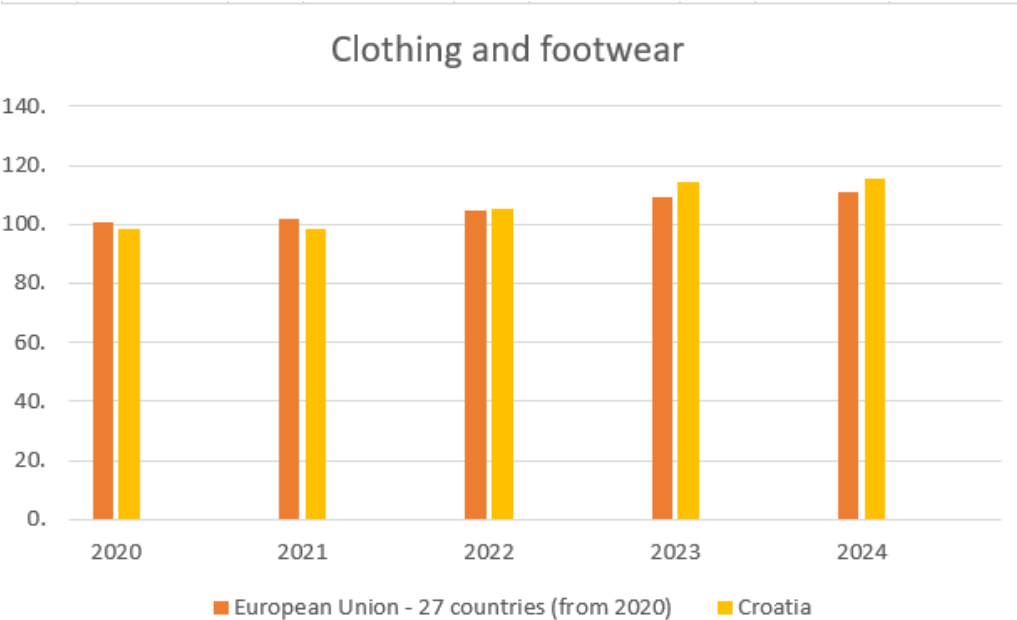
Eurostat – HICP – annual data (average index and rate of change)

The data indicate a strong upward trend in food prices across both Croatia and the EU, reflecting the broader inflationary pressures seen throughout Europe during this period. From 2020 to 2021, prices rose moderately, by roughly 5–7 percent, largely driven by pandemic-related supply chain disruptions and higher transport costs. Croatia's price level follows the EU trend very closely, with slightly lower values in the early years and near-equal or marginally higher prices by 2024. The convergence of the Croatian index with the EU average after 2023 suggests that the introduction of the euro in January 2023 did not trigger any exceptional surge in food prices beyond what was already affecting the entire European market. By 2024, the data show that Croatia's food and non-alcoholic beverage prices had largely aligned with the EU level, implying that euro adoption coincided with, but did not cause, the broader inflationary cycle.

Alcoholic beverages, tobacco and narcotics

Croatia's trajectory almost perfectly mirrors that of the EU average, showing no exceptional price jump associated with the country's euro adoption in January 2023. By 2024, Croatia's price index slightly exceeds the EU-27 average, indicating a continued but moderate upward adjustment likely linked to domestic tax policy and the alignment of excise structures with euro area standards. The relatively stable prices of the goods in this category may also be contributed to the fact that those goods are more strictly-regulated by the government by various policies, specifically excise taxes and VAT. Another reason is an initiative by the World Health Organization that aims to support countries in designing more effective pricing policies.

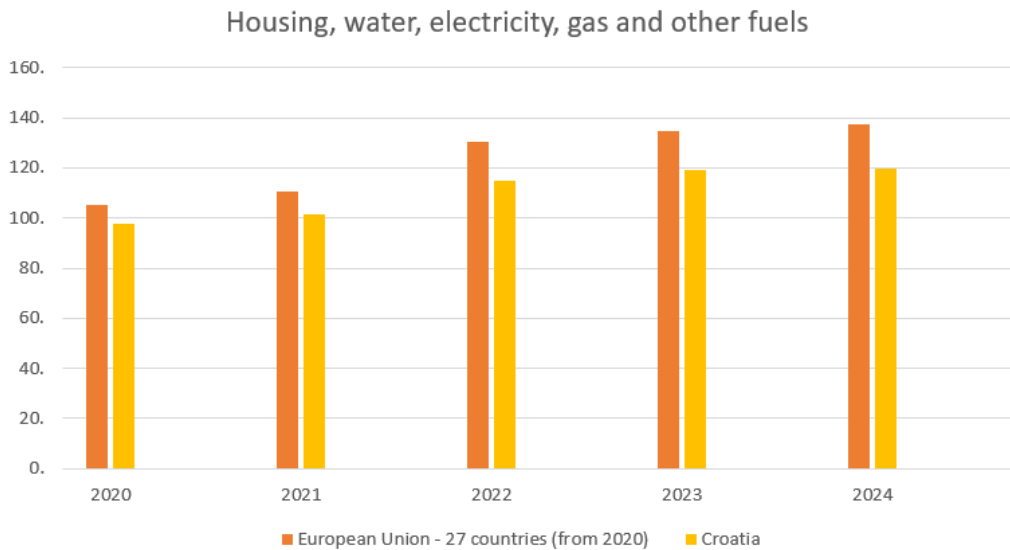
Clothing and footwear



Eurostat – HICP – annual data (average index and rate of change)

In this graph we notice that while the index in 2022 stood near parity with the EU-27 average, by 2023 it climbs significantly higher and remains elevated into 2024, suggesting a sharper price dynamic in Croatia than in the broader EU. Several factors likely explain this spike. First, though the official peg of the kuna to the euro remained, the transition to the euro created opportunity for rounding-up behaviour in retail pricing, and Croatian inspections found widespread cases of “unjustified price rises” soon after the changeover. Second of all, clothing and footwear are categories in which non-regulated retail prices allow more discretionary mark-ups, and Croatia’s inflation data indicate that in the months following the switch to the euro retailers took advantage of the vulnerable economic state of the country and began rounding-up the prices so as to become more profitable. The Croatian Bureau of Statistics records double-digit annual increases under its HICP series (11.9% in February 2023).

Housing, water, electricity, gas and other fuels



Eurostat – HICP – annual data (average index and rate of change)

In this category it is clearly noticeable that prices for housing and related utilities rose sharply in both Croatia and the EU. In the years prior to the changeover, Croatia's index climbs steeply, indicating increasing costs related to other factors, like the war in Ukraine. The Organisation for Economic Co-operation and Development (OECD) conducted a survey in 2023 amongst the Croatian population, in which it was noted that inflation in Croatia is driven by energy price increases. The convergence pressure in price levels following euro adoption may also have prompted adjustments toward higher “Euro-area” norms in tariffs and fees.

EXPECTATIONS AND POTENTIAL ECONOMIC RISKS FOLLOWING THE ADOPTION OF THE EURO IN BULGARIA (SHORT-TERM)

Between January and December 2026, the main risk to consumer prices in Bulgaria stems from two interacting channels: an episodic, micro-level re-pricing associated with the lev to euro conversion (including rounding and retail mark-ups) and a contemporary pass-through of external cost shocks into domestic prices. Even though the policy measures of the Bulgarian authorities, such as mandatory dual-display pricing, consumer-protection checks and monitoring of retail margins, materially reduce the probability of widespread, sustained price increases, short-term risks remain concentrated in high-frequency. If global commodity prices or freight costs spike in 2026, those external pressures would amplify any conversion-related upward adjustments and could turn a small one-time increase into

a broader, more persistent upward shift. If energy prices rise again or supply chains are disrupted, inflation in 2026 could be noticeably higher than before the euro changeover. But if global prices stay stable and Bulgaria enforces dual pricing well, any price increases caused by the euro switch should be small and mostly limited to the first few months of 2026.

Expected price changes for Food and non-alcoholic beverages

This category is exposed to two opposing forces: international commodity and transport cost movements (which dominate medium-term food prices) and local retail pricing behaviour (which can produce one-off rounding effects at conversion). Drawing on cross-country experience from previous euro changeovers and on the Bulgarian policy framework, a defensible estimate is that conversion-specific effects will add between +0.5% and +2.0% to the annual change in food prices in 2026 relative to what would have been expected absent the changeover; a central estimate near +1.0% is most likely. The lower bound assumes strict enforcement of dual pricing and absence of new input-cost shocks; the upper bound reflects scenarios in which small retailers round up frequently and domestic wholesale margins adjust upward temporarily. Importantly, these conversion effects should be interpreted as an add-on to whatever baseline food inflation emerges from global markets.

Expected price changes for Alcoholic beverages, tobacco and narcotics

This grouping is more strongly shaped by excise duties, taxation and regulated price components than by casual retail rounding. Historically, tobacco and alcohol prices move in step with fiscal policy rather than currency fluctuations; consequently, the euro changeover itself is unlikely to be a major driver of persistent price increases. Reasonable projections place conversion-related effects in this category in the range -0.5% to +1.0%, with a central expectation close to 0% (i.e., no meaningful net effect). Deviations from zero would mainly arise if authorities simultaneously adjust excise regimes or if retailers exploit conversion for opportunistic mark-ups in on-trade services (bars, restaurants), where some transient increases were observed in previous transitions.

Expected price changes for Clothing and footwear

Non-food retail (and clothing in particular) is the typical category for visible, discretionary price adjustments at currency changeovers. Retailers face low regulatory interventions on individual item prices and often re-price seasonally anyway. The conversion thus provides another occasion for mass modest list-price increases. Taking evidence from other euro adoptions, a credible range for conversion-driven upward pressure on clothing and footwear in Bulgaria for 2026 is **+1.0% to +3.5%**, with a central forecast of around **+2.0%**. The magnitude will depend on competition in urban retail centers, the mix of imported versus domestically sourced inventory, and enforcement of conversion transparency. If scanner-level competition remains strong (online retailers and large chains), upward pressure should stay near the lower end of the range.

Expected price changes for Housing, water, electricity, gas and other fuels

Similar to the alcoholic beverages, tobacco and narcotics category, this one is primarily determined by regulated tariffs, energy import prices and utilities' pricing after input costs. In practice, most observable increases in this category will reflect developments in wholesale energy markets, decisions by regulatory agencies on tariff adjustments, and the calendar timing of contractual resets. For 2026, the conversion-specific contribution to this category's price change is likely modest – a plausible range is **+0.25% to +1.5%**, with a central estimate around **+0.75%** – but total changes could be materially larger if energy prices rise or if regulated tariffs are adjusted upward as part of synchronized fiscal-regulatory reforms accompanying euro accession. In short, the euro itself is unlikely to be the principal driver; exogenous energy or policy shifts will matter far more.

PERSONAL FORECAST

Taking into account all previous points made, my opinion on Bulgaria's consumer price dynamics for the year 2026 is that the euro changeover will contribute a small, concentrated and one-off upward impulse to measured inflation – about +0.3 to +0.8 percentage points to annual CPI relative to all prevention techniques and policies that tackle the changeover price regulation. The bulk of that effect will materialize in the first quarter and will be concentrated in non-regulated retail and visible consumer categories (notably clothing and selected services), while food and utility-related movements will be dominated by global commodity cycles and regulatory decisions. I am not denying the natural upward impact that the consumer prices will face, however, I believe that an effective enforcement of dual pricing, active consumer communication and targeted and active inspections will reduce this realized impact.

CONCLUSION

The analysis of Bulgaria's expected price developments following the introduction of the euro on 1 January 2026 suggests that the overall inflationary impact will likely be limited, short-term, and concentrated in specific consumer sectors. Evidence from past euro changeovers, especially in Croatia, shows that while some retailers temporarily round up prices, broad and sustained inflation is rare. Bulgaria's authorities have already implemented measures such as dual pricing, enhanced market monitoring, and consumer-protection inspections, all of which should mitigate risks of unjustified price increases.

Short-term fluctuations are most likely in non-regulated retail sectors such as clothing and footwear, where pricing is flexible and visibility to consumers is high. In contrast, essential goods like food and utilities will remain mainly influenced by global market conditions, energy prices, and domestic regulatory decisions, rather than by the currency change itself. The lev's long-standing peg to the euro has already aligned Bulgaria's monetary conditions closely with those of the Euro zone, reducing the scope for dramatic price shifts.

Looking at 2026 as a whole, Bulgaria can expect a mild one-off increase in consumer prices of around 0.3–0.8 percentage points, largely contained within the first half of the year. The transition to the euro is therefore best understood not as an inflationary shock, but as an administrative and psychological adjustment: one that, if carefully managed, will strengthen Bulgaria's financial stability, enhance trade integration, and promote long-term price convergence with the rest of the European Union. Continued transparency, consumer awareness, and data-driven policy oversight will be key to ensuring a smooth, credible, and fair adoption of the common currency.

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FROM THE EUROPEAN UNION TO THE UNITED STATES OF EUROPE: HOW A FEDERAL STATE COULD RESTORE EUROPE'S GLOBAL INFLUENCE

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Abstract

In this paper, it is argued that the European Union should adopt a federation model of governance to regain its economic and geopolitical competitiveness. By examining fiscal policy, capital market integration, defence capabilities, and foreign policy, it reveals that the current confederal structure is insufficient to ensure long-term prosperity and strategic autonomy. Through comparison with the United States, it demonstrates that the absence of a unified framework in these areas has led to persistent structural divergence in favour of the US. The paper concludes that federalisation would strengthen the EU's economy and security, positioning it as a unified global power.

Keywords: Federation; Fiscal Union; Capital Markets Union (CMU); Common Foreign and Defence Policy

JEL: F55, H77, O52, F36, H56

INTRODUCTION

The debate that the European Union is lagging behind the United States has been quietly in the public space for almost 2 decades, initially it was confined mainly to academic circles rather than public discourse. It began after 2008, when the gap in terms of productivity, innovation, and economic growth between the United States and the EU began to widen. As of 2025, it has never been larger. The financial and the sovereign-debt crises on the old continent revealed a major flaw in the integration of economies, united by a single currency but not bound together with a common fiscal policy.

Somehow, the person who saved the Eurozone from total collapse is the one who opened the eyes of the top-ranked politicians from the Commission and Member States on how grave the problem really is. Mario Draghi, a former ECB governor and Italian Prime Minister, published a report that provides a detailed account of all the areas in which the EU is falling behind the United States and, unlike in 2008, also behind China, an economy which back then was 4 times smaller than this of the EU, as of 2024 they are almost at parity (World Bank Group, 2024). After the report was presented officially in the presence of the EU Commission Chief, it sparked discussions all over the continent, this time between political leaders and even ordinary citizens. Only one year later, although slow, some of the recommendations in this document are already beginning to witness progress.

On the other hand, the Russian war in Ukraine and the election of Donald Trump for a second term revealed two other major deficiencies in the model of the Union – relying

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on external counterparts for strategic raw materials but most importantly – relying on one external country to grant the defence of all the 27 member states to the point that decades of underinvestment have to be compensated for one night.

In this context, nationalism and euroscepticism are on the rise among almost all member states. Extremist right-wing political parties are wreaking havoc, calling for the dissolution of the union and returning to greater “sovereignty”. What is missing in their narrative, though, is economic rationality and historical awareness, because the European project is not perfect, but it has brought peace to a continent that was torn apart in bloody wars for millennia. Nevertheless, this must not be a consolation. Our union can be stronger, safer, and wealthier. We have all the necessary preconditions to regain our place among the best innovators and to escape the economic stagnation in which we have been since the Financial Crisis. Unfortunately, this is a tall order. Strong political leadership and unshakable desire are required in order for this to be achieved. It will not happen overnight, but the sooner decisive actions are taken, the better.

The path is only one – towards a federal state, under a shared constitution, its own army, common fiscal policy, and united foreign affairs stance, all of which without undermining the peculiarities of the cultural backgrounds in the member states. We shall now examine why there is no other way forward.

HISTORICAL LESSONS: FEDERATIONS ARE BORN IN TIMES OF CRISIS

A federation is a political system formed by the unification of smaller entities, such as states or provinces, under a central government that manages nationwide issues while granting autonomy to local governments. (Auerbach, Federation, 2024). Contemporary federations are typically born in response to an adverse external shock that mobilises the citizens of neighbouring countries to act as a coherent whole in respect to the external world. The best example is the United States of America, not only because it is a truly successful country but also because the circumstances that shaped it as a federation are not very different from those the EU is currently facing.

After the American Revolution, the U.S was governed under the *Articles of the Confederation*. (Articles of Confederation (1777), n.d.). The Confederation, unlike the federation, lacks a strong central government; instead, it is limited to coordinating functions, just as the EU nowadays. Under the Articles, the central government could not tax effectively, could not regulate interstate commerce, and lacked a reliable mechanism for defence or enforcing treaties. *This proved to be a problem in times of war, interstate trade issues, debt crises, etc.* (Office of the Historian, n.d.). After large debt accumulation by some of the states, surging inflation, inadequate tax revenues, internal rebellions related to the poorly performing economy, and low international credibility stemming from the absence of a head of state who could conclude international deals, the political leaders realized that this state structure would not lead to prosperity. Thus, in 1787 in Philadelphia, the federal state was instituted with a new constitution that established the federal government with the *core tasks to conduct common defence, fiscal,*

monetary, and foreign policy, while the states retained a certain degree of autonomy. (Joseph, 2017). The new constitution not only allowed the central government to allocate massive funds towards large industrial projects, to pass legislation that is streamlined for all companies in all the states, but it also consolidated a single geopolitical actor with a strong, united voice on the world stage.

THE EU AS A CONFEDERATION: STRUCTURAL LIMITATIONS

Our union began as a peace project after World War II. Its idea was to tie economically the always confronting France and Germany, making them interdependent and thus eliminating the likelihood of a new conflict. Although its historical development can be a topic for a separate paper, it must be mentioned that the first treaty was signed in 1951, creating the European Coal and Steel Community. This was the first small step towards deep integration and shared decision-making, yet more than 70 years later, we are far from achieving what was achieved across the Atlantic in just 10 years.

Yes, we are 27 different states with different historical backgrounds, different customs, religions, and we do not even share a common language. However, as of today, the EU has evolved in a way that perhaps even Schuman had not imagined. We share a common monetary policy, we have the largest single market in the world, and we are free to live anywhere within the union. Unfortunately, this is not enough. Mainly because even though our progress seems great on the surface, it is flawed in its essence, as it does not function as it is designed to do. Certainly, the absence of a single body to oversee key processes is a big part of the problem.

STRUCTURAL CAUSES OF THE EU'S COMPETITIVENESS GAP

According to a recent IMF report, the *EU's internal barriers are equivalent to a tariff of 45 per cent for manufacturing and 110 per cent for services.* (Kammer, 2024). This exposes the hidden economic cost of fragmentation and makes us doubt whether we truly have “a single market”. International capital markets were agonizing in April 2025 when Donald J. Trump announced broad tariffs on many countries on “Liberation Day”, yet no one seems to consider the tariffs we have at home. It seems that no one is willing to address the issue that an equivalent of 45% customs duty destroys economies of scale and discourages cross-border investment, which makes supply chains less agile, less efficient, and deepens even further the economic gap between rich and poor member states, as developing member states are “paying” these tariffs with uncreated jobs.

The cited IMF report also mentions the wide gap in labour productivity, which, according to their estimates for the advanced member states, is 15% behind that of the US. As a result, per capita income is 30% below that in the US.

The Draghi report outlines the root of the EU's sluggish competitiveness – *the failure to meet the 3% of GDP target for R&D that the European leaders set on their own over two decades ago* (Science Europe, 2024). Furthermore, *technological change is accelerating rapidly. Europe largely missed out on the digital revolution led by the internet and the productivity gains it brought; in fact, the productivity gap between the EU and the US is largely explained by the tech sector. The EU is weak in the emerging technologies that will drive future growth. Only four of the world's top 50 tech companies are European.* (The future of European competitiveness Part A, 2024, p. 7).

The underlying causes of this divergence include excessive regulatory complexity, insufficient policy coordination, fragmented and underdeveloped capital markets, and the absence of a unified fiscal framework.

THE CASE FOR A FISCAL UNION

According to research conducted by The European Centre for International Political Economy, *if EU member states were treated like US states in terms of GDP per capita, many of them would rank among the poorest.* (Erixon, Guinea, & Roy, 2023). For instance, France and Germany (in 2000) were similar to those US states, ranking around 31st–36th, but by 2021, they dropped even further, to positions comparable to 48th (Arkansas) for France and 38th (Oklahoma) for Germany. This fact clearly illustrates that the economic divergence between the EU and the US is a persistent and structural issue.

Therefore, it will not be exaggerated to say that the cost of not having a federal state is being paid by all of us all the time. It has a monetary value that we can easily estimate – as of 2024, the nominal GDP per capita of the US is 85 809.9 USD compared to 43 145.2 USD (World Bank Group, 2025) in the EU. In other words, the average EU citizen is only half as productive and wealthy as the average American. Here, some may argue that in the EU, there are many new member states that are still transitioning to a market economy, and therefore, they are decreasing the final figure. The truth is that if there was a single government with a unified budget greater than 1% of GDP, such regional differences would have a far subdued effect. In contrast, the US federal budget was 23% of GDP in 2024. (Fiscal Data, 2025) *Fiscal transfers, regional investments, and automatic stabilizers that each national budget of a country (both federal and unitary states, yet not true for confederations) incorporates tend to reduce the divergence between richer and poorer regions.* (Poghosyan, Senhadji, & Cotarelli, 2016). They do so by ensuring risk sharing, smoothing regional economic shocks (if one region is in a recession, it can receive financial aid from the taxes collected from well-performing regions, thus reducing the risk of severe recession, major unemployment, and social unrest), and redistributing income in order to reduce long-run income and output divergences.

Next, according to Draghi, *our union needs 800 billion EUR per year in public and private investments to remain competitive.* (The future of European competitiveness Part A, 2024, p. 65), corresponding to 4,7% of GDP. Not surprisingly, this is an amount far

beyond the current budget, so there is only one way to achieve it – through a combination of common borrowing and private capital, mobilized on a deep Capital Markets Union.

Common borrowing has been a sensitive topic for decades and has always been confronted by the so-called “Frugal Four” (Austria, the Netherlands, Denmark, and Sweden). In their view, issuing common debt with member states with already elevated debt-to-GDP ratios poses a risk for their fiscal viability. Nevertheless, due to the unprecedented juncture of unfavourable conditions, even these countries accepted borrowing alongside the rest of the member states – during the COVID- 19 pandemic, the proposed by the Commission “*Next Generation EU*” plan is, namely, financed by common borrowing. (EU Commission, s.f.). The EU Commission acted as a single issuer, backed by the full EU budget – something that happened for the first time in the history of the union. Therefore, considering that the EU has already issued EU bonds as a single issuer, we can say that the idea of a fiscal union is not so remote and unimaginable.

Finally, a common fiscal policy will address the problem identified by Mundell for asymmetric shocks in a single currency area. (Hafner & Jager, 2013) Mundell argued that because countries cannot use the exchange rate to adjust to economic shocks when part of a single currency union, labour mobility and fiscal transfer need to be present to absorb these asymmetric shocks. Currently, labour mobility is already present; the missing element is adequate fiscal transfers – something that only a shared budget in the context of a fiscal union can grant. This will not only make the EU economy more resilient by reducing the default risk, but it will also strengthen the global credibility of the euro, thus increasing investor confidence and attracting larger foreign capital.

THE STRATEGIC NECESSITY OF FINANCIAL INTEGRATION AND AN EU SAFE ASSET

Another profound structural difference between the EU and the USA lies in the functioning of their financial markets. Despite being formally a single market, the EU remains highly fragmented, with each member state maintaining its own supervisory framework (such as consumer protection authorities, competition and financial regulators, etc.). This regulatory fragmentation creates barriers to cross-border finance and discourages startups, which instead prefer the more unified and streamlined environment of the United States. The US financial markets are the deepest in the whole world. If the union is federalized, there is a strong likelihood that a similar result might be achieved (though some cultural factors, such as risk appetite, will certainly obstruct outperforming the US). According to a piece of research conducted by the Centre for Economic Policy Research, the EU’s GDP could be roughly 1.5% higher within 10 years if the union had capital markets as deep and integrated as these of the US, and could rise between 4 and 6% in the long-run if the extra investments flowed into innovation and R&D rather than just physical assets. (Venditti, Caivano, Cova, Pallara, & Pisani, 2025). Therefore, part of the US outperformance can be explained by its flawless financial architecture that mobilizes private savings towards high-yield sectors, not just

with superiority in the real economy. EU households already have high savings, what impedes these savings from being channelled to the real economy, to the entrepreneurs, is the fragmented capital market's structure; on the contrary, these savings are locked into the banking system at close to zero interest rates.

(Pekanov, 2024) describes the progress towards CMU as “minimalistic”. He argues that the lack of an adequate financial market architecture puts excess burden on the ECB because there is practically no private risk-sharing mechanism, nor automatic stabilizers and fiscal transfers, all the risk is borne by the Central Bank that has to intervene disproportionately to stabilize markets using its monetary policy tools (for instance: interest rates, QE, emergency bond purchases) at time of severe necessity. Thus, all Eurozone member states are exposed to higher vulnerability of asymmetric shocks as the real mandate of the ECB – to maintain price stability – is undermined.

A genuine Capital Markets Union shall include harmonized insolvency legislation and supervision, enabling cross-border listings on a single exchange, which will create a deep, liquid capital market that will enable EU companies to finance growth on scale. It would also reduce the dependence on monetary policy as private risk sharing would be absorbed by diversified portfolios across the Union, not by the Central Bank.

What is more, a central pillar of a functioning CMU is a common safe asset, therefore, an equivalent to the risk-free US Treasuries ought to be established. Currently, there is no unified EU benchmark bond (although the German debt is usually used as a reference). Instead, European sovereign debt is issued at the national level, with significant differences in credit ratings and yields. As the ECB itself has observed, *this fragmentation prevents the formation of a unified benchmark yield curve and limits the euro area's capacity to mobilize savings effectively across borders* (Bletzinger, Greif, & Schwaab, 2023). As already discussed, the common bond issuance under “Next Generation EU” has resembled safe asset characteristics, as low yields and high demand were observed. However, this package is with a limited time frame and scale, it also differs fundamentally from a permanent safe asset backed by the full faith of a fiscal authority with taxation and debt issuance capacity. This is a tremendous constraint to the development of genuine CMU, similar to the overall financial architecture of the USA.

An EU safe asset would deliver 4 major structural benefits. First and foremost, it would establish a benchmark interest rate for loans, mortgages, corporate bonds, etc, similar to the way the US Treasury Bonds function. In theory, this should reduce borrowing costs since the new bond would be backed by the second-largest economy. Lowering the benchmark would not only allow companies to issue lower-yielding bonds, but it would also imply lower interest payments from the central budget. Secondly, it would provide additional financial stability by providing a secure store of value for institutional investors and central banks. Third, it would provide greater liquidity, thus facilitating investments on scale. Lastly, it would strengthen the international role of the single currency as less capital would be pouring into the US, which would also increase the geopolitical weight of the old continent, as the US would no longer enjoy such capital abundance.

BEYOND ECONOMICS: THE UNITED STATES OF EUROPE AS A GLOBAL SUPERPOWER

The purpose of our Union goes far beyond just economic prosperity, even far beyond any material possession. In its core, it is all about shared understanding of freedom – freedom of every citizen to be who they want to be, to express their identity through their ideas, voices, and opinions, be it on the central squares, be it online or on paper (as long as it does not harm others). These fundamental rights (respect for human dignity; freedom; democracy; equality; rule of law; respect for human rights, including the rights of persons belonging to minorities) are enshrined in the Treaty of Lisbon to guarantee that the wellbeing of everyone is protected by the rule of law. Unfortunately, this document does not address threats coming outside of the territorial scope of the Union.

Following World War II, Western European states informally entrusted their security to the US through NATO, creating long-term strategic dependence that persists to this day. European leaders assumed that US protection would remain guaranteed indefinitely. This is why *the last time the EU met the 2% of GDP defence spending target prior to the Russian invasion of Ukraine was in 1993* (World Bank Group, 2025).

In comparison, for the same period, the *US has never fallen below 3% of GDP* (World Bank Group, 2025). These decades of suboptimal investments in defence have now proved to have been a mistake. Today, when the US has embarked on an isolationist period for which it is unknown when it will end, while the aggressive Russian actions, *such as cyberattacks and disruption of critical infrastructure* (European Council, 2025) have never been more pronounced, one thing is clear: the EU must be able to grant its security regardless of who sits in the Oval Office.

Unsurprisingly, a federal model is the best solution for this task as well. Because a defence structure under a single command will replace the current fragmented national armies, thereby enabling the pooling of resources, which will eventually enhance coordination and operational efficiency. It will also make decision-making faster and smoother, will facilitate procurement and strengthen EU supply chains, reducing dependencies on external suppliers, and most importantly, it will turn the whole defence of the block into a single, coherent system. The synergetic effects will contribute to economies of scale, elimination of duplicate positions and structures among national armies, and will make the EU Federation an awe-provoking international superpower.

Fortunately, as was the case with the fiscal union, there are already signs, though minuscule, that EU policymakers are also beginning to embrace this idea. The first one is the EU Defence Industrial Programme, whose intent is exactly through a common EU-level procurement to raise funds for critical defence products for Ukraine, but also to strengthen the union's own defensive capabilities. At the same time, it also provides for boosting the competitiveness of local suppliers, *as the cost of components originating outside the EU and associated countries (EEA states) should not exceed 35%*. (European Defence Industry Programme, 2025). The next two initiatives are the European

Drone Wall and the European Sky Shield. The first one aims to establish an innovative drone and counter-drone ecosystem as a reaction to the Russian provocative violations of member states' airspace. The second one was launched by Germany in 2022 and consists of integrated air and missile defence systems. The similarity between them is that both rely on joint procurement and integrated command structures.

Finally, if the EU became USE, this would imply a single European Foreign policy, which is currently absent. Nowadays, it often happens that individual states block collective foreign statements (usually Hungary and Slovakia) – this undermines the credibility and the weight of the union and erodes its influence as a global force. A world leader stays united and confidently articulates its geopolitical stance. Under a federation, there will be a single foreign policy authority with a clear mandate to negotiate and act on behalf of the entire federation. When this foreign authority is backed by the strength of a single European army and a shared budget (that guarantees that there is capital available for the promises given), the geopolitical weight of the block will increase exponentially, and perhaps it will be invited to the table when the big conflicts are being discussed.

OPPOSITION TO FEDERALISATION

As already outlined, a federal model has many arguments in favour. However, a great percentage of the citizens in all the member states have to vote for this idea in order for it to come true. In the past, attempts to make official steps towards a federation have failed. For instance, in 2005, France and the Netherlands held national referendums for the adoption of a European Constitution, both of which resulted in rejection. By contrast, most other member states had either already ratified it or were in the final stage of ratification in their national parliaments, reflecting broad institutional support across the Union. Twenty years later, however, there is a whole new generation that does not know what a “visa” or “border control” means, so the likelihood of a different outcome is now higher.

Other caveats for the federal project are the rising far-right movements (for instance: AfD, National Rally, and Vazrazhdane) in many member states. A federal model would require amendments to the EU Treaties, which must be approved unanimously by the European Council and subsequently ratified by all Member States. If such parties continue to push their agenda, even if they do not come to power, they will render the task harder, as centrist parties tend to feel obliged to adhere to some of their ideas in order to attract part of the far-right voters. The most recent example is *Friedrich Merz, who adopted a key topic of AfD's immigration agenda, calling for large-scale deportations* (The Guardian, 2025). Finally, a Treaty change compatible with the Federalist idea would imply the abolition of the unanimity vote on key topics (Taxation, Defence, Foreign Policy). There are currently countries, such as Hungary, Slovakia, and to some

extent Poland and Austria, that often use the veto power, so they might be reluctant to vote in favour of the abolition of this right.

CONCLUSION

Undoubtedly, the European Union brought long-lasting peace to a continent historically torn by bloody wars. It achieved it through economic integration, which made the largest countries interdependent. This formula achieved more than just peace – it created a family of countries whose citizens are free to execute their free will, as long as they adhered to the rule of law. The freedom led to increased economic activity and eventually, one of the highest standards of living anywhere in the world.

However, in the past several years, it is obvious that the current form of the union has reached its potential to the point of no possibility for further growth. The current confederative model makes member states less competitive than they used to be and clearly less competitive than their major peer, the US, in terms of economy and geopolitical weight.

The solution is simple yet not easy to achieve – a strong federal state, the United States of Europe, united by a single budget, protected by an army responsible to one authority, articulating its geopolitical stance in one strongly united voice, raising capitals through a coherently joint financial system, all under a common constitution. This is the only way in which the old continent can win the technological and economic race, which it is currently starkly losing.

Furthermore, there are already visible signs that the political leaders across member states, along with the Commission and the Council, are slowly realizing that this is the only way forward. Their actions support the central thesis of this paper – common borrowing for the Next Generation EU initiative, joint procurement for rearmament, and shared defence projects, coordinated by a single authority.

Lamentably, the previous examples are far from enough. For the federal state to be institutionally officialised, a Treaty change is needed – it must be voted on with unanimity, which seems a significant hurdle in the current political conjuncture, marked by rising far-right voices. Therefore, a wide political debate on the future of our union is needed. This debate must be conducted with strong arguments and should appeal to all citizens eligible to vote across the member states, because without enough social approval, the legitimacy of such a big project will be undermined and might cause social unrest in the near future.

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ADAPTING MARKETING CAMPAIGNS ACROSS CULTURES: LESSONS FROM INTERNATIONAL COMPANIES

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Abstract

In the age of worldwide digital media, marketing managers have to find a careful balance between keeping a consistent brand image and changing campaigns to fit different cultural views. This article looks at how five global companies- Dove, Netflix, KFC, Coca-Cola, and H&M- have dealt with this problem. It uses cultural and branding ideas from Hofstede, Hall, and Levitt to point out key lessons and suggest a new tool: the Brand Resonance Matrix (BRM). The matrix helps marketers decide how much to change a campaign based on cultural differences and how central the brand image is. The study suggests that brands do well across cultures when they value local symbols and views while protecting their global image.

Keywords: cross-cultural marketing; localisation; brand identity; adaptation; international companies

JEL Codes: M31, F23

INTRODUCTION

The fast growth of global markets and the open nature of digital media have made cultural adaptation a key skill for marketers. Global ad campaigns can quickly reach people in many societies, but their meanings can change in different cultural situations. Something that provoke emotional responses or humour in one culture might confuse or upset people in another (Hall, 1976).

Global companies must then answer a key question: what parts of a campaign should stay the same everywhere, and what parts should be changed to fit the local culture? The wrong choice can hurt a company's image or cause it to lose money. The right choice can turn a global campaign into a local success. This article studies how multinational companies have adapted (or failed to) marketing campaigns across cultures and points out lessons from successes and failures. It focuses on the balance between a global brand image and local cultural needs. By using comparative analysis, the article suggests a new model- the Brand Resonance Matrix- to help managers make decisions in cross-cultural marketing.

THEORETICAL BACKGROUND: CULTURE AND CONSUMER BEHAVIOUR

Defining Culture in Marketing

Culture is the shared set of beliefs, values, rules, and actions that affect how people see the world and understand messages (Hall, 1976). In marketing, culture affects what

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motivates people, how they react to different symbols, humor, colors, and how they make decisions

Cultural Dimensions

Hofstede's model (2001) includes ideas such as individualism compared to collectivism, power distance, uncertainty avoidance, masculinity compared to femininity, and long-term focus. These ideas affect ad choices. For example, people in individualistic cultures react better to messages about personal success, while those in collectivist cultures prefer messages about group harmony (Hofstede Insights, 2023).

Hall's (1976) division between high-context and low-context cultures makes this understanding even clearer. In high-context cultures (like China, Japan, and India), meaning depends on social connections and unspoken signals. In low-context cultures (like the U.S. and Germany), communication is clear and direct.

Standardisation vs Localisation

Levitt (1983) supported using standard global marketing to be more efficient, but later experts (Zhou & Zhang, 2012) stressed changing marketing to fit local values. Most successful companies now mix both ways- global strategy with local action.

Culture, Branding, and Digital Transformation

Digital platforms make global branding even harder. While campaigns can now be made for each market almost instantly, there is also a bigger chance of misunderstandings if cultural nuances are missed. In this situation, cultural adaptation needs both planning and quick reaction in real time (GraffitiStudio, 2025).

METHODOLOGY

This article uses a comparison of case studies with data from academic papers, industry reports, and company sources. Five cases were picked based on the following criteria: 1) global reach and cross-cultural marketing efforts; 2) availability of reliable information; and 3) how well they show the balance between brand image and local adaptation. The companies chosen- Dove (India), Netflix, KFC (China), Coca-Cola ("Share a Coke"), and H&M- come from different industries. Each case is studied based on five things: (1) campaign situation, (2) cultural element, (3) adaptation plan, (4) result, and (5) connection to theory.

CASE STUDY COMPARISONS

Dove – Real Beauty Campaign in India

Context: Started by Unilever in 2004, Dove's Campaign for Real Beauty tried to challenge limited beauty standards and redefine what it means to be feminine in different

cultures. It followed results from a global study, *The Real Truth About Beauty* (Etcoff et al., 2004), which found that only 2% of women thought they were beautiful.

Cultural Element: In India, beauty is often linked to social approval, marriage chances, and skin color. This cultural situation created both a challenge and a chance for Dove: to keep its global support for “real beauty” while dealing with India’s specific social pressures about looks (Prabhakar, 2025).

Company Action: To make its global message local, Dove started campaigns like *The Beauty Report Card* (2016) and *#StopTheBeautyTest* (2021). These campaigns changed beauty expectations by using Indian ideas- like school grades and marriage evaluations- to show the unfair social “tests” that women face. Research by Prabhakar (2025) shows that Dove’s local plan mixed universal ideas of self-esteem with stories that fit the culture, supported by emotional campaigns aimed at young people aged 15–24.

Outcome: The campaign had a strong emotional impact but mixed business results. Among Indian youth, 40–45% of teenagers and 30–35% of young adults said they had more positive views of Dove, calling the brand real and aware of social issues. But, the interest in buying Dove products stayed moderate because of things like existing skincare habits and views of product benefits. While Dove was able to build trust and cultural relevance, people warned against “tokenism,” stressing that lasting authenticity is key for purpose-led branding (Prabhakar, 2025).

Theoretical Link: This case matches Quadrant 2: Calibrate & Localise in the Brand Resonance Matrix. Dove kept a strong global image focused on “real beauty” (high brand image importance) but changed its actions to fit India’s unique cultural situation (high cultural difference).

Netflix – Localised Storytelling

Context: By 2016, Netflix had changed from a U.S.-based service into a global platform in over 190 markets, creating local content and marketing plans. This was a big jump from about 50 countries in 2015 (Harvard Business Review, 2018).

Cultural Element: Entertainment choices show group or personal values; collectivist groups prefer stories about relationships and morals.

Company Action: Netflix localised content (like the Korean hit *Squid Game*) and used culturally important symbols while keeping its global promise. When needed, it changed format franchises (like local versions of global reality shows) (Blend, 2023).

Outcome: Since 2023 and the global success of the Korean localized show *Squid Game* gave Netflix a boost in brand confidence, viewership, subscriptionship and shareprice. (Netflix Annual Reports, 2025) Investor confidence is reflected in revenue growth estimates of 15.5% for 2025. (Zacks, 2025).

Theoretical Link: Netflix maintains brand identity as an inclusive storyteller while flexibly localising narratives – Q2: Calibrate & Localise.

KFC China – Reinventing Fast Food

Context: KFC entered China in 1987 and had outlets across 700 cities and more than 250 thousand employees (HBR, 2011).

Cultural Element: Chinese dining focuses on sharing and freshness, unlike individualism in Western fast food.

Company Action: KFC developed congee breakfasts and local flavours; stores were adapted to welcome customers to come with family and friends, which is typical for Chinese culture in contrast with the U.S., where KFC is associated with fast dining. (HBR, 2011)

Outcome: KFC holds roughly 40 % of China's fast-food market, outperforming McDonald's (HBR, 2011).

Theoretical Link: High flexibility with moderate brand identity retention – Q3: Reinvent for Relevance.

Coca-Cola – “Share a Coke” Campaign in Australia

Context: Started first in Australia (2011), Share a Coke put popular local names on the drink's packaging, later growing the campaign to over 120 countries (Coca-Cola Europacific Partners, 2025).

Cultural Element: The campaign relied on the universal need for personal connection and used local naming traditions and languages.

Company Action: Coca-Cola localized the concept by printing names in local scripts (Arabic, Cyrillic, Chinese), using country-specific nicknames and slang, and collaborating with local influencers to personalize social engagement.

Outcome: In Australia, the campaign made Facebook traffic go up by 870%, earned 12 million media views, shared 76,000 virtual Coke cans, and printed 378,000 custom cans in three months. Young adult drinking went up by 7%, transactions by 3%, and total sales by 4%, reversing an 11-year drop. Over 250 million personalized packs were sold in the 2011-2012 summer (Spiff Commerce, 2021).

Theoretical Link: Q1 – Preserve & Amplify. The global identity of “sharing happiness” was maintained while local execution achieved an emotional connection.

H&M – „Coolest Monkey in the Jungle“ Controversy in South Africa

Context: In 2018, H&M's global online ad showed a black child wearing a hoodie reading “Coolest Monkey in the Jungle,” appearing on sites in multiple regions (DW, 2018).

Cultural Element: The term “monkey” carries racist connotations in cultures with colonial histories. The campaign underestimated symbolic sensitivity.

Company Action: H&M used a standardised global approach without enough local research.

Outcome: Protests and vandalism erupted in South Africa; public backlash escalated and several celebrities terminated their collaboration with the brand (New York Times, 2018).

Theoretical Link: Q4 – Withdraw or Redesign, underscoring the risks of ignoring high-context cultural meanings (Hall, 1976).

THE BRAND RESONANCE MATRIX (BRM)

Conceptual Foundation and Creation

The Brand Resonance Matrix was developed by the author after identifying patterns across the five case studies. It draws conceptually from Levitt’s (1983) standardisation–adaptation debate and Hofstede’s (2001) cultural distance. The two axes are: (1) Brand Identity Centrality and (2) Cultural Distance/Local Sensitivity. Plotting campaign elements across these axes produces four strategic quadrants.

Brand Resonance Matrix

Table 1. Brand Resonance Matrix

Quadrant	Cultural Distance	Brand Identity Centrality	Strategic Recommendation	Illustrative Case
Q1 – Preserve & Amplify	Low	High	Maintain uniform campaign; minor linguistic or legal adjustments.	Coca-Cola (Share a Coke)
Q2 – Calibrate & Localise	High	High	Keep global theme but adapt symbols, tone, and emotions.	Dove India; Netflix
Q3 – Reinvent for Relevance	High	Low	Allow co-creation and redesign of products or creative content.	KFC China
Q4 – Withdraw or Redesign	Low	Low	Pause campaign; reassess meaning before re-launch.	H&M controversy

Source: Author’s adaptation based on Levitt (1983) and Hofstede (2001).

	High Cultural Distance	Low Cultural Distance
High Identity Centrality	Q2 – Calibrate & Localise (Dove India; Netflix)	Q1 – Preserve & Amplify (Coca-Cola Share a Coke)
Low Identity Centrality	Q3 – Reinvent for Relevance (KFC China)	Q4 – Withdraw or Redesign (H&M)

Source: Author’s adaptation based on Levitt (1983) and Hofstede (2001).

Fig. 1: Brand Resonance Matrix Diagram

Managerial Use

Managers can use the BRM to make campaign decisions: 1) Rank cultural distance using Hofstede scores and brand-essence mapping; 2) Decide resource allocation – invest in localisation (Q2-Q3) or emphasise identity (Q1); 3) Evaluate digital feedback and shift quadrants as market conditions evolve.

DISCUSSION

The five case studies suggest that campaign success depends on finding a balance between global brand image and local needs. Coca-Cola's "Share a Coke" shows how a global image can be kept while adding local touches. Dove in India and Netflix show that mixing a global message with local symbols and stories makes a campaign culturally relevant. KFC China shows that deep localisation can strengthen, not weaken, brand identity when cultural distance is big. H&M's failure shows the risk of missing symbolic meanings and cultural sensitivities.

CONCLUSION

Cross-cultural marketing is no longer about choosing between global standardisation and local adaptation, but about balancing both. The Brand Resonance Matrix tries to propose a way to balance global image with local cultural needs.

By comparing Dove India, Netflix, KFC China, Coca-Cola ("Share a Coke"), and H&M, the article shows that successful adaptation depends on understanding cultural signals, respecting situations, and staying true to brand meaning.

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THE DEVELOPMENT OF SPORT IN BULGARIA: 18 YEARS OF EUROPEAN INTEGRATION

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Abstract

This report analyzes the development of sport in Bulgaria throughout the country's membership in the European Union. It explores EU-funded projects, changes in infrastructure and comparisons between Bulgaria's experience and that of other member states along their path toward European integration. The document underscores the image of sport as a driver of modernization and a mirror reflection of Bulgaria's evolving European identity.

Keywords: Bulgaria; sport development; EU funding; European integration; European Union

JEL: 052, H54, L83, Z20

INTRODUCTION

In January 2007, after Bulgaria joined the European Union, the country's recently started membership brought out a variety of emotions from its citizens, including hopes for economic modernization, social solidarity and renewal of vital public sectors – including sport. Now, some eighteen years later, there is a possibility to take a look back at this long period of time and assess how European integration has affected Bulgarian sport's development in regard to funding, infrastructure, policy and participation. Reflecting both cultural pride and social transformation, sport has always been an important part of Bulgarian national identity. The Balkan country has constantly placed athletic excellence as a symbol of national achievement, from Olympic and world champions in disciplines like rhythmic gymnastics, wrestling, boxing and weightlifting to widely popular team sports such as football and volleyball. Having this in mind, the transition from a centrally planned system to a market-oriented economy at the end of the 20th century had a significant effect, leaving the sports structures fragmented and underfunded. Therefore, political and economic opportunities alongside a new framework for modernizing and rebuilding sport were presented by EU accession.

This report examines the following main question: "How has sport in Bulgaria developed during the 18 years since the country's accession to the European Union and what role have EU funds and policies had in that process?". The document's aim is to follow the influence of European integration on the sporting environment of Bulgaria by means of a few interconnected dimensions: infrastructure's evolution, the role of educational and inclusion-oriented programs, European funding access and comparison with other member states. The target is to definitely not measure progress in numerical terms, but to explore in

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what way the principles of EU cooperation, values and funding mechanisms have influenced the growth of sport at both elite and amateur levels in the country.

The participation of Bulgaria in programs like Erasmus+ and the European Structural and Investment Funds has presented fresh opportunities for youth exchanges, capacity building and infrastructural upgrades. The Erasmus+ project has established itself as a major ignition of partnerships between Bulgarian clubs, universities and NGOs, and their European counterparts by providing support to projects that promote social inclusion, health and equal access to sport. On the other hand, the European Regional Development Fund and the Cohesion Fund have financed infrastructure enhancements of different sport facilities throughout the country, showing how support from the EU can directly broaden the accessibility and improve the quality of sport facilities. Such developments represent tangible results from Bulgaria's participation in the larger European sports landscape.

Not only that, but the report recognizes that the pros of EU integration have not been equally distributed, as smaller municipalities and rural areas come up against barriers such as lack of financing and limited administrative capacity, while flagship projects in the capital and other big cities demonstrate the visible impact. Many stadiums, which hosted major sporting events and welcomed tens of thousands of supporters regularly a few decades ago, are currently in a decaying state. The unbalanced absorption of funds reflects wider socio-economic disparities across regions, raising some caution and questions about sustainability and inclusiveness in Bulgaria's sports policy. In order to get these dynamics, the document includes together examples of successful projects and a critical evaluation of the challenges that persist when it comes to the effectiveness of implementing such initiatives.

The report draws from a variety of publicly available sources, including European Commission project databases, Bulgarian sports portals, media reports and official program documents. These resources help to gain insight into how EU instruments have been applied in the context of Bulgaria and allow for a comparison with other countries that have undertaken similar modernization paths. Member states that have been positively affected from EU-funded sports infrastructure, with Hungary, Poland and Croatia being a few examples, can be seen as benchmarks for understanding Bulgaria's relative advancement and potential for further enhancements and corrections.

Overall, this whole analysis inspects how European integration has contributed to the modernization and diversification of sport in Bulgaria, whether by providing financial support or by promoting forms of governance and cooperation. Furthermore, it also underlines the need for more strategic coordination between national and regional institutions to make sure that resources ultimately lead to long-term and sustainable development. So, eighteen years after accession, the country's experience shows that integration into the European sporting framework is an ongoing process, which goes beyond funding cycles and demands management, vision, passion and commitment to shared European values.

SPORT IN BULGARIA BEFORE EU ACCESSION

Before Bulgaria joined the European Union in 2007, influenced by economic, political and social changes during the transition from socialism towards a market economy, sport

in the country had already undergone a dramatic transformation. The legacy of the socialist era was still present in the organization and culture of sport. In the past, especially during the 1970s and 1980s, Bulgaria was internationally recognized for its athletic excellence, producing Olympic champions and world-class sportspeople in wrestling, rhythmic gymnastics, weightlifting, volleyball, football and other sports. As a whole, sport was considered as an instrument of ideological representation and a matter of national prestige. The government provided centralized funding, comprehensive sports education and a vast network of clubs and facilities that enabled broad participation across all age groups.

However, structural and financial challenges sprouted from the fall of communism in 1989. The transition period of the 1990s and early 2000s was marked by the deconstruction of state-controlled institutions and a drastic fall in public financing for sport, with many clubs losing their sponsors and facilities falling into disrepair. The major shift needed the development of new funding structures based on private initiatives and local governance, but these mechanisms were slow to develop. The lack of a stable institutional and legal framework resulted in fragmentation within the sports system and a growing gap between professional and mass sport.

In these years, the country's successes on the international stage largely declined compared to its previous prominence. While individual athletes continued to show positive results in different disciplines, the overall performance of national teams declined, reflecting limited resources and outdated infrastructure. Yes, one of the biggest sports achievements in Bulgaria's history – the 4th place of the national football team in the 1994 World Cup in the USA, took place exactly in this period. It was also followed by a good performance in the 1996 European Championship in England, and qualifications for the 1998 World Cup in France and the 2004 Euros in Greece, both of which are currently the last times the country has participated in a major tournament. These results are the largest exception in this period and they still “warm the hearts” of fans in Bulgaria. However, it is important to note that these results are a result of work done in the past, not during the 1990s-2000s period, during which football, traditionally the most popular sport in the country, suffered from financial instability, deteriorating facilities and corruption scandals. Therefore, these years are viewed as a period of stagnation and uncertainty for Bulgarian sport, marked by declined in public engagement and international victories.

Additionally, the role of sport itself also changed. During socialism, sport was seen as an instrument for collective participation and national representation, but after the fall in 1989, it slowly moved into commercialization and individual accomplishments. This shift was accompanied by growth in social inequalities, as accessibility to organized sport became more and more dependent on family income or private funding.

However, progress was not entirely absent during the period in focus, despite the many difficulties. In the early 2000s, as Bulgaria started its preparations for EU membership, the country made efforts to align its policies with European standards in important areas like education, anti-doping regulations and youth engagement. The Bulgarian Ministry of Youth and Sports being established as a central coordinating body gave the institutional base for policy modernization. Often being supported by pre-accession instruments such as TEMPUS, early cross-border programs laid the foundation for later involvement of Erasmus+

and other EU programs. Furthermore, the National Sports Academy “Vasil Levski” went on to serve as a vital center for education, international cooperation and sports science.

While Sofia and a few large cities like Varna and Plovdiv maintained functioning sports complexes, smaller towns and rural municipalities had to deal with shortages of modern establishments. Many gyms, stadiums, halls and even swimming pools dated back to the 1970s and did not have the necessary maintenance and equipment, which limited opportunities for youth participation and discouraged investment. As an outcome, Bulgaria entered the EU with strong athletic tradition, but a very fragile institutional base and outdated resources. The entry was perceived as a chance for revitalizing sport as a field of national development and access to resources and models that could address major problems in the system because there was a spreading awareness that without external support, Bulgaria risked losing its competitive edge.

To sum it up, the timeframe before Bulgaria’s arrival into the EU was highlighted by a contrast between historical strength and structural decline. The pre-accession conditions defined the groundwork for the following transformation that happened after 2007, opening new paths for cooperation, reform and investment. It is extremely important to understand the background in order to evaluate how European integration reshaped the domain of sport in this territory over the past eighteen years.

SPORTS INFRASTRUCTURE AND EU FUNDING: MODERNIZATION AND CHALLENGES

Since 2007 the modernization of sports infrastructure has become one of the visible areas of change within the country’s larger social and regional development agenda. Through EU membership Bulgaria gained access to several financial instruments that could directly or indirectly help sport-related initiatives such as renovating old facilities, improving accessibility and promoting participation in local communities.

EU Funds and Modernization of Infrastructure

A notable example of the way EU structural funding has positively affected Bulgarian sport is the modernization of the “Gurgulyat” building at the National Sports Academy “Vasil Levski” in Sofia. Supported by the European Regional Development Fund, this initiative led to state-of-the-art teaching methods and training areas, energy-efficient reconstructions and brand-new laboratory spaces for sports science (European Commission, 2020). The European Commission’s policy portal explains that this procedure, amounting to 1 874 790 EUR, targeted an alignment of Bulgaria’s frontrunning sports institution with European standards in higher education and applied research, improving conditions for students and quality of professional training. Furthermore, regional municipalities also benefited from investments in multipurpose sports halls, recreation centers and youth facilities. In the period 2014-2020, sport was considered as part of broader urban-regeneration strategies by many projects under the Operational Programme “Regions in Growth”. Although they are usually small-scale, the overall impact of these projects made progress in revitalizing public spaces and fostering participation in everyday sport activities.

Progress and Persistent Gaps

Despite these positive developments, there is still a considerable imbalance within Bulgaria's sports infrastructure. Even though smaller municipalities and towns have received some assistance, the majority of the bigger investments tend to concentrate in the capital and the other larger cities, where co-financing potential and administrative capacity are much stronger. This may be due to limited technical expertise, complex application procedures and requirements for matching funds. Therefore, instead of enjoying modern and renovated facilities, some places continue to rely on ones dating back decades. However, upgraded establishments also bring along some problems connected with sustainability and maintenance, as EU funding typically construction and renovation expenses, but not long-term operational costs. Some initiatives risk fast deterioration once EU support commences if there is not consistent budgets for aftercare, which highlights a pattern encountered across the country: stable initial implementation followed by weaker follow-up actions. Unlike EU frameworks, which promote cross-sectoral approaches, Bulgaria's policy often puts sport as a standalone domain. The limited integration of sports infrastructure into national strategies for health, tourism and education is another zone of concern. A more powerful strategic vision could ensure that investments produce sustainable benefits beyond just physical construction.

Shifting towards Sustainable Development

The upcoming challenge for Bulgaria is to shift from infrastructure-driven modernization to sustainable development, with the focus in need of extending beyond constructing facilities toward inclusiveness and accessibility. The 2021-2027 programming period of EU policies emphasizes digital transformation, social participation and green infrastructure, where Bulgarian sport can discover creative chances for innovation. A key factor for success will be strengthening collaboration between ministries, municipalities and other organizations.

As a conclusion, the 18-year-spanning EU membership has largely changed the physical and institutional state of Bulgarian sport. Yet the need for more united national strategies is underscored by ongoing administrative, regional and financial inequalities. While a vital first step, the modernization of infrastructure must be followed by sustainable management and inclusive participation so that the country can fully realize its potential for European integration in the world of sport.

EU Opportunities for Sports Development: Programs, Policies and Bulgarian Participation

As already mentioned, the European Union offers a wide variety of instruments for supporting sport as a driver of education, well-being and social inclusion. Not only for Bulgaria but also the other member states, taking part in EU-funded programs has played a major role in the refurbishment of sports policies and institutions. Some of the most impactful initiatives are the Erasmus+ Programme, the European Week of Sport and, as a whole, the EU Work Plan for Sport, all of which strive to promote important values for the European community.

Erasmus+ Sport: A Platform for Cooperation and Innovation

Having become the cornerstone of Bulgaria's participation in EU sport initiatives, the Erasmus+ platform has allowed organizations such as federations, universities, municipalities and NGOs to gain access to funding for collaborative ideas that focus on volunteering, equality and physical activity. Recently it was announced that a sum of 350 sports projects from the whole of Europe were approved for funding through the program for 2025 alone, 21 of which are Bulgarian projects: 11 in Small-scale partnerships, 3 in European non-profit sporting events and 7 in Collaborative partnerships (Sandeva, 2025). On this occasion, all of these applications will share amongst each other a budget of 67 million Euro. Additionally, one of Bulgaria's most visible participants – the National Sports Academy “Vasil Levski”, which has secured multiple project grants throughout the years, has recently been approved for funding under the Erasmus+ platform's “Key Action KA171-HED – Mobility of higher education students and staff supported by external policy funds of the EU” (NSA, 2025). This project will run for 3 years, starting from the 1st of August 2025, and will reinforce international cooperation between leading higher education institutions from countries including China, Kazakhstan, Georgia, Egypt, Albania and Armenia. Through similar partnerships, Bulgarian institutions have become contributors to the exchange of knowledge and experience in sport science and management. This whole initiative not only offers financing but further assists Bulgarian organizations to adopt recent governance principles and align with priorities of the European Union.

Promotion of Active Lifestyles and Inclusion

Bulgaria's annual participation in the European Week of Sport is yet another key indicator for its engagement with EU-organized initiatives. Since joining the movement in 2015, hundreds of events have been held on the territory of Bulgaria, advocating community engagement, fitness and well-being. The European Week of Sports is an event, during which visitors can practice their favorite disciplines together and meet famous Bulgarian athletes from different spheres. This year's edition marked its tenth anniversary and displayed the motto “Move More, Scroll Less”, once more raising awareness about the importance of physical activity (Radkova, 2025).

Challenges and Opportunities

Despite the obvious positives, participation in such programs face some obstacles, which were already touched upon. The lack of experience or administrative capacity prevents smaller municipalities and organizations from applying for Erasmus+ funding. The element that discourages potential new applicants is that the process of partner searching, financial reporting and proposal writing can be complex. Furthermore, national coordination and follow-up mechanisms remain weak in constant engagement after the funding period ends.

Nevertheless, Bulgaria's stable involvement in different initiatives and its steady increase in approved projects means that institutional learning is taking place after all. Looking ahead, future chances exist in encouraging eco-friendly sporting practices, expanding digital learning tools and linking sport closer with education and health strategies. All of

these aspects are emphasized in the “EU Work Plan for Sport (2024-2027)”, whose main priorities are: integrity and values in sport, socio-economic and sustainable dimensions of sport, and participation in sport and health-enhancing physical activity (European Commission, 2024).

COMPARATIVE PERSPECTIVE WITHIN THE EUROPEAN UNION

A combination of the potential and the shortcomings of Bulgaria’s experience is brought forward through a comparison with other member states from the central and eastern parts of the continent. Here, the point is not just to analyze the way of using EU funds, but to view the overall approach and methodology of other countries towards the development of their sports industry. A prime example is Poland, which has become not only a regional leader in utilizing EU structural funds for sports and recreational facilities, but also a pioneer in modern football stadiums. The country has been investing heavily in this type of infrastructure ahead of and after hosting the 2012 European Championship. In 2023 Poland had 28 modern stadiums, which are expected to rise up to 35 by 2028, as Polish taxpayers have already spent around 2 billion Euro (Mayer, 2023). Many similar investments are expected to happen soon, which leads to expectations for an even brighter future for the country’s sport development. Another example are Croatia and Hungary, which have launched joint cross-border projects. One of them being the construction of a stadium complex for 7,5 million Euro, supported partly by EU regional funding, in a small Croatian village with just 504 residents (Inotai and Tesija, 2025). It is part of a policy of Viktor Orban’s government to invest significant money in sports and cultural facilities in regions of neighboring countries where Hungarian minorities live. Both of these cases illustrate how coherent national strategies and public-private partnerships can utilize EU support to the maximum and attract additional investment.

CONCLUSION

Eighteen whole years after Bulgaria joined the European Union, the current state of the country’s sports sector mirrors both the achievement and recent challenges of European integration. The main research question “How has sport in Bulgaria developed during the 18 years since the country’s accession to the European Union and what role have EU funds and policies had in that process?” can be answered by recognizing that EU membership has indeed offered crucial opportunities for modernization, international partnership and institutional learning to the country. By taking advantage of initiatives such as Erasmus+, European Week of Sport and targeted structural funding, Bulgaria has reached access to knowledge networks and financial resources that have upgraded infrastructure, inclusion and education in many ways.

However, the country’s progress has been quite uneven compared to some other peers, as Bulgaria has been experiencing a lack of consistent positive results in different sports and a territorial imbalance of infrastructural developments for a long time. It can learn a lot

of essential lessons from countries like Poland, Hungary and Croatia, which have demonstrated how long-term national strategies and tougher co-financing mechanisms can turn sport into a driver of regional and national growth and identity. Even though these constraints have been present for a long time, sport still plays a vital role in Bulgaria's cultural and social life, as it is a bridge between tradition and modernization. Today sport is seen as a medium, through which European values of cooperation, participation and equality are forwarded.

Overall, Bulgaria's sports development since 2007 represents not a finished result but a gradually evolving process, which leads to a path of adaptation, shared identity and integration.

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THE IMPACT OF THE EUROPEAN UNION-NEW ZEALAND FREE TRADE AGREEMENT ON GLOBAL AGRICULTURAL MARKETS

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Abstract

The European Union-New Zealand Free Trade Agreement (FTA), which was signed in 2023 and entered force in 2024 marks a seminal moment for both sides. This paper examines its importance and its impact on global agricultural markets while focusing on tariff reductions, export competitiveness and different sectoral effects. The conclusion that is drawn indicates that while the agreement boosts economic activity, its benefits ultimately favour New Zealand's export-orientated agricultural sectors more. Overall, the FTA promotes long-term prosperity while simultaneously introduces new challenges for European producers.

Keywords: Free Trade Agreement, European Union, New Zealand, agriculture, competitiveness

JEL: F13, F15, Q17

INTRODUCTION

The system of world trade has been undergoing some significant changes in recent decades. While increasing globalization has created greater economic interdependence, recent years have also seen the return of protectionist policies among several major economies around the globe. As one of the central actors in that system, the European Union (EU) has taken a clear path towards increasing the liberalization of international trade within the global economy.

Throughout the past decade the EU has engaged in several free trade agreements with partners such as Canada, South Korea and Japan, aiming to strengthen economic relations, increase cooperation in digital trade, green transition and sustainability and further secure access to global markets. All of these agreements are part of EU's broader strategic plan of economic influence and within that framework the FTA, signed in of July 2023 and entered into force in May of 2024 stands out as a new step towards modern, values-based trade cooperation.

The problem examined in this paper stems out from the fact that despite the trade agreement leading to trade liberalization and ultimately boosting economic activity it may create uneven distribution of benefits, especially in the agricultural sector. Agriculture plays a crucial role in international trade, however, it remains one of the most sensitive and also politically complex due to all regulating factors such as tariffs, quotas and domestic protection measures.

Previous trade agreements can be used as a useful source regarding the effects of liberalization on agriculture. For instance, the Comprehensive Economic and Trade Agreement (CETA) between the EU and Canada shows a mix of significant benefits but also carries

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some challenges. On the one hand such liberalization has significantly improved export performance and furthermore has raised consumer welfare and according to official data “EU exports of pork to Canada tripled and exports of French cheese increased by 57%” (European Commission, 2021, p.14). On the other hand, the agreement domestic markets experienced heightened competition which can lead to high pressure to less competitive producers. An EU study on agriculture underscores trade’s dual impact: “On the one hand, trade opens new markets... increasing productivity and profitability. On the other hand, it introduces competitive pressure and market volatility... The paper identifies offensive sectors... which benefit from trade, and defensive sectors, such as beef and sugar, which are vulnerable to international competition.” (European Commission, 2020, p. 8).

Although this case is relevant and provides useful insight to the research, the impact of the FTA is still largely unexplored. Considering the agreement only came into force in May 2024, understanding and analyzing long term data on its results is yet impossible. Therefore, this study mainly relies on official projections, comparative evidence from similar agreements from the past and early market responses of the implementation of the agreement.

This study aims to provide insight into how free trade agreements simultaneously influence global agricultural markets and increase the economic gains between partners. It is believed that the EU-New Zealand FTA will ultimately cause greater benefits for New Zealand (NZ) mainly due to its high level of competitiveness in sectors such as dairy, meat and horticultural products. Nevertheless, the European Union stands to gain improved access to the New Zealand market, particularly in processed foods and some specialized exports.

OVERVIEW OF THE EU-NEW ZEALAND FTA

After nearly five years of negotiations the European Union-New Zealand FTA was signed on 9 July 2023 and entered force on 1 May 2024. The agreement is a symbol of new generation of trade partnerships that not only combines traditional market-access objectives which the EU has historically pursued but also care and commitment for sustainable development and environmental protection. The core goal is to promote a mutually beneficial and at the same time balanced relationship between the two economies.

The main objective of the agreement is that it eliminates tariffs on nearly all of goods traded between the partners. Once it entered into force, 91 percent of New Zealand’s exports to the EU became duty-free and will that figure will increase to 97 percent within seven years (European Commission, 2024). For EU exporters, the agreement provides full tariff elimination on industrial products and all agricultural exports to New Zealand from day one. Such high level of liberalization is expected to save EU businesses approximately €140 million annually in customs duties (European Commission, 2024).

Agriculture- traditionally one of the most sensitive sectors in EU trade policy- received significant focus during the negotiations. The EU implemented protective quotas for some products such as beef, sheep meat and dairy while New Zealand obtained larger market access under controlled tariff-rate quotas. For instance, under the FTA, New Zealand is eligible for 36 000-tonne annual butter quota and new access for cheese and beef exports

at reduced tariff rates (New Zealand Ministry of Foreign Affairs and Trade, 2024). Contrary to this, the EU gained improved access for wine, processed foods and manufactured goods.

In addition to tariff reductions, the agreement also includes chapters addressing digital trade, labour rights, sustainability and climate action. Both the EU and New Zealand have committed to implementing the Paris Agreement regarding climate change and to avoid worsening the animal-welfare standards in the name of better trade. These chapters are part of EU's broader strategy of implementing trade agreements that not only lead to economic benefit but also value ecological responsibility.

Overall, the EU-New Zealand FTA represents a partnership between two forward thinking major economies who beside market liberalization also values sustainability. It is a direct prerequisite for closer economic relations and stands for potential example for future relations in the Asia-Pacific region. The next section compares the agriculture and competitiveness of both partners in order to better understand how the agreement will influence them.

COMPARATIVE ANALYSIS: EU VS NEW ZEALAND AGRICULTURAL SECTORS

The way that the agricultural sectors operate in the European Union and New Zealand is vastly different in terms of structure, production scale and trade orientation. EU's agricultural system is mainly defined by the Common Agricultural Policy (CAP) which essentially provides subsidies and support to local farmers. The policy aims to maintain the welfare of rural farmers, stabilize food prices and ensure food security. Because of that, EU's agricultural market operates within the framework of regulated competition, where policy interventions balance market forces.

In contrast, the agricultural sector of New Zealand is highly liberalized and mainly export-oriented. In the 1980s, following an economic crisis, the government implemented massive neoliberal reforms removing most agricultural subsidies and thus the country started relying on global markets for economic growth. According to data, agriculture accounts for roughly 7 percent of New Zealand's GDP and nearly 60 percent of its merchandise exports (New Zealand Ministry for Primary Industries, 2023). New Zealand's farmers are known for their efficiency, innovation and high productivity, especially in the sectors of dairy, meat and horticulture production, which stand as foundation of the country's competitive advantage in global trade.

These structural differences have a significant impact on the expected outcome of the FTA. On the one hand, EU's agricultural trade is defined by both economic and political consideration, as trade liberalization often faces domestic resistance from farmers who are concerned about competition from lower-cost imports. On the other hand, New Zealand's agricultural exports are the main driver of growth and removing trade barriers is seen as an opportunity to gain new market access. EU producers benefit from advanced technology and strong branding in premium sectors whereas New Zealand's producers enjoy a clear cost advantage and strong global competitiveness due to economies of scale and lower production costs.

Therefore, the EU-New Zealand FTA connects two fundamentally different agricultural models- one policy-supported and domestically orientated and the other market-orientated and export driven. This imbalance explains why the distribution of benefits under the agreement is hardly possible to be even, with New Zealand's exporters expected to capture a greater share of the gains. The next section examines these opportunities in further detail, focusing on the export potential the FTA has created for both parties.

OPPORTUNITIES AND EXPECTED BENEFITS UNDER THE FTA

The elimination of tariff and non-tariff barriers under the FTA creates opportunities for both the EU and New Zealand. However, the expected gains from these opportunities differ in regard to each side's economic structure and trade priorities.

New Zealand gained access to one of the world's largest and wealthiest markets- the European Union. Before the FTA, New Zealand maintained an average most-favored-nation (MFN) tariff of only 1.7 percent on agricultural products, while the EU's equivalent rate was 14.4 percent (WTO Trade Policy Review Profiles, 2015). This imbalance meant that the exports coming from New Zealand faced much bigger barriers entering the EU than the other way around. But now with the elimination of nearly all EU tariffs and the newly introduced tariff-rate quotas for certain products such as beef, sheep and dairy, producers are expected to experience a marked improvement in price competitiveness. According to projections by the New Zealand Ministry of Foreign Affairs and Trade (2024), exports of dairy and meat to the EU could expand by up to 20 percent in value within the first five years of implementation.

For the European Union, the FTA improves market access for high-value products such as wine, processed foods and manufactured goods, which previously faced average tariffs of around 2,5 percent in New Zealand (WTO, 2015). The immediate gains for EU, however, are more limited as New Zealand's tariffs were already relatively low. Despite this, the EU exporters will be able to benefit from simplified customs procedures and lower administrative costs.

Beyond the agricultural dimension, the agreement is expected to bring long-term gains through cooperation in key areas such as digital trade, sustainability and innovation. The agreement includes chapters designed to promote investments in environmentally friendly production and to enhance the competitiveness of low-carbon goods, such as electric vehicles, renewable energy equipment, energy-efficient machinery and more. Additionally, the digital trade chapter creates clear rules for cross-border data flows, consumer protection and cybersecurity, which are expected to further secure digital interactions between business partners and public institutions. By implementing these wider benefits, the FTA extends beyond just tariff reduction and focuses on environmental and cybersecurity issues to further deepen integration within global economy.

However, despite these long-term gains showcasing the positive ambitions for the future, the implementation of FTA also raises several short-term challenges- particularly in the agricultural sector, where the structural differences between the partners remain deeply rooted and continue to present a problem.

CHALLENGES AND SECTORAL RISKS FOR AGRICULTURE

A particular issue for the European Union, and more specifically for European farmers is the expanded market access for traditionally very competitive and sensitive sectors such as beef, sheep meat, dairy and sugar. Despite there being tariff-rate quotas (TRQs) in the agreement in order to prevent major market disruptions, EU farmers are concerned that even the small level of liberalization could lower local prices and increase competitive pressure. New Zealand's highly efficient production methods allows it to deliver beef and dairy at lower unit costs compared to EU farmers, who are often faced with land fragmentation and environmental regulations. Moreover, these fears are further supported due to the fact that New Zealand's exports are mainly high-quality, grass-fed products that could directly compete in premium EU markets. There are safeguards such as phased tariff reductions and volume caps, producer associations throughout the EU have warned that they may not prove sufficient to protect vulnerable sectors. However, a 2023 report by the Institute for European Environmental Policy suggests that the actual impact may remain modest: “*The impact of the EU-New Zealand FTA on EU production of sensitive agri-food products such as beef, sheep meat, and dairy products will be limited, with an expected decline of 1.4% of beef and sheep meat production by 2030, and no significant change to the production of dairy products*”.

These concerns are also expressed in political resistance that has emerged since the agreement. Multiple farming groups, including the Committee of Professional Agricultural Organisations and the General Confederation of Agricultural Cooperatives in the European Union (COPA-COGECA) have expressed their opposition to the FTA regarding the ‘unfair competition’ and insufficient environmental standards among trade partners. In France and Ireland different farming unions have demanded for more transparency on the evaluation of the extended effects which the FTA brings. These responses are a part of a wider trend of EU farmers doubting commercial agreements where trade liberalization is seen as favoring export-focused industries and neglecting traditional agriculture vulnerable. Despite New Zealand's challenges gaining less political attention compared to those in EU, they remain equally important.

Despite being generally favourable towards the agreement, New Zealand faces its own difficulties. Growing reliance on EU market access means it leaves New Zealand's exports vulnerable to policy changes including the constantly developing EU standards for food quality, emissions and animal treatment. Meeting those requirements may increase the production cost and thus make farmers lose their competitive edge in foreign markets. Furthermore, the drive for increased agricultural products could intensify environmental pressures, especially in water consumption, nitrate contamination and methane emissions from livestock.

Environmental sustainability presents an increasing source of tension surrounding the agreement. Despite the agreement including a “*Trade and Sustainable Development*” section, critics argue that the long-distance agricultural trade conflicts climate goals. Products such as dairy and meat, which generate high emissions and frequently require transport

across enormous distances raise concern about carbon leakage. For instance, while New Zealand is acknowledged for productive dairy operations, the environmental impact of shipping refrigerated goods approximately 18, 000 kilometres away remains an issue.

CONCLUSION

This research aimed to evaluate how the EU-New Zealand Free Trade Agreement affects international agricultural markets, with specific focus on tariff reduction and different sectoral effects. The results indicate that although the FTA represents a progressive, values-based approach to liberalization of trade, its agricultural benefits are uneven. New Zealand's export-orientated and highly efficient agricultural sectors stands to gain more from EU's policy-dependent farming framework, especially in vulnerable sectors such as beef and dairy products.

The analysis indicates that despite protective mechanisms such as tariff-rate quotas exist, the long-term long term consequences for EU agricultural communities remain unpredictable. At the same time, New Zealand may face increasing regulatory requirements and environmental compromises to EU regulations. These results emphasize the complex problem of balancing liberalization of trade with domestic agricultural need and sustainable production.

Further research is required to assess long-term social and environmental effects of heightened products imported from New Zealand, particularly regarding price stability, rural job security and carbon leakage. This research adds to the growing collection of studies exploring the relationship between trade liberalization and agricultural sustainability while providing relevant insight into the broader implications of new generation FTAs.

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THE ECONOMIC ROLE OF SMALL STATES IN THE EUROZONE

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Abstract

This paper examines the economic roles that small Eurozone states play within the EU economy, focusing on their structural characteristics, comparative specializations, and responses to major shocks. Using mixed methods – comparative macroeconomic data analysis and qualitative case evidence – it highlights diverse pathways: FDI-led services, financial intermediation, industrial integration, etc. The study finds that EU integration amplifies both constraints and buffers; institutional agility and sectoral positioning determine resilience and policy space.

INTRODUCTION

Small states in the Eurozone present a paradox for political economy: their small domestic markets and high openness create severe exposure to external shocks, yet many have institutional agility to deliver strong outcomes. This paper integrates the literature on small states with a comparative analysis on a case basis for a selection of countries – Ireland, Luxembourg, Slovakia, Malta, Estonia, etc. combining the studies with contemporary macroeconomic data and EU policy assessments. Firstly, the report will go through the basic theory and definitions, then it will pay attention to the structural characteristics of the small states, compare them and analyze how each responds to shocks, and finally the policy implications will be examined.

THEORY AND DEFINITIONS

Different Academic communities define “small states” variously (population thresholds, economic weight, international influence). In this paper, the characteristics for a “small state” are chosen to be Eurozone members with relatively low population / economic weight (population roughly less than ten million and small share of EU GDP) whose policy is characterized by openness and dependence on external markets. There are three relevant dynamics for small states:

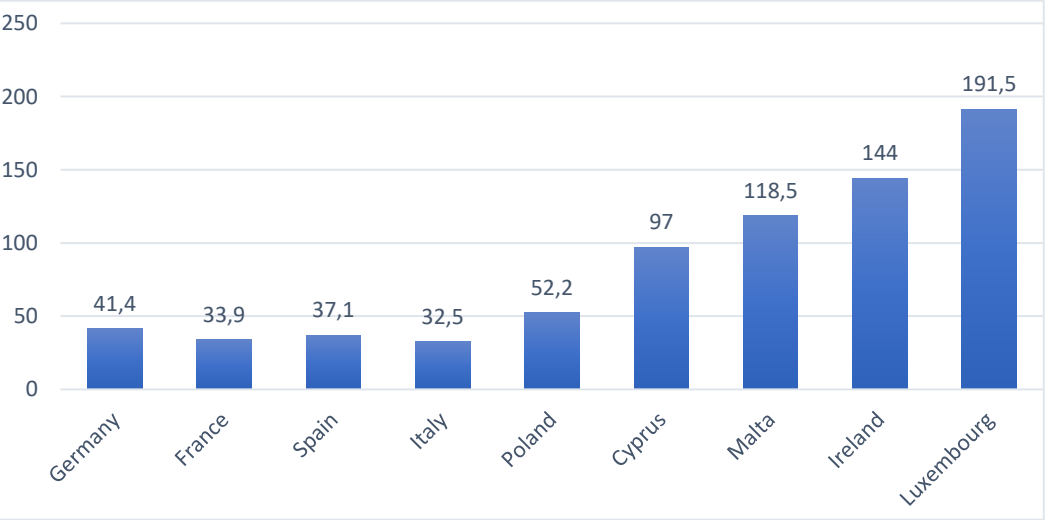
- A) Structural vulnerability and trade openness;
- B) Potential for institutional agility;
- C) Benefits and disadvantages from European Integration

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STRUCTURAL CHARACTERISTICS AND THE ECONOMIC ROLE OF SMALL STATES IN THE EUROZONE

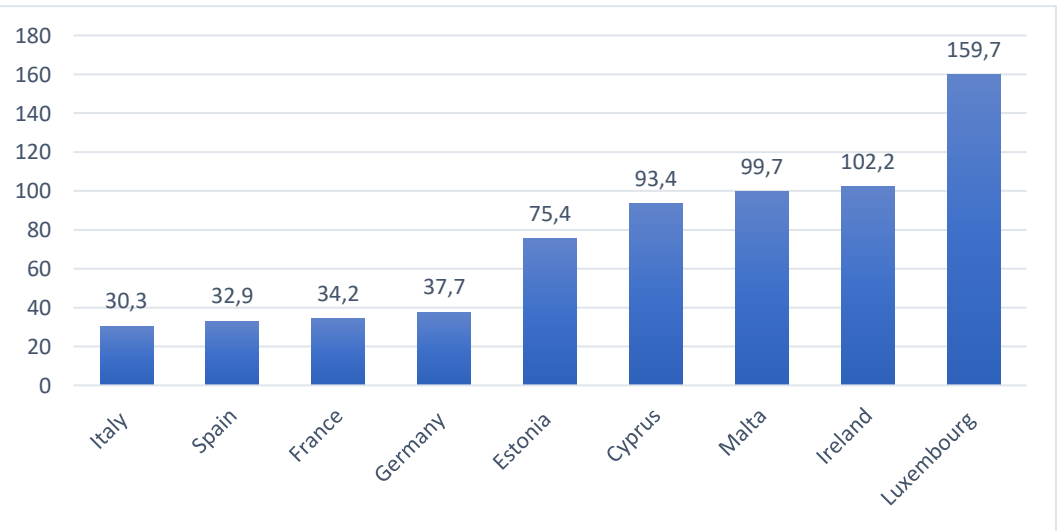
A) High trade openness – exports and imports account for a large share of GDP relative to larger economies. This plants them in EU and Global value chains.

Exports of goods and services in % of GDP (2024)



Source: Eurostat / Online data code: tet00003 / Last update: 28.10.2025

Imports of goods and services in % of GDP (2024)



Source: Eurostat / Online data code: tet00004 / Last update: 28.10.2025

B) Sectoral specialization – When a given country focuses its economic resources on developing industries or sectors in which it has a competitive advantage. It concentrates on what it does best and most efficiently, instead of trying to produce everything. For example, Luxembourg specializes in finance and is home to many banking and investment funds. Ireland is attracting a lot of Foreign Direct Investments with its low corporate tax rate, Estonia's strong side are the digital services and etc. Malta or Cyprus on the other hand are famous for their strong tourism and services sector, thanks to their natural “assets” and historical sites.

C) Lack of Independence in the Creation of National Policies

- Disadvantages:

Constraints tied to monetary policies – These small states cannot set their own interest rates. The European Central Bank makes one policy for the entire Eurozone, which may not perfectly fit a small country's economic situation, regardless of that if it's a recession or boom. Also, these countries could have a hard time spending their way out of a crisis, because of restrictions caused by some EU frameworks like the Stability and Growth Pact, which limits deficits and debt levels.

- Advantages:

European Stability Mechanism – This system makes sure to provide financial assistance to members in severe need of resources. Another helpful fund is the Recovery and Resilience Facility fund, which forces countries to follow EU-approved strategies for strategic investments like green and digital transitions, while at the same time it provides them needed funding in order to make this transition possible.

COMPARATIVE CASE STUDIES

Luxembourg – Financial Intermediation and fund services

Luxembourg functions as a financial and investment hub for the EU; financial intermediation, investment funds, and cross-border services dominate. While this generates high GDP per capita, it also exposes the economy to global financial volatility and regulatory changes.

Ireland – FDI and Export Platform

Ireland's economy is highly open and FDI-intensive; multinational firms dominate exports in pharmaceuticals, ICT, and services. This model delivered strong GDP figures but has produced statistical distortions that complicate policy assessment. Ireland's exposure to multinational decisions, global demand, and possible global tax reforms is a central vulnerability.

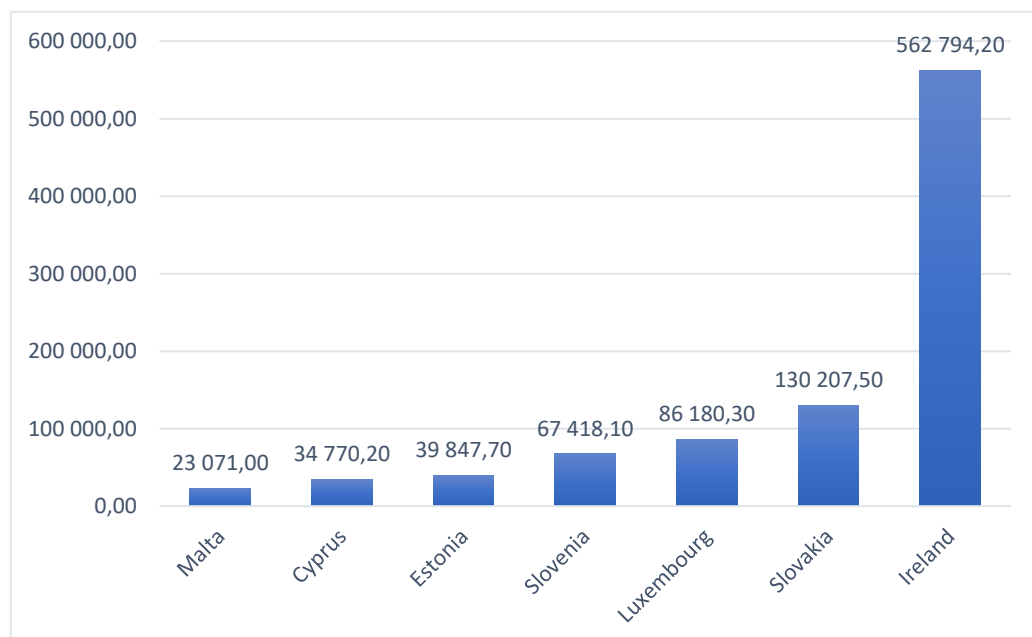
Slovenia and Slovakia – industrial integration

Slovenia's economy is relatively diversified but has at times suffered from banking fragility and slower convergence. Slovakia's open manufacturing and automotive sectors integration generated strong growth but created sensitivity to global demand and supply-chain shocks.

Malta & Cyprus – services and tourism exposure

Malta and Cyprus rely strongly on services and tourism; both enjoyed robust growth in normal years but experienced deeper COVID-19 contractions due to tourism dependence. Recent policy work focuses on diversification, digital and financial services expansion, and fiscal stabilization.

Ranking of the selected countries by GDP (current prices, million euro)



Source: Eurostat / Online data code: tec00001 / Last update: 28.10.2025

The chart above shows disparities among the selected countries who are all classified as “small states”, and it shows how their economic weights vary dramatically – from 23 billion euros (Malta) to over 560 billion (Ireland).

Ireland’s GDP far exceeds the rest – over four times larger than Slovakia’s and nearly 25 times Malta’s. This reflects Ireland’s FDI-driven economy, dominated by multinational corporations.

However, Irish GDP is statistically inflated by profit-shifting and global tax structures; adjusted indicators suggest a smaller domestic economy. Despite that fact, Ireland’s strong export base and integration into global value chains make it the leading small-state economic hub in the Eurozone.

Luxembourg, with a GDP of 86 billion euros, demonstrates high GDP per capita (one of the world’s highest) thanks to its finance, investment fund and services sectors. Despite its small population of approximately 680 000 people (2025), its financial specialization drives disproportionate economic output, making it the second key service-based small state after Ireland and third in the ranking, surpassed by Slovakia.

Slovakia, with a GDP of 130 billion, is the largest industrial small state, heavily dependent on automotive manufacturing and exports to Germany.

Slovenia, 67 billion, diversified between manufacturing, services and pharmaceuticals.

Both countries benefit from the Eurozone integration and geographic proximity to larger markets, but are more vulnerable to industrial shocks (supply chains, energy prices, etc.)

Estonia, with a GDP of nearly 40 billion, stands out for its digitalization strategy and low public debt. While smaller in absolute terms, its innovation-driven growth model and efficient governance give it disproportionate influence within EU policy debates.

Malta, 23 billion and Cyprus, 35 billion, have modest GDPs and depend heavily on tourism, services and financial regulation. Their economic size makes them more volatile during global shocks, but more flexible in policy adaptation due to compact administrative structures. EU Recovery Funds and diversification into ICT/finance are central to their future growth strategies.

From the information above, it's safe to make the conclusion that integration and openness correlate with economic size – states hosting international capital, like Ireland and Luxembourg, significantly outperform their peers. On the other hand, Industrial vs. service specialization determines resilience: manufacturing-oriented states, like Slovakia and Slovenia, are sensitive to supply-chain cycles, while service-based ones (Malta and Cyprus) are sensitive to global demand swings. Institutional and governance quality, like Estonia's e-governance and Luxembourg's financial regulation, enhance performance regardless of size.

These findings and observations reinforce that “smallness” in the Eurozone context is not a barrier but a strategic variable, contingent on policy choices and integration depth.

SMALL STATES ACROSS SHOCKS: RESILIENCE AND CONSTRAINTS

Empirical and case evidence across the 2008 financial crisis, Eurozone sovereign debt crises, the COVID-19 shock and the 2022 energy/geopolitical shock reveal patterns. In the period between 2008-2012, Countries with large financial sectors or property bubbles (Ireland and some exposures in Slovenia), experienced acute contractions and required restructuring and assistance. The Global Financial Crisis and the subsequent Eurozone debt crisis revealed the limits of small-state economic models that relied excessively on finance or real estate-driven growth.

Ireland suffered one of the deepest recessions in Europe, triggered by a collapse in the property market and the exposure of overleveraged banks. The Irish government's 2008 blanket guarantee of banking liabilities, followed by a bailout from the EU and IMF, epitomized the dangers of financial-sector dependence for small, open economies.

Slovenia faced banking-sector stress, linked to state-owned banks' non-performing loans, necessitating recapitalization and fiscal consolidation. In contrast, fiscally prudent states – including Estonia, which had maintained low public debt and conservative fiscal policies – proved more resilient. Estonia's policy framework of internal devaluation and rapid structural adjustment allowed it to regain growth by 2011.

The crisis period thus demonstrated that macroeconomic prudence and sound regulation, rather than sheer economic size, determine a small state's capacity to absorb external shocks. Moreover, membership in the Eurozone constrained exchange-rate flexibility but provided access to EU financial assistance mechanisms that larger non-members lacked.

The COVID-19 crisis produced a highly asymmetric impact across small Eurozone economies, reflecting differences in economic structure.

Tourism- and service-dependent economies, such as Malta and Cyprus, experienced GDP contractions exceeding 7 percent in 2020 as travel restrictions froze their main export sectors.

Industrial economies (like, Slovakia, Slovenia) suffered from supply-chain disruptions and temporary factory shutdowns, particularly in the automotive sector, though recovery followed as global demand revived in late 2021.

Digital and knowledge-based economies (notably Estonia and Ireland) adapted more effectively. Estonia's e-governance infrastructure facilitated remote work and service continuity, while Ireland's technology and pharmaceutical exports surged amid global demand for ICT and medical goods.

These mechanisms allowed small administrations to implement public investment programs beyond their usual fiscal capacity, focusing on digitalization and green transition priorities. While larger member states absorbed a larger total volume of funds, small states benefited proportionally more in relation to their GDP due to the design of the allocation formula.

The pandemic period thus confirmed the strategic value of deep EU integration for small states lacking monetary and fiscal scale.

The Russian invasion of Ukraine in February 2022 and the ensuing energy crisis created a new type of systemic shock—one that combined geopolitical, energy, and inflationary pressures. Although the most acute effects were felt by frontline states outside the Eurozone (such as Latvia, Lithuania, and Finland), the ripple effects reached all small Eurozone economies.

A) Energy-import dependent countries (Malta, Cyprus, and Ireland) faced sudden price spikes, though EU joint purchasing and temporary state subsidies cushioned consumers.

B) Central European small states (Slovakia, Slovenia) contended with disruptions in gas supply due to historical dependence on Russian imports.

C) Estonia and the Baltic region responded with rapid diversification of energy sources, accelerated LNG infrastructure, and EU-coordinated solidarity mechanisms.

The episode highlighted both the advantages and constraints of Eurozone membership. Institutional agility and pre-existing administrative capacity again emerged as critical mediating factors: countries with efficient governance (Estonia, Luxembourg) adapted energy policies faster than those with bureaucratic or fiscal rigidities.

Synthesizing the evidence from 2008-2023 reveals several overarching dynamics:

A) Fiscal prudence and institutional quality outweigh size in explaining resilience. Economies such as Estonia, with low debt and high administrative efficiency, have repeatedly outperformed peers of similar size but weaker governance.

B) Sectoral composition determines exposure: financial centers (Ireland, Luxembourg) are sensitive to capital market volatility; industrial hubs (Slovakia, Slovenia) to global demand cycles; tourism economies (Malta, Cyprus) to mobility and consumer confidence shocks.

C) Integration depth within EU frameworks is a double-edged sword-limiting autonomous policy space yet providing crisis insurance through solidarity mechanisms.

D) Adaptive capacity the ability to reform institutions and deploy EU instruments swiftly has emerged as the hallmark of successful small-state crisis management.

CONCLUSION

In summary, the small states of the Eurozone are a diverse group. Despite common vulnerabilities like small domestic markets and high trade openness, their economic functions are distinct-spanning global finance, foreign direct investment, integrated manufacturing, and tourism. Their experience within the EU reflects a dual reality: the framework limits national policy autonomy, yet simultaneously provides critical support through funds and coordinated crisis responses.

Ultimately, a small state's resilience is determined not by its size, but by strategic factors: its chosen economic niche, the agility of its institutions, and its capacity to leverage European tools effectively. The evidence indicates that proactive policies-fostering diversification, reinforcing fiscal buffers, and building a skilled administration to channel EU resources into lasting development-are vital. Rather than a predetermined disadvantage, small scale can be transformed into a strategic asset through intelligent policy and deep cooperation.

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IMPLEMENTATION OF ESRS STANDARDS UNDER THE EU CORPORATE SUSTAINABILITY REPORTING DIRECTIVE (CSRD): CHALLENGES AND OPPORTUNITIES FOR EUROPEAN COMPANIES

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Abstract

In this paperwork discusses the challenges and opportunities which befall EU companies from the implementation of ESRS Standards under CSRD. The essence of the CSRD is analyzed, especially the Double Materiality Assessment (DMA) which is a key concept of the directive. The CSRD is based on ESRS Standards which in turn establish the guidelines for sustainable reporting. There are designed to promote transparency and accountability. Following the European Green Deal which has promised to become the first climate neutral continent by 2025, acting sustainable might occur challenging for some businesses. However, it also paves the way to transformation: transition to circular economy, optimizing the use of resources, focusing on shared values, and long-term future orientation.

Keywords: CSRD, ESRS, sustainability reporting, circular economy, transparency

JEL: M14, Q56, K32

INTRODUCTION

During the recent years, the EU has put a focus on sustainable development. The European Green Deal aims to transform the EU into a modern, resource-efficient and competitive economy with commitment to become climate neutral by 2050. In order to support the achievement of the objectives, the EU has introduced a range of legislative measures which are designed to integrate sustainability into corporate practices.

The Corporate Sustainability Reporting Directive, CSRD, is an EU law that came in force on January 5th 2023. Its primary goal is to modernize and strengthen the rules regarding the social and environmental information that companies are required to report. This directive increases the scope of entities required to mandatorily present sustainability reports ensuring they address the risk and opportunities associated with social and environmental issues as well as the impacts of their activities on people and the planet.

The European Sustainability Reporting Standards (ESRS) provide the guidelines and framework for compliance with the CSRD. The ESRS are established by the European Financial Reporting Advisory Group (EFRAG) to standardize sustainability reporting across organizations. ESRS aim to ensure that organizations report on sustainability matters consistently and transparently. By aligning with these standards organizations provide reliable data that benefits stakeholders like investors, regulators and consumers. This standardization ultimately helps with improving consistency, comparability, transparency for stakeholders, informing decision-making, and contributes to the transition towards sustainable economy.

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The aim of this report is to provide a thorough analysis on the challenges and opportunities which befall European companies under implementation of the CSRD. Generally, the core idea of the directive is to make more information available about how companies impact people and the environment, and about how companies are impacted by environmental. In this paper real-life examples will be discussed.

ESSENCE OF THE CSRD

To begin with, *CSRD reporting is based on the concept of double materiality. Organizations must disclose information on how their business activities affect the planet and its people and how their sustainability goals, measures, and risks impact the business's financial health* (IBM, 2023). Companies have to report not only on how sustainability issues might create financial risks for the company (financial materiality), but also on the company's own impacts on people and the environment (impact materiality).

- *Impact materiality – the outward effects of a company's activities, products, and value chain on people and the environment.*

- *Financial materiality – the inward effects of sustainability-related risks and opportunities (such as climate change, regulatory developments, or resource constraints) on the company's cash flows, access to finance, and overall enterprise value* (European Commission, 2022).

In this way there is a balance achieved between the two concepts. The Double Materiality Assessment (DMA) allows businesses to gain a comprehensive overview of their sustainability footprint. Moreover, it is quite useful for improving the risk management strategy of the company, enhancing the business resilience, and positioning the company more favorably on a specific market. In the context of CSRD, the approach not only meets regulatory requirements, but also meets stakeholder demands for corporate transparency.

The CSRD and DMA represent a significant evolution in corporate sustainability practices. By identifying and managing sustainability risks and opportunities, companies can not only comply with the EU legislation, but also enhance their business resilience and competitiveness in an increasingly sustainable world. *The journey to effective DMA and CSRD is challenging, but with in-depth strategic planning and stakeholder engagement, businesses can navigate it successfully* (The CSRD Compass, 2023).

IMPORTANCE OF ESRS

The directive is a law by itself which is based on the so-called European Sustainability Reporting Standards (ESRS). They are designed to be forward-looking, requiring companies to disclose their plans and targets for improving their sustainability performance. The aim is to improve the quality and comparability of sustainability reporting. Moreover, ESRS are comprehensive and cover wide range of sustainability matters. Some of them include for instance:

- Climate change;

- Pollution;
- Water & Marine sources;
- Biodiversity & Ecosystems
- Resource use & Circular economy

Initially developed by the European Financial Reporting Advisory Group (EFRAG), these standards ensure that sustainability disclosures are comparable, consistent, and aligned with international ESG frameworks like the Global Reporting Initiative (GRI) and the International Sustainability Standards Board (ISSB) (Manifest Climate, 2025).

The ESRS are interconnected and provide a solid opportunity for EU companies not only to streamline global ESG reporting, but also to align credible efforts, minimize inconsistencies and greenwashing, and improve transparency. Nevertheless, challenges prevail with education, capacity building, and continuous stakeholder engagement. Furthermore, EU companies are required to embed sustainability into the very fabric of strategic decision-making and risk management associated with the business model for long-term value. The ESRS puts companies more accountable than ever, but with accountability, comes the burden of data gathering, supply chain transparency and synchronization with entities like the ISSB (International Sustainability Standards Board).

All in all, the importance of ESRS lies in that the framework requires companies to reveal how they perform sustainably following the principal of ESG (Environment, Social, and Governance). In addition, ESRS play a vital role in ensuring transparency in corporate practices, thus helping with the improvement of quality, transparency, and corporate responsibility.

CHALLENGES FOR EU COMPANIES

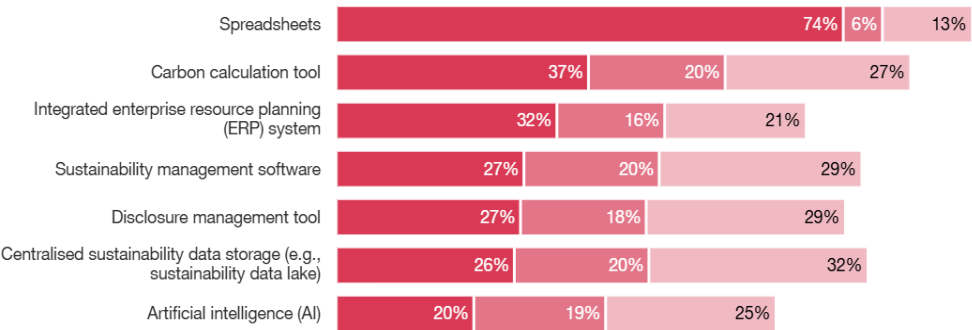
In 2024 PwC conducted "Global CSRD Survey" which aimed to assess on how well-prepared companies are for reporting under the new directive and whether companies find it challenging to follow the new requirements. And here is the methodology of the survey itself, which is taken directly from their corporate site. The survey is based on: *Sixty percent of companies represented are headquartered within the European Union. More than half have annual revenues of over US\$1 billion. Sectors represented included manufacturing (25%); financial services (21%); technology, media and telecommunications (18%); consumer and retail (14%); energy, utilities and resources (13%); and healthcare (7%). Across all respondents, 57% say they will file under the CSRD for the first time in the 2025 financial year, based on FY2024 data (PWC, 2024).*

In this report 2 of the main findings analyzed in the research will be discussed. **Figure 1** depicts the extent to which companies are using sustainability reporting technology. 74 % (the majority) of the respondents pointed out to use spreadsheets. Furthermore, there is an increasing tendency in adopting Carbon Calculation Tools and ERP systems thus companies are aiming to enhance the data accuracy. At the bottom there is AI. Nowadays, we notice a trend in AI taking over different operations across various departments of MNCs and TNCs, however AI remains at the bottom of the graph since back in the beginning of 2024 it was a relatively new technology. What is noticeable here is that the majority for this

period still relies on traditional tools (Spreadsheets, ERP), rather than more cutting-edge technologies. (AI, Data Storage).

Question: Please indicate the extent to which your company uses the following tools/technology for sustainability reporting.

- We are currently using this tool/technology
- We plan to use this tool/technology in the future (within the next one to two years)
- We are exploring the use of this tool/technology



Source: PwC

Fig. 1. The extent to which companies use sustainable technology

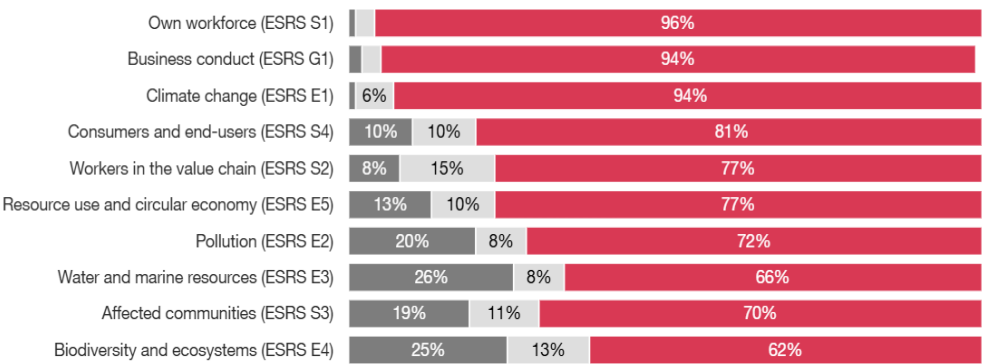
Figure 2 presents data regarding how confident companies are in reporting to the different categories of ESRS. In the poll each market corresponds to specific standard. The results show that companies have the highest confidence levels in workforce management (ESRS S1), business conduct (ESRS G1), and climate change (ESRS E1). Supposedly, this confidence originates from the fact that companies are more familiar with their internal operations since they it is easier for them to follow the know-how.

Next come the indicators where companies have answered with moderate confidence. These include: Consumers and End-users (ESRS S4), Workers in the Value Chain (ESRS S2), Resource Use and Circular Economy (ESRS E5). While internal operations require knowledge based on micro level, here the companies have to draw information from the macro environment (beyond their direct operations). For instance- consumer behavior, suppliers network, product lifecycle, engaging third parties.

Last but not least, low confidence level is represented in Pollution, Water and Marine Resources, Affected communities, Biodiversity. Consequently, this indicates that environmental standards are challenging matter, since reporting of such kind requires location-specific data which may vary depending on specific industries.

Question: How confident do you feel in your company's ability to meet the reporting requirements of the following topics?

■ N/A or not in scope ■ Not confident ■ Confident



Source: PwC

Fig. 2. Confidence in meeting reporting requirements

5. OPPORTUNITIES FOR EU COMPANIES

A Spanish article published in the "Regional Accounting Council of Santa Catarina" provides in-depth analysis on the sustainability reporting from EU perspective and what are the number of opportunities for EU companies. Here are several opportunities defined by the author:

- First and foremost, ESRS provide an essential framework for strategic integration or in other words said, by applying these standards into their corporate goals, they actually enhance long-term sustainability.
- Second and subsequent, there will be improved transparency and accountability at corporate level. By following these mandatory reporting requirements concerning the environment, EU companies have an opportunity to strengthen their trustworthiness in the eyes of the stakeholders.
- Furthermore, in this paper it was already discussed the so-called Double Materiality Assessment (DMA) which is designed to allow companies to gain a comprehensive overview of their sustainability footprint. Thus, there is enhanced risk management (reporting both financial and environmental impacts). With DMA there is also an opportunity for managing for effectively sustainably-related risks.
- In addition, *reporting standards are not only used to provide information to capital markets but also to influence corporate culture and corporate behavior. This is the case especially in the EU context, given that reporting has also the aim to guide companies towards a sustainable economy* (Fasan, 2024) This means that ESRS are multifunctional

and promote sustainable development across all EU members and even beyond. In international context the cultural factor always plays a vital role and it should be taken into account in order to bring the concepts to fruition.

The truth is that reporting under CSRD and sticking to ESRS offers a variety of possibilities for EU companies. Even though it may appear challenging at first glance, the whole process enables businesses to follow suit by implementing sustainable strategies, enhancing transparency of reporting, and building long-term resilience toward climate change.

CONCLUSION

To sum it all up, the aim of this report was to analyze what challenges and opportunities befall when companies reported under the CSRD and ESRS. The directive and respectively the standards exist because the EU had an idea to help companies with balancing environmental and social responsibilities at the same time. Everything is part of the European Green Deal which has made a promise to make Europe the first climate neutral continent by 2050.

The CSRD focus on two main things regarding companies. These are transparency and accountability in their actions: firstly -how they impact people in the environment and secondly – how ESG factors affect their business. On the one hand, when a company reports under CSRD it will face some challenges like stricter audits, digital reporting, and the need for clear supply chain information. Accordingly to Eurostat *in 2024 around 50 000 were in scope and by the end of 2025 10 000 more non-EU companies will be included* (European Commission, 2025).

On the other hand, these underlying opportunities which can help businesses with, for example, gaining competitive edge. With transparency and accountability the business strengthens the trust in stakeholders and definitely proves the strategy that a particular company is future-oriented towards sustainability. The meaning of being sustainable is connected with meeting the needs of the present without compromising the ability of future generations to meet their needs. Compliance with CSRD offers businesses a chance to improve the quality and the transparency of the data which is reported. In this way the companies can strengthen the trust and reliability to their stakeholders and investors. It is always a good sign when a company reports sustainably. What's more, there will be increased brand reputation and the standardization will serve as a benchmark for evaluating business performance.

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UNEMPLOYMENT AND THE FUTURE OF WORK IN EU

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Abstract

Unemployment remains one of the most persistent socio-economic challenges in Europe. This paper aims to explore the dynamics of unemployment and the future of work among digital transformation, automation, and green transition. By combining economic and technological perspectives and indicators, it analyses structural changes in the labour market, EU policy responses, and variations among countries. Even though technological advancements may display certain jobs, it also generates new forms of employment. The paper concludes the labour market policies and EU strategies which are crucial for sustainable employment in the digital era.

INTRODUCTION

Unemployment has been one of the most requiring attention economic and social issues in Europe, and especially in European Union (EU). The global financial crisis in 2008 and the subsequent Eurozone crisis exposed weaknesses in the structure of the labour markets across all member states. Although there was a recovery afterwards, there are still variances that remained: while Germany's unemployment rate has consistently remained below 4%, Spain and Greece have faced double-digit rates even in the post-pandemic period (Eurostat, 2024). The COVID-19 crisis and the ongoing technological transformation have further escalated the debate on the future of work in Europe.

Studies have explored the relationship between automation and employment, with mixed conclusions. Some economists predict massive job losses due to artificial intelligence (AI) and robotics (Frey and Osborne, 2017), while the others suggest that technological progress historically leads to job creation and productivity growth (Author, 2015). Despite the extensive research, there remains a gap in understanding how EU institutions and national policies can effectively balance innovation with social integration.

The primary limitation of the current studies lies in their split focus – many analyze technology and labour policies separated, without integrating both of the perspectives. The aim of the paper is to synthesize the economic and technological dimensions of the employment and work transformation. The examined macroeconomic trends, technological disruption and EU strategies are needed for sustainable future of work.

Expected results include identifying the causes of employment, evaluating the effectiveness of EU-level employment strategies, and proposing recommendations that support labour sustainability and adaptability in an era of digital changes and transition.

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ECONOMIC CONTEXT OF UNEMPLOYMENT IN THE EU

The EU labour market has gone through substantial transformation over the past two decades. Unemployment rates have fluctuated in response to global economic changes, internal EU dynamics and evolving production. According to Eurostat (2024), the average unemployment rate in the EU stood at 5.9% in 2024. The percentage has significantly decreased, in 2019 it was 7.6 %. This decline reflects a gradual recovery following the COVID-19 pandemic, improved fiscal coordination among member states.

Table 1. Unemployment Rate by the Selected EU Member States for 2024

Country	Unemployment Rate (%)	Youth Unemployment (%)
Germany	3.2	5.8
France	7.3	16.2
Spain	11.8	27.1
Poland	2.8	8.4
Greece	10.9	25.4
EU Average	5.9	14.5

Source: Eurostat Labour force survey, 2024.

However, unemployment remains unevenly distributed across the Union. Northern and Western European countries, such as Germany, the Netherlands and Denmark record some of the lowest unemployment rates, often below 4%, while Southern and Eastern Member states, including Spain, Greece and Italy continue to experience double-digit unemployment figures. Structural challenges, such as labour markets, lower productivity and skill mismatches, contribute to these regional disparities.

According to Eurostat's 2024 Labour Force Survey, around 12.9 million individuals across the EU are currently unemployed, representing a significant improvement compared to the 16.4 million recorded in 2019. Yet, hidden behind the aggregate decline is a worrying persistence of long-term unemployment those jobless for more than twelve months – which still accounts for over 35% of all unemployed persons. This pattern suggests that structural barriers, rather than cyclical downturns, remain the core challenge in achieving full employment. Sectors heavily dependent on low-skilled labour, such as retail and manufacturing, have been most affected by automation and global competition, while knowledge-intensive sectors continue to expand.

Another important feature revealed by Eurostat (2024) is the gender gap in employment. Women's employment rate in the EU reached 69.3% in 2024, compared to 78.4% for men. Although the gap has narrowed slightly since 2010, it continues to reflect unequal access to high-quality, full-time employment opportunities. Flexible and part-time contracts, which often characterise the post-pandemic labour market, disproportionately affect women, particularly those with care responsibilities.

In addition, the EU faces demographic pressures and labour shortages in specific sectors. The ageing population and declining birth rates have led to decreases workforces in

several countries, raising concerns about long-term labour supply sustainability. At the same time, demand for highly skilled professionals in digital and healthcare sectors continues to grow, reinforcing competition for talent across member states.

Macroeconomic factors, including inflation, energy prices and global trade disruptions have also shaped recent employment trends. The EU's response through different initiatives has aimed to promote sustainable job creation, digital transformation and green transition. Nevertheless, the rise of work and regional inequalities remain major policy challenges in ensuring inclusive growth and full employment across the Union.

These variations reflect structural and institutional differences, including labour market flexibility, education systems, and industrial structures. Southern European countries with inelastic labour markets and high youth unemployment remain vulnerable, while Central and Eastern European countries such as Poland have benefited from the manufacturing growth and EU structural funds.

The unemployment rate can be calculated using the standard economic formula:

$$U = \frac{U_n}{E + U_n} \times 100$$

Where U represents the unemployment rate, U_n the number of unemployed persons, and E the number of employed persons. This formula illustrates the proportional relationship between unemployment and the total labour force.

TECHNOLOGICAL TRANSFORMATION AND AUTOMATION

Digitalisation and automation represent both a challenge and an opportunity for Europe's workforce. The introduction of artificial intelligence, robotics and big data analytics has reshaped production and service models. According to the European Commission (2023), up to 14% of current jobs in EU could be automated within the next decade, while 32% will experience substantial transformation.

Germany's automotive sector offers a clear example. The shift to electric vehicles and Industry 4.0 technologies has reduced traditional assembly-line roles but increased demand for software engineers, data analysts and maintenance technicians (BMW Group Report, 2023). Opposite in Southern Europe, slower technological adoption risks increasing the skill gaps.

However, automation does not necessarily imply job losses. Historical evidence suggests that new technologies tend to generate new occupations, such as digital marketing, cybersecurity and green energy management. The key issue is transition speed – how rapidly education and training systems can adapt to changing labour demands.

The EU has acknowledged this through strategies like the Digital Education Action Plan (2021-2027) and the European Skills Agenda which aim to equip citizens with future-oriented competences. Moreover, social dialogue between governments, employers and trade unions plays a vital role in managing technological transitions fairly ensuring that no region

or worker is left behind. If managed strategically, automation could enhance productivity, create higher-quality jobs and strengthen Europe's global competitiveness in the digital era.

THE ROLE OF THE EUROPEAN UNION IN LABOUR MARKET POLICY

The EU has implemented several initiatives to tackle unemployment and prepare for the future of work. Key of them are European Pillar of Social Rights, the Recovery and Resilience Facility and the Digital Europe Programme. These frameworks aim to promote fair working conditions, digital literacy and employment resilience.

The European Social Fund Plus (ESF+) supports upskilling and re-skilling initiatives, focusing particularly on youth and long-term unemployed persons. For example, through the Youth Guarantee scheme, millions of young Europeans have received training or job placement opportunities since 2014 (European Commission, 2024).

At the macroeconomic level, the NextGenerationEU programme links recovery funding to structural reforms that promote green and digital transitions. This policy alignment underscores the EU's recognition that unemployment and technological transformation must be addressed together rather than separately.

EDUCATION, SKILLS AND THE FUTURE OF WORK

The future of employment in Europe will depend heavily on the adaptability of education systems. Lifelong learning and vocational education are becoming essential. According to the OECD (2023), over 40% of adults in the EU lack the basic digital skills necessary for emerging occupations. This skills gap poses a major risk to both economic competitiveness and social cohesion, as workers without adequate training face a higher likelihood of long-term unemployment or labour market exclusion.

Finland, for example, has implemented a national "Lifelong Learning Strategy" that encourages citizens to upskill continuously through digital platforms (Finnish Ministry of Education, 2023). In contrast, countries with less developed adult education systems face persistent structural unemployment.

The EU's Digital Education Action Plan (2021-2027) represents a key policy response to these challenges. It aims to strengthen digital competence frameworks, promote innovative teaching methods, and foster cross-border cooperation between universities, training providers, and industries. In parallel, the European Skills Agenda and the Pact for Skills support the creation of large-scale partnerships to retrain workers in strategic sectors such as renewable energy, health care, and information technology.

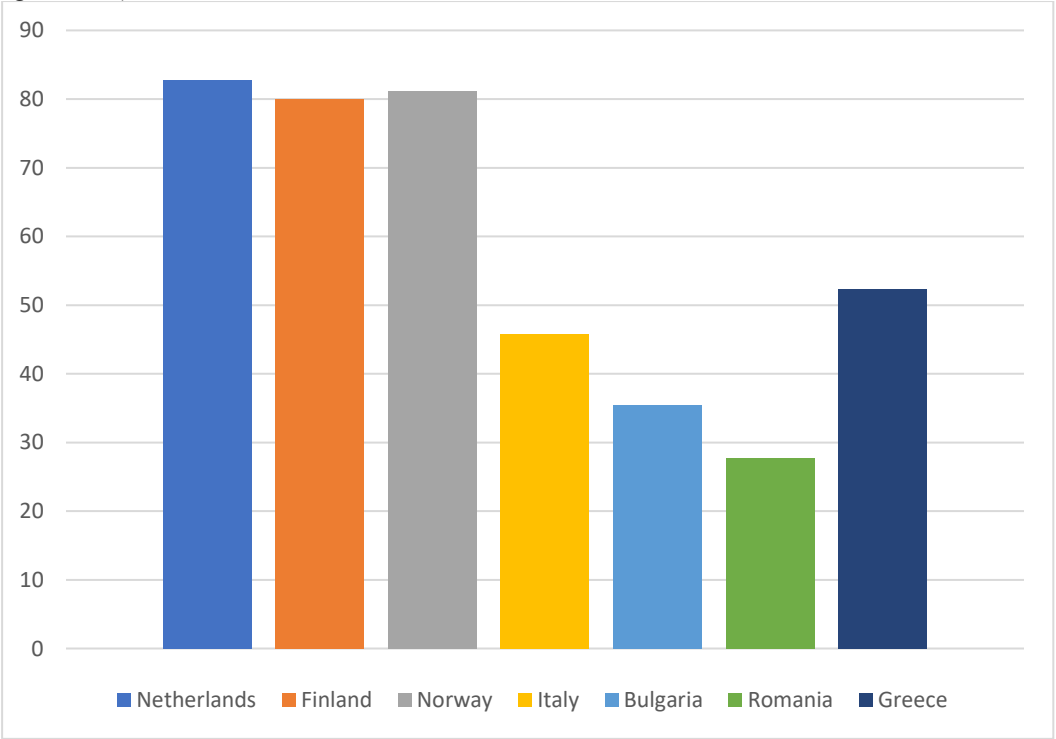
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However, implementation remains uneven across member atates, reflecting differences in funding capacity, institutional structures, and social priorities. Rural and peripheral regions, in particular, struggle to provide equal access to digital education and upskilling opportunities. This underlines the need for stronger EU-level coordination, better monitoring of national initiatives, and targeted investment through instruments such as the European Social Fund Plus (ESF+) and NextGenerationEU.

Ultimately, the success of Europe's future labour market will depend on the ability of its education systems to foster agility, creativity, and resilience skills that cannot easily be replaced by machines. By aligning education policies with technological and demographic trends, the EU can build a more adaptable and inclusive workforce capable of thriving in the rapidly evolving future of work.

Table. 2. Share of Adults with Basic or Above-basic Digital Skills in the EU, 2023 (% of population aged 16-74)



Source: Eurostat, *Digital Economy and Society Statistics (2023)*

As shown in Table. 2 Nordic countries such as Finland and Sweden record the highest level of digital competence, exciding 70% while Southern and Eastern European countries, including Greece, Italy and Romania remain below 40%. These disparities underline the urgent need for EU to invest in digital literacy to ensure equitable access to emerging job opportunities.

THE GREEN TRANSITION AND NEW EMPLOYMENT MODELS

Sustainability is another –factor shaping Europe’s future of work. The transition to a carbon-neutral economy – central to the European Green Deal – will eliminate certain jobs in fossil fuel industries while creating new opportunities in renewable energy, circular economy and sustainable agriculture.

For example, in Poland’s Silesia region, coal mine closures are being accompanied by retraining programmes for solar panel technicians and energy auditors, financed by the Just Transition Fund (European Commission, 2023). Similarly, Spain’s green hydrogen initiatives are projected to create thousands of high-skilled technical jobs over the next decade.

At the same time, the rise of remote work, gig platforms, and hybrid employment models is blurring traditional employer – employee relationships. While flexible work arrangements increase participation, especially among women and people with disabilities, they also raise concerns about job security, collective bargaining and social protection (ILO, 2024).

CONCLUSION

Unemployment in the EU remains a multifaced issue shaped by economic cycles, institutional frameworks and rapid technological change. The evidence suggests that the future of work in Europe will not be characterised by mass unemployment, but rather by occupational transformation. Automation and the green transition are expected to replace certain routine jobs while creating new, more knowledge-intensive roles.

However, the capacity of the EU and its member states to manage this transition will determine social outcome. Policies must focus on digital skills development, inclusive education, and flexible labour market regulation. The EU’s coordinated approach through instruments like ESF+ and the Green Deal provides a strong foundation, yet implementation requires consistency, funding and national commitment.

Future research should further explore the micro-level impacts of AI adoption on different sectors and social groups. Understanding these dynamics will be crucial for designing policies that not only reduce unemployment but also ensure a just and inclusive future of work for all Europeans.

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RELIGIOUS TOURISM AS A RELIABLE LONG-TERM SOURCE OF INCOME AT A STATE LEVEL: THE CASE OF SAUDI ARABIA

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Abstract

In Saudi Arabia religious tourism is a key part of the state's economy. The Hajj which is done every year in Mecca is the best example of religious tourism as a reliable long-term source of income in the world. This is proven by the growing numbers of pilgrims who make the trip to Mecca every year as their religious duty. With globalisation it is easier for Muslims to fulfil their religious pilgrimage. With the growing numbers of Muslims, it seems that the religious tourism in Saudi Arabia will continue to grow and provide a long-term source of income for the country.

Keywords: Saudi Arabia, religious tourism, Hajj, long-term source of income

INTRODUCTION

Today, tourism is a significant factor in a country's development and economic growth. It creates jobs and generates large amounts of revenue in the transportation, hospitality and retail sectors. According to recent estimates by UNWTO (United Nations World Tourism Organisation), in 2023, international tourism generated roughly 1.3 billion arrivals and USD 3.4 trillion in revenue. Making up nearly 3 per cent of global GDP (World Tourism Organization, 2024). In the year following the pandemic, the Middle East has emerged as one of the fastest-growing tourist destinations, recording 93 million international arrivals – a 31 per cent increase from pre-pandemic levels – and an estimated USD 137 billion in revenue (World Tourism Organization, 2024).

In today's globalized world, tourism continues to develop and expand as a distinct sector within national economies. Countries are taking advantage of the growing number of travelers each year and are successfully strengthening their positions as global tourist destinations.

Although most countries rely primarily on their historical and cultural heritage to attract visitors and increase their economic prosperity, there are nations that can depend on an even greater degree of stability when it comes to the flow of tourists and visitors. These countries rely specifically on religious tourism. In contrast, tourism based on historical and cultural heritage carries certain risks for states, as it depends heavily on the level of public interest, which may fluctuate over time. Religious tourism, on the other hand – particularly the Hajj in Mecca, Saudi Arabia – does not carry such a risk of losing public interest, since performing the Hajj is one of the Five Pillars of Islam and it must be performed by every Muslim at least once in their lifetime. For this reason, religious tourism in Saudi Arabia is an exceptionally interesting subject of study, as it has no equivalent anywhere else in the world. As the custodian of Islam's two holiest cities (Mecca and Medina), Saudi Arabia has a

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distinct advantage in attracting international tourism – particularly religious tourism. Every year, it welcomes millions of pilgrims to its holy sites, generating significant economic growth for the kingdom.

Although Christians and Buddhists also have their sacred sites, visiting them is not obligatory and, therefore, from an economic point of view, it is not as reliable. Today, the Hajj represents an even more reliable source of income for Saudi Arabia, as traveling to Mecca has become much easier, more convenient, and faster than it was in the past. This has significantly increased the flow of visitors to the Kingdom, as we will see below.

The primary objective of this paper is to analyse religious tourism in Saudi Arabia, with a specific focus on the Hajj, as a reliable and long-term source of income for the state. The reason for focusing on the Hajj and, consequently, on Saudi Arabia is that the pilgrimage is unique in its nature as a type of religious tourism. Unlike other types of religious tourism, it is mandatory for all Muslims who are physically and financially able to perform it. Therefore, it can generate more visits and is a more reliable and consistent source of funds for the state than other types of tourism.

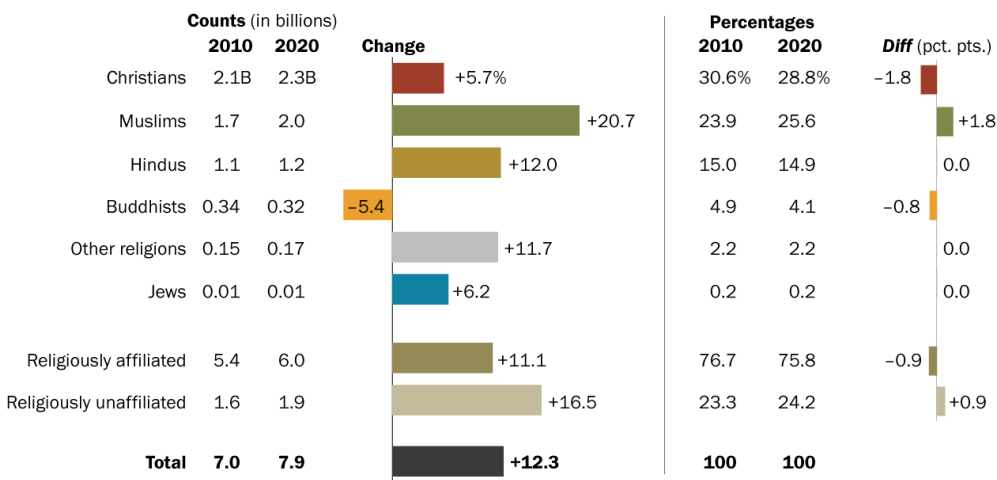
This study seeks to answer the following **two research questions**:

- "What makes the Hajj the most reliable form of religious tourism in the world?"
- "What are the main trends in the development of religious tourism in Saudi Arabia?"

The main thesis of this paper is that the Hajj represents the most reliable form of religious tourism in the world, a fact that stems from the doctrinal foundations of Islam as a religion. The Hajj is the fifth pillar of faith for Muslims, and its performance is obligatory for every believer who has the means to undertake it. This obligation makes it an exceptionally stable and resilient form of tourism, which is why it is expected that the number of pilgrims (muhajirs) performing the pilgrimage will continue to grow in the coming years. Firstly because of the easier travel and secondly because of the increasing number of Muslims who can make the pilgrimage to Mecca. The Muslim population has increased by more than 20 percent between 2010 and 2020 – the largest rise among all major religions; and as a result of globalization and the ease of mobility that modern transportations methods allow for, especially air travel – participation in Hajj and Umrah has and should continue to steadily grow (**figure 1**).

The Muslim population increased more than any other religion from 2010 to 2020

Number and share of the global population that each religion category accounted for



Note: Percentages and differences are calculated using unrounded figures.
Source: Pew Research Center estimates based on more than 2,700 censuses and surveys.

PEW RESEARCH CENTER

Source: Pew Research Center (2025), Islam was the world’s fastest-growing religion from 2010 to 2020.

Fig. 1. Increase of global Muslim population

KEY CONCEPTS AND CONCEPTUAL FRAMEWORK

The Hajj is an obligatory religious pilgrimage. According to the book – *Islamat: Kratak spravochnik* (Evstatiev, S. (ed.), 2007). The Hajj is “the fifth “pillar” of Islam and, along with prayer, holds a particularly important place in the faith. It is an obligation that every believer must fulfill at least once in their lifetime, provided they have the means and physical ability to do so”.

By **Reliable Long-Term Sources of Income**, we refer to economic sectors or activities that generate consistent and predictable revenue over extended periods of time, even during crises. An example of which we can see in the annual Hajj and the year-round Umrah; and because the pilgrimages are due to religious obligation rather than discretionary activity, demand remains strong even during periods of economic downturn (Tabash et al., 2023).

HISTORICAL CONTEXT

Religious tourism predates the concept of leisure travel and is closely linked to the evolution of human civilization. We know that Ancient Egyptians journeyed to sacred temples

seeking divine healing; Greek pilgrims travelled to Delphi to consult the oracle; and early Hindus and Buddhists undertook long pilgrimages along river valleys and trade routes. Over time, these travels helped establish economic linkages between cities – the construction of roads, inns, markets, and other infrastructure needed to facilitate the journeys. In the Middle Ages, pilgrimages were both a religious duty and a social event. They were seen as penitential – a way for people to seek moral or physical healing and to gain absolution from perceived sins (Rountree, Swatos and Tomasi, 2005).

The Hajj is considered the oldest and only form of obligatory religious tourism in the world. It is one of the Five Pillars of Islam and has been practised since 632 AD, when the Prophet Muhammad led the first official pilgrimage to Mecca. During Hajj, the following rituals are performed such as: circling the Kaaba, standing on the Plain of Arafat, and casting stones in Mina. They can all trace their origins to the story of the Prophet Abraham, his wife Hagar, and their son Ishmael. Over time, the Hajj has evolved into a social and economic phenomenon that connects Muslim communities. The rituals are performed as symbolic acts of unity, sacrifice, obedience and humility.

In the past, pilgrims would travel in large caravans from Egypt, Syria, Iraq, Yemen, and other parts of North Africa. These pilgrimages would often take months to reach Mecca. The cyclical and annual nature of these journeys helped establish early trade and cultural exchange between distant parts of the Islamic world. Even during the Ottoman period, the pilgrimage was organized and protected by the state. With roads, rest stops, and water wells being built along the way. Following the establishment of the Kingdom of Saudi Arabia in 1932, and utilising the wealth from the oil well discovered on its territory, the government began to modernise and improve the pilgrimage experience – expanding the Grand Mosque, improving transportation, and building accommodations for the growing number of pilgrims. Today, the Hajj is one of the world's largest annual gatherings. It brings together more than two million Muslims each year (Henderson, 2011).

HAJJ PARTICIPANTS OVER THE YEARS

The number of pilgrims participating in the Hajj has dramatically increased over the past century. In the early 20th century, before the establishment of the modern Saudi state, the number of pilgrims was often limited to a few tens of thousands of Muslims each year. Travel conditions used to be very difficult, long, and dangerous. The pilgrims would have to journey across deserts in large caravans or sail for weeks from Africa and South Asia. Mortality during travel was common, and the pilgrimage was typically reserved for the wealthy and/or physically capable.

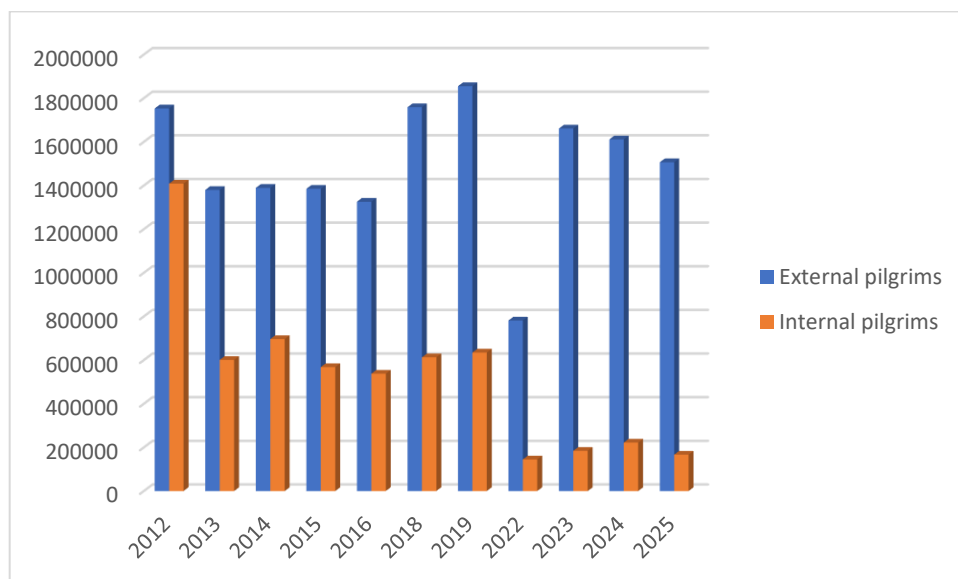
Following the establishment of the Saudi Arabian Kingdom in 1932 and the reforms it introduced to the pilgrimage process, by the 1950s, around 100,000 pilgrims were able to perform Hajj annually. The number of pilgrims was further boosted by the introduction of air travel in the 1960s and 1970s. Some Muslim-majority countries in Asia and Africa have even established charter flights specifically for the Hajj. Air travel is currently the most popular form of travel, evident from the fact that 94.7% of total pilgrims who arrived in 2022 did so by air (**figure 2**).

Port type	Arrival	Departure
Air	94.7%	94.9%
Land	4.5%	4.4%
Sea	0.8%	0.7%
Total	100%	100%

Source: General Authority for Statistics (2022), Hajj Statistics 2022.

Fig. 2. Relative distribution of external pilgrims by method of arrival and departure in 2022

By 2019, just before the COVID-19 pandemic, the Hajj reached a record high of 2.49 million participants, including 1.86 million international pilgrims arriving from more than 180 countries (Zamani-Farahani and Henderson, 2009) (**figure 3**).



Source: General Authority for Statistics (n.d.), Total Number of Pilgrims by Type and Gender [Dataset].

Fig. 3: Number of internal and external pilgrims by gender, based on data from the General Authority for Statistics (n.d.).

TRENDS IN THE DEVELOPMENT OF RELIGIOUS TOURISM IN SAUDI ARABIA

Sector	Number of labor force
Supervision services*	113,800
Public services	73,556
Health Services	26,392
Transportation services	19,421
Telecommunications Services	3,728
Total	236,897

Source: General Authority for Statistics (2022), Hajj Statistics 2022.

Fig. 4. Number of labor force in pilgrims service sector for 2022

Economic activity		Number of employees				
		Males	Fe-males	Total	Male percentage	Fe-male percentage
1	Accommodation for visitors	92,775	17,002	109,777	84.5%	15.5%
2	Food and beverage serving activities	542,312	63,395	605,707	89.5%	10.5%
3	Railway passenger transport	3,607	101	3,708	97.3%	2.7%
4	Road passenger transport	22,748	2,099	24,847	91.6%	8.4%
5	Water passenger transport	906	186	1,092	83.0%	17.0%
6	Air passenger transport	12,314	5,802	18,116	68.0%	32.0%
7	Transport equipment rental	14,968	1,000	15,968	93.7%	6.3%
8	Travel agencies and other reservation services activities	16,643	3,182	19,825	83.9%	16.1%
9	Cultural activities	3,415	1,269	4,684	72.9%	27.1%
10	Sports and recreational activities	8,409	2,894	11,303	74.4%	25.6%
11	Other tourism characteristic services in the country	9,325	3,232	12,557	74.3%	25.7%
12	Retail trade of tourism characteristic goods in the country	39,716	12,515	52,231	76.0%	24.0%
Total		767,138	112,677	879,815	87.2%	12.8%

Source: General Authority for Statistics (2022), Tourism Establishment Statistics 2022; data from the Ministry of Human Resources and Social Development, Ministry of Tourism, and the Saudi Railway Company.

Fig. 5. Saudi Arabia tourism statistics 2022

From the data, we can see that the Hajj pilgrimage is a major source of employment. We can see that in 2022, 236,897 people were employed in the pilgrimage service sector (**figure 4**). The largest concentration of workers was in the Supervision services sector – 113,800,

and the Public services sector – 73,556. When compared to the total tourism labour force of 879,815 employees across the kingdom, the Hajj sector alone accounted for nearly 27% of all tourism-related employment (**figure 5**). With an average stay of pilgrims of up to 30 days, the Hajj presents both the largest seasonal labour mobilisation in the country and a predictable, recurring labour market (Eid, 2012).

Conclusion

From the case of Saudi Arabia, we can see that religious tourism, in particular the Hajj pilgrimage, is a reliable and sustainable long-term source of income for the state. A distinguishing feature, that makes the Hajj pilgrimage unique from other forms of tourism, is its obligatory nature. This creates a stable and recurring flow of visitors, largely unaffected by the economic cycles. Unlike the oil industry, which is built around a finite resource (oil) and is subject to external market fluctuations, as we saw from the sharp drop in its prices during the pandemic, pilgrimage-based income is a stable and growing market. Millions of Muslims visit the holy cities each year for Hajj, and this generates billions of dollars in revenue for the Saudi economy. All of this data confirms that religious tourism makes a significant contribution to employment generation. Almost one-quarter of Saudi Arabia's tourism workforce works in Hajj-related activities.

The growth of pilgrim numbers has been continuous, first increasing from tens of thousands in the early 20th century and then to nearly three million participants in 2024. This expansion has been made possible, mainly by globalisation, modern forms of transportation – especially airlines, and thanks to the government investments made to its infrastructure – including the expansion of the Grand Mosque and the construction of new airports, high-speed rail and accommodation facilities.

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THE STAGNATION OF EUROPE'S STRONGEST ECONOMIES

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Abstract

Europe's strongest economies – Germany, France and Italy – are facing a period of economic stagnation marked by weak growth, declining productivity, and structural imbalances. Once engines of innovation and industrial strength, these nations now struggle with aging populations, energy dependencies, and the lingering effects of inflation and global instability. Slow adaptation to technological change and shifting trade dynamics has further constrained competitiveness. The stagnation of these key economies not only threatens Europe's overall economic vitality but also raises broader concerns about social stability, political cohesion, and the continent's ability to maintain influence in an increasingly multipolar world.

INTRODUCTION (TNR 12PT., BOLD, LEFT CENTRED)

This paper investigates the growing stagnation of Europe's four largest economies – Germany, France and Italy – each facing persistent challenges despite their historical economic strength. It begins by outlining recent trends in growth, productivity, and investment that signal deeper structural issues. The analysis then explores the shared and country-specific factors contributing to this slowdown, including demographic shifts, energy dependencies, and changing global trade dynamics. By comparing policy approaches and long-term economic strategies, the paper aims to highlight both the vulnerabilities and the potential for recovery within these core European economies in an increasingly uncertain global environment.

GERMANY

1. Post-war boom: the Wirtschaftswunder (1950s–1960s)

In the decades following World War II, the then-West Germany (the Federal Republic of Germany) embarked on a remarkable recovery and rapid growth phase, often referred to as the *Wirtschaftswunder* (“economic miracle”). Between 1951 and 1961, the gross national product (GNP) of West Germany rose by about 8 % per year, about double the rate of Britain and the United States. Encyclopedia Britannica⁺¹ The key drivers included:

- Massive reconstruction and renewal of capital stock, aided by the Marshall Plan and favourable geopolitical conditions.
- Liberalization of markets, currency reform (1948 Deutsche Mark), and removal of wartime restrictions.

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- Strong export orientation, particularly in manufactured goods, which trebled between 1951 and 1961 in value. Encyclopedia_Britannica+1
- Rising productivity, as firms adopted modern production techniques, and labor resources shifted from agriculture toward industry and services.

Indicator	Approximate value/annual growth	Notes
GNP growth (1951-61)	~8 % per year	Source: Britannica summary. Encyclopedia Britannica+1
Export growth (1951-61)	Trebled ($\approx \times 3$)	“Exports trebled” stated in Britannica for the period. Encyclopedia Britannica

2. Reunification and adjustment (early 1990s)

With the fall of the German Democratic Republic (East Germany) and reunification in 1990, Germany faced a major structural and fiscal challenge. The formal unification of East and West required integrating a much less efficient economy (East Germany’s productivity was about one-third that of the West before unification) into the common market with Western wage and social standards. Deutsche Welle+1 According to the Ifo Institute, in 1991 eastern Germany’s GDP per capita was only 43 % of the western German average; by 2008 it had only reached about 71 % of that average. EconStor_There were several consequences:

- The 1:1 conversion of East German marks to Deutsche Marks increased wage and price levels in the East rapidly without equivalent productivity improvements, undermining competitiveness. Deutsche Welle
- Massive transfers and investment (“Aufbau Ost”) placed strain on public finances and diverted capital from more productive uses.
- Growth in the West also slowed; from the early 1990s onward, Germany’s growth rate dropped compared to the boom years. A working paper reports average real GDP growth since 1990 of about 1.3 % annually. wermutham.com
- Labor market issues: Unemployment rose particularly in the East; the wage/productivity mismatch undermined employment growth and investment.

Year	GDP per capita in East (% of West)	Productivity per hour in East (% of West)
1991	42.9 %	44.3 % EconStor
2008	~70.9 % (for GDP percapita)	~75.6 % EconStor

3. Export-led resilience and the 2000s boom (late 1990s–2008)

In the late 1990s and through the 2000s, Germany rebounded by leveraging its strengths in manufacturing, exports, and global value chains. The German economy’s share of manufacturing remained relatively high ($\approx 20\text{--}22$ % of gross value added), a distinctive feature among advanced economies. Intereconomics_Exports of goods and services as a share of GDP rose; for example, the dataset from MacroTrends indicates for 2022 exports / GDP at ~ 1.37 % growth rate, but earlier data show the export-intensive growth model. MacroTrends Other positive factors included the “Hartz” labour-market reforms (2003–2005) that improved employment flexibility and reduced unemployment. This era featured:

- Resilient growth in manufacturing and exports even in the face of global competition.
- Germany became Europe's export champion, benefiting from Asian growth and supply chain integration.
- Relatively moderate inflation and labour cost growth helped competitiveness.

However, this export-led model also contained risks: dependency on global demand, especially for capital goods; rising competition from emerging economies; and domestic underinvestment in services and innovation diffusion. By the end of the 2000s, cracks appeared: the economy was less responsive to purely domestic stimuli, and productivity growth began to slow.

4. Stagnation, productivity headwinds and the energy shock (mid-2010s to today)

Since about the mid-2010s, the German economy has been showing signs of stagnation: slowing growth, weak productivity gains and increased vulnerability to external and structural shocks. Key data and issues include:

- Germany's annual GDP growth rate in 2023 was roughly -0.27% . [MacroTrends](#)
- Labour productivity growth (real output per employed person) in Dec 2024 was -0.38% year-on-year. [CEIC Data](#)
- The manufacturing share remained $\approx 20\%$ of gross value added in 2023, emphasising that structural change reduced productivity growth only partially via sectoral composition shift. [Intereconomics](#)
- The structural model of high-export, energy-intensive manufacturing has been hit by multiple shocks: the 2022 Russian invasion of Ukraine disrupted energy supplies; Germany's dependency on imported energy ($\sim 68.6\%$ in 2022) exposed it to price and supply risks. (Source: [Clean Energy Wire](#))
- Investment rates have weakened, business dynamism has slowed, and innovation diffusion (especially digitalisation) has lagged compared to peer nations.

The interplay of these factors: a matured industrial economy facing diminishing returns from its legacy model, rising global competition, structural rigidities in services, demographic headwinds, and energy transition costs all combine to drag growth.

Indicator	Value/year	Commentary
GDP growth 2023	-0.27% MacroTrends	First annual contraction after many years
Labour productivity growth (Dec 2024)	-0.38% y/y CEIC Data	Productivity contracting
Manufacturing share of GVA (~ 2023)	$\approx 20\%$ Intereconomics	Manufacturing still large but structural shift underway

FRANCE

• **Period 1: The "Trente Glorieuses" (The Glorious Thirty) – 1945 to 1973**

The "Trente Glorieuses" was not merely a period of growth; it was a comprehensive economic and social revolution. The foundation was laid by the Marshall Plan, which provided critical initial capital, and a policy of strong state intervention known

as "*dirigisme*." The government, through mechanisms like the Commissariat général du Plan, actively directed investment into key sectors such as energy (with the creation of EDF), transportation (the launch of the TGV program), aerospace, and automotive industries (nationalizing Renault). This was coupled with the construction of a generous welfare state (*Sécurité Sociale*), which boosted consumer confidence and domestic demand. A massive exodus from the countryside to cities provided cheap labor for industry, while productivity soared due to technological catch-up with the United States. The creation of the European Coal and Steel Community (ECSC) and later the European Economic Community (EEC) opened new markets for French goods, fueling an export-led boom. This era was characterized by full employment, rising real wages, and the mass adoption of consumer durables like cars and household appliances, creating a society of consumption that had never before existed in France.

Key Data & Comparison:

- **Average Annual GDP Growth:** ~5.1%
- **Industrial Production:** Increased dramatically, establishing strong automotive, aerospace, and energy sectors.
- **Standard of Living:** Real disposable household income doubled.

Indicator	~1950 Level	~1973 Level	Change
GDP per Capita (1990 USD)	~\$5,000	~\$13,800	+176%
Percentage of Workforce in Agriculture	~30%	~10%	-20 ppt
Car Ownership (per 1000 people)	~37	~315	+750%

Source: French National Institute of Statistics and Economic Studies (INSEE) – "Les Trente Glorieuses, 1945-1975" <https://www.insee.fr/fr/statistiques/2383320> Additional Data: The Conference Board, Total Economy Database. <https://www.conference-board.org/data/economydatabase/>

- **Period 2: The "Crise" and Rise of Unemployment – 1974 to 1990**

The OPEC oil shocks of 1973 and 1979 acted as a brutal external shock to the French economic model. As the price of imported oil quadrupled, it triggered rampant inflation and exposed the inefficiencies of the aging industrial structure. France entered a period of "stagflation," a previously unknown phenomenon where high inflation coexisted with stagnant growth and rising joblessness. Initially, President Valéry Giscard d'Estaing's government pursued a policy of "désinflation compétitive" (competitive disinflation), but the socialist government of François Mitterrand, elected in 1981, initially reversed course. It launched a massive Keynesian reflation program, nationalizing banks and key industries while increasing wages and social benefits. This stimulus, however, ran into the wall of a global recession and rising U.S. interest rates, leading to a severe balance of payments crisis and capital flight. The pivotal "**tournant de la rigueur**" (**austerity turn**) in 1983 marked a historic policy shift. Mitterrand abandoned the socialist stimulus to prioritize staying within the European Monetary System (EMS), fighting inflation, and embracing market openness. This period saw the beginning of deindustrialization, as uncompetitive factories closed, and the unemployment rate soared to levels previously unthinkable, creating a social scar that would define subsequent decades.

Key Data & Comparison:

- **Average Annual GDP Growth:** Fell to ~2.4%.
- **Unemployment:** Soared from ~2.8% in 1974 to over **9.5%** by 1985.
- **Inflation:** Peaked at over 13% in 1974 before being brought under control.

Indicator	1974 Level	1990 Level	Change vs. Previous Period
Average GDP Growth (Annual)	-	-	Fell from 5.1% to 2.4%
Unemployment Rate	~2.8%	~9.0%	+6.2 percentage points
Public Debt (% of GDP)	~20%	~35%	+15 percentage points

Source: OECD Economic Outlook: Statistics and Projections.

<https://stats.oecd.org/>

Source: Banque de France – Historical Economic Data.

<https://www.banque-france.fr/en/statistics/historical-series>

- **Period 3: European Integration and the "France des Petits Pains" – 1991 to 2007**

This period was overwhelmingly defined by the project of European Monetary Union (EMU). The Maastricht Treaty (1992) established strict **convergence criteria** for public deficit (below 3% of GDP), public debt (below 60% of GDP), and inflation. Successive governments, both conservative and socialist, were therefore locked into a policy of fiscal consolidation to qualify for the single currency. This involved controlling public spending and implementing privatizations. The launch of the Euro in 1999 brought macroeconomic stability, low interest rates, and an end to currency devaluations as a policy tool. While this stability prevented major crises, it also exposed French industry to greater competition without the ability to devalue. The term "**France des petits pains**" was coined by economist Nicolas Baverez, capturing the sentiment of an economy that was stable and avoiding collapse but lacking dynamism. Growth was steady but too weak to make a significant dent in the structurally high unemployment rate, which fluctuated between 8% and 10%. Purchasing power growth was sluggish, and the social model, financed by high taxes on labor, began to be seen as a drag on competitiveness. Public debt continued to accumulate, as fiscal targets were often missed during economic slowdowns.

Key Data & Comparison:

- **Average Annual GDP Growth:** ~2.0%.
- **Unemployment:** Remained high, fluctuating between 8% and 10%.
- **Public Debt:** Continued its upward climb, from ~35% to over **60%** of GDP.

Indicator	1991 Level	2007 Level	Characteristic
Average GDP Growth (Annual)	-	-	Modest at ~2.0%
Unemployment Rate	~9.4%	~8.4%	Persistently High
Public Debt (% of GDP)	~35%	~64%	Rapid Accumulation

Source: European Commission – AMECO Database (Annual macro-economic database).

https://economy-finance.ec.europa.eu/economic-research-and-databases/economic-databases/-ameco-database_en

Source: INSEE – National Accounts. <https://www.insee.fr/en/statistiques/serie/010565925>

- **Period 4: The Stagnation and Recurring Crises – 2008 to Present**

Characterization: A period defined by the fallout from the Global Financial Crisis, the Eurozone sovereign debt crisis, the COVID-19 pandemic, and recent energy shocks, leading to secular stagnation and the full crystallization of France's long-standing structural weaknesses.

The 2008 Global Financial Crisis brutally ended the previous era's stability. France experienced a sharp recession in 2009. The government responded with a large stimulus plan, which, while cushioning the blow, caused the public deficit to balloon to over 7% of GDP and debt to surge. Unlike Germany, which recovered rapidly, France's growth remained anemic. The subsequent **Eurozone Sovereign Debt Crisis** exposed the vulnerabilities of the single currency and placed France under market scrutiny, as it struggled to bring its public finances under control. President François Hollande famously declared a "war" on unemployment in 2012, but his term was marked by fiscal austerity and persistently high joblessness. The government of Emmanuel Macron, elected in 2017, embarked on a program of structural reforms, including liberalizing the labor market, overhauling the unemployment insurance system, and cutting corporate taxes to boost investment. While these reforms improved business confidence and attracted foreign investment, their impact on overall growth and unemployment has been moderate, and they have faced significant social resistance (the *Gilets Jaunes* movement). The **COVID-19 pandemic** led to the largest peacetime economic contraction since WWII, followed by massive state-guaranteed loans and furlough schemes that again pushed public debt to new heights. The recent energy crisis following the war in Ukraine has further strained public finances through price caps and exacerbated inflation, squeezing household purchasing power. This period is defined by the convergence of these repeated external shocks with deep-seated domestic issues: a tax and regulatory burden that stifles business, a public sector that consumes over 57% of GDP, and a persistent loss of industrial market share.

Key Data & Comparison:

- **Average Annual GDP Growth (2008-2023):** ~0.8%.
- **Public Debt:** Ballooned from ~64% in 2007 to **110.6%** in 2023.
- **Manufacturing:** Share of value-added in GDP fell significantly.

Indicator	2008 Level	2023 Level	Change & Status
Average GDP Growth (Annual)	-	-	Stagnation at ~0.8%
Public Debt (% of GDP)	~68%	110.6%	Massive Increase
Manufacturing (% of GDP)	~12%	~9%	Industrial Decline
Budget Deficit (% of GDP, 2023)	-3.3%	-5.5%	Persistent Deficit

Source: INSEE – "The French economy in 2023" – National Accounts. <https://www.insee.fr/en/statistiques/7046277> Source: Eurostat – Government Finance Statistics. https://ec.europa.eu/eurostat/databrowser/view/gov_10dd_edpt1/default/table?lang=en

ITALY

- **Period 1: The "Il Boom" (The Economic Miracle) – 1950 to 1963**

The Italian "Economic Miracle" was one of the most rapid transformations of any Western European country in the 20th century. Driven by the post-war Marshall Plan, access to cheap energy, and a large reservoir of underemployed labor from the

impoverished South (*Mezzogiorno*), Italy capitalized on its strengths in light engineering, textiles, and household goods. The state played a crucial role through IRI (Istituto per la Ricostruzione Industriale), a massive state-holding company that controlled key sectors like steel, energy, and machinery. The creation of the European Economic Community (EEC) in 1957 provided a vital export market for the "Made in Italy" brand, which was characterized by agile small and medium-sized enterprises (SMEs) clustered in industrial districts of the Center-North. This period saw a massive internal migration from the South to the industrial cities of the "Industrial Triangle" (Milan-Turin-Genoa). While growth was spectacular, it also created significant regional disparities and laid the groundwork for a clientelistic political system, as the state-controlled sector was often used for political patronage.

Key Data & Comparison:

- **Average Annual GDP Growth:** Over 5.5%, peaking at 8.3% in 1961.
- **Industrial Output:** More than doubled.
- **Structural Shift:** The agricultural workforce shrank dramatically as industry expanded.

Indicator	~1951 Level	~1963 Level	Change
GDP per Capita (1990 USD)	~\$3,500	~\$7,400	+111%
Percentage of Workforce in Agriculture	~44%	~25%	-19 ppt
Industrial Production Index (1950=100)	100	~270	+170%

Source: Italian National Institute of Statistics (ISTAT) – "Italy in 150 years – Summary of Historical Statistics" <https://www.istat.it/it/archivio/197717>
Additional Data: The Conference Board, Total Economy Database.
<https://www.conference-board.org/data/economydatabase/>

- **Period 2: The "Anni di Piombo" and Disinflation – 1964 to 1991**

The "Years of Lead" began with the Hot Autumn of 1969, a wave of militant labor union strikes that secured significant wage increases and a robust *Statuto dei Lavoratori* (Workers' Statute), which strengthened job security but also introduced rigidities into the labor market. This period was marked by political instability and domestic terrorism. The two oil shocks of the 1970s hit Italy's energy-dependent economy hard, triggering rampant inflation that peaked at over 21% in 1980. Unlike other countries, Italy initially accommodated these shocks through currency devaluations and inflationary wage settlements, a policy known as "*svalutazione competitiva*" (competitive devaluation). This allowed exporters to remain competitive but eroded domestic purchasing power and savings. A pivotal shift occurred in 1979 with Italy's entry into the European Monetary System (EMS) and, most importantly, in 1981 with the "divorce" between the Bank of Italy and the Treasury. This ended the central bank's obligation to finance public deficits, forcing fiscal discipline. The 1980s became a long, painful struggle to bring inflation down from double digits to align with German levels, a prerequisite for the planned single European currency.

Key Data & Comparison:

- **Average Annual GDP Growth:** Slowed to ~3.0%, with high volatility.
- **Inflation:** Averaged over 12% in the 1970s, gradually falling to ~6% by 1990.
- **Public Debt:** Exploded from ~40% of GDP in 1970 to over **100%** by 1991.

Indicator	~1964 Level	~1991 Level	Key Trend
Average GDP Growth (Annual)	-	-	Slowed from >5.5% to ~3.0%
Inflation Rate (CPI)	~5.5%	~6.5%	Extreme Volatility, Peaked at 21%
Public Debt (% of GDP)	~40%	~100%	Massive Accumulation

Source: Bank of Italy – "Historical Series of Main Economic Indicators" <https://www.bancaditalia.it/publicazioni/serie-storiche/index.html>

Source: IMF World Economic Outlook Database. <https://www.imf.org/en/Publications/WEO/weo-database/2024/April>

• **Period 3: The Maastricht Straitjacket and Stagnant Growth – 1992 to 2007**

The 1990s were a watershed. The *Mani Pulite* (Clean Hands) corruption scandals dismantled the post-war political establishment, discrediting the parties that had managed the state-controlled economy. To qualify for the Euro, Italy had to meet the strict Maastricht criteria, requiring brutal fiscal adjustments, including a "one-off Eurotax." Entry into the Eurozone in 1999 was a double-edged sword. It brought macroeconomic stability, low interest rates, and an end to the high inflation that had plagued the country. However, it also eliminated the primary tool – periodic Lira devaluations – that for decades had masked the underlying decline in Italy's productivity and competitiveness. Without the ability to devalue, the structural weaknesses of its economy were laid bare: a high public debt burden, a rigid labor market divided between protected insiders and precarious outsiders, an inefficient justice system, and a chronic North-South divide. Growth in this period was the weakest among major EU economies, earning this era the name "*il declino*" (the decline). The economy's structure shifted towards smaller, family-run SMEs and micro-enterprises, which struggled to achieve the scale needed for global competition.

Key Data & Comparison:

- **Average Annual GDP Growth:** Fell to ~1.3%.
- **Public Debt:** Remained stubbornly high, hovering around 100-110% of GDP.
- **Productivity:** Stagnant, with near-zero growth in Total Factor Productivity (TFP).

Indicator	1992 Level	2007 Level	Characteristic
Average GDP Growth (Annual)	-	-	Anemic at ~1.3%
Public Debt (% of GDP)	~108%	~99.8%	Persistently High
Labor Productivity Growth (Avg. Annual)	-	-	Near Zero

Source: European Commission – AMECO Database https://economy-finance.ec.europa.eu/economic-research-and-databases/economic-databases/ameco-database_en Source: ISTAT – National Accounts. <http://dati.istat.it/>

- **Period 4: The Triple-Dip Recession and Secular Stagnation – 2008 to Present**

The Global Financial Crisis triggered Italy's longest and deepest post-war recession. The country experienced a "triple-dip" recession (2008-09, 2011-12, 2014). The **Eurozone Sovereign Debt Crisis** placed Italy at the center of the storm, with its high public debt making it vulnerable to market panic. Spreads between Italian and German government bonds (the BTP-Bund spread) widened dramatically, threatening the country's financial stability. This forced technocratic and center-left governments to implement harsh austerity measures, which further crushed domestic demand. A critical and lasting legacy of this period is the banking crisis, where a mountain of non-performing loans (NPLs) accumulated on the balance sheets of banks, crippling their ability to lend to businesses. While modest reforms were attempted (like the *Jobs Act* of 2014-15 to liberalize the labor market), political instability and public resistance prevented deep structural change. The country's profound demographic crisis – a chronically low birth rate and youth emigration – has exacerbated the situation, leading to a shrinking working-age population. The massive fiscal supports during the COVID-19 pandemic, funded by the EU's NextGenerationEU recovery fund, have offered a lifeline but have also pushed public debt to new record highs, leaving the economy highly vulnerable to shifts in monetary policy and investor sentiment.

Key Data & Comparison:

- **Average Annual GDP Growth (2008-2023):** ~ -0.2%.
- **Public Debt:** Soared from ~99.8% in 2007 to over **137%** in 2023.
- **Real GDP:** As of 2023, it was still below its pre-2008 level.

Indicator	2008 Level	2023 Level	Change & Status
Average GDP Growth (Annual)	-	-	Effectively Zero / Negative
Public Debt (% of GDP)	~102%	137.3%	Dangerously High
Youth Unemployment Rate (2023)	~21%	~22.7%	Persistently High
Real GDP (Index 2008=100)	100	~99	Lost Decade and a Half

Source: Italian Ministry of Economy and Finance – "Public Finance Update" (April 2024); <https://www.mef.gov.it/en/focus/Public-Finance-Update-April-2024/> Source: Eurostat – Government Finance and GDP Data. <https://ec.europa.eu/eurostat/databrowser/view/tec00115/default/table?lang=en>

- **Conclusion: The Convergent Paths of Stagnation in Europe's Core**

The economic narratives of Germany, France, and Italy, while distinct in their particulars, reveal a powerful and convergent story of how initial post-war successes gradually gave way to a shared reality of stagnation in the 21st century. This stagnation is not a sudden crisis but the culmination of long-evolving structural rigidities, political choices, and the challenges of adapting venerable social and economic models to the pressures of globalization and technological change. A comparative analysis reveals a triad of core vulnerabilities that bind these nations together, even as they manifest differently in each.

- **Germany's Complacency:** The famed "Modell Deutschland," built on high-quality manufacturing, sectoral wage bargaining, and a robust *Mittelstand*, became a source of complacency. Its over-reliance on manufacturing exports, particularly

to China, and a delayed transition to the digital economy left it acutely vulnerable to supply chain disruptions and the global shift away from combustion engines.

- **France's State-Centric Rigidity:** The French *dirigiste* model, so effective during the *Trente Glorieuses*, ossified into a high-cost, state-heavy economy. The consistent public expenditure above 57% of GDP, funded by high taxes, stifles business dynamism and private investment.
- **Italy's Institutional Fragility:** The "Il Boom" model, reliant on agile SMEs and periodic currency devaluations, hit a wall upon joining the Euro. The loss of the lira as a shock absorber laid bare chronic weaknesses: an inefficient public administration, a slow and unpredictable justice system, a crippling North-South divide, and a political culture that has consistently failed to enact deep, productivity-enhancing reforms.
- **The Demographic and Debt Dilemma**

Second, all three nations face a demographic headwind of aging populations and low birth rates, which simultaneously shrinks the labor force and increases the fiscal burden on the state for pensions and healthcare. This demographic challenge is catastrophically intertwined with a public debt crisis.

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IMPLEMENTATION OF NEW TECHNOLOGIES FOR AUTOMATION AND INCREASING PUBLIC TRANSPORT SAFETY IN TIRANA: ECONOMIC IMPACT AND COST ANALYSIS

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Abstract

This paper analyzes the implementation of automation and safety-enhancing technologies in Tirana's public transport system using official statistical data. The study evaluates economic impacts, cost structures, safety benefits, and policy implications.

Urban mobility in Tirana is increasingly challenged by high motorization rates, congestion, and persistent road safety risks. This study examines the potential of new technologies for automation and safety enhancement in Tirana's public transport system, focusing on their economic impact and cost-effectiveness. Using official statistical data from INSTAT, municipal transport reports, and survey-based mobility studies, the paper analyzes current transport usage patterns, accident trends, and infrastructure constraints. The findings show that Tirana concentrates approximately one-third of Albania's registered vehicles, with car ownership reaching 500–550 vehicles per 1,000 inhabitants, while only around 22% of residents regularly use public buses. International empirical evidence demonstrates that Intelligent Transportation Systems (ITS), real-time fleet management, and automated safety technologies can reduce operational costs by 10–20% and accident-related costs by up to 40%.

Applied to Tirana, these technologies could significantly improve service reliability, reduce congestion-related economic losses, and enhance passenger safety. Although initial investment costs are substantial, long-term savings and social benefits suggest that a phased implementation strategy supported by EU funding mechanisms and regulatory reform would yield a positive return on investment within a medium-term time.

Keywords: Public transport, Automation technologies, Intelligent Transportation Systems (ITS), Urban mobility, Transport safety, Economic impact, Cost–benefit analysis, Smart city

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1. INTRODUCTION

Tirana faces increasing congestion, high vehicle ownership, and low public transport usage. Automation and intelligent transport systems offer solutions for efficiency and safety improvements.

Public transport systems worldwide face pressures from rising urbanization, worsening traffic congestion, and safety challenges. In Albania – where citizens still largely depend on private cars and rate public transport quality as low – **adopting automated technologies and intelligent safety systems** represents a strategic opportunity to improve service reliability, safety, and economic performance.

This article synthesizes **statistical data**, research findings, and cost-benefit considerations to show how automation and safety technologies could transform Albania's public transport.

2. PUBLIC TRANSPORT AND MOBILITY DATA FOR TIRANA

2.1 Usage Patterns

- In Tirana, only about 22 % of residents use public buses regularly, while 55 % rely on private cars and 25 % walk, highlighting a **heavy dependency on private vehicles**.
- In a citizen survey, 84 % rated public transport quality as poor, citing irregular schedules and overcrowding as major issues.

2.2 Road Safety Data

- Road traffic accidents remain a significant public health issue in Albania. In recent months, **INSTAT reported non-trivial accident frequencies**, with behavioural factors (driver inattention) accounting for over 80 % of accidents.
- Recent studies (2025) also note an **increase in injured individuals linked to traffic accidents**, especially involving drivers without licenses and less experienced drivers – a trend that emphasizes the need for **safety-oriented interventions**.

Though comprehensive, nationwide public transport accident statistics are *not yet regularly disaggregated* in public databases, this general road safety context indicates significant room for improvement in automated safety systems that **reduce human error**, a leading contributor to crashes.

Table 1. Presents key mobility and transport indicators for Tirana

Indicator	Value	Source
Registered vehicles	~340,000	INSTAT / Municipality of Tirana
Cars per 1,000 inhabitants	500–550	INSTAT
Public transport usage	~22%	Euronews Albania
Private car usage	~55%	Euronews Albania
Daily bus passengers	~200,000	Municipality of Tirana
Urban bus routes	23	Municipality of Tirana

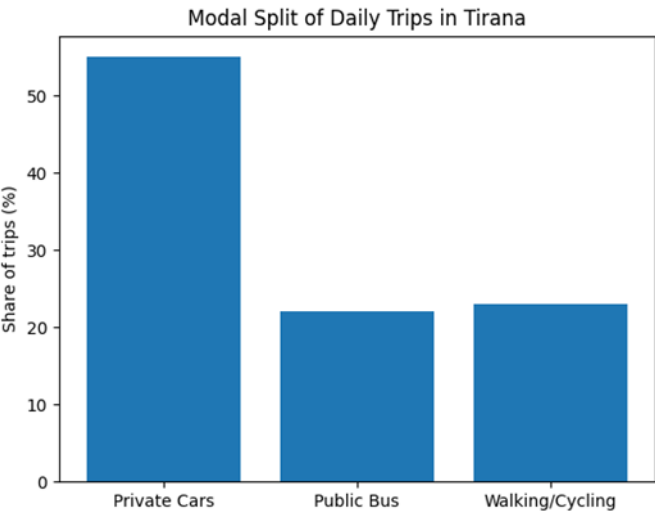


Fig. 1. Illustrates the modal split of daily trips in Tirana

3. ROAD SAFETY STATISTICS

Table 2. Summarizes recent road accident statistics relevant to Tirana.

Year	Total Accidents (Albania)	Trend	Notes
2023	≈1,280	Baseline	High urban concentration
2024	≈1,666	+30%	Tirana highest exposure
2025*	≈413 (Jan–Apr)	-17.4%	Provisional data

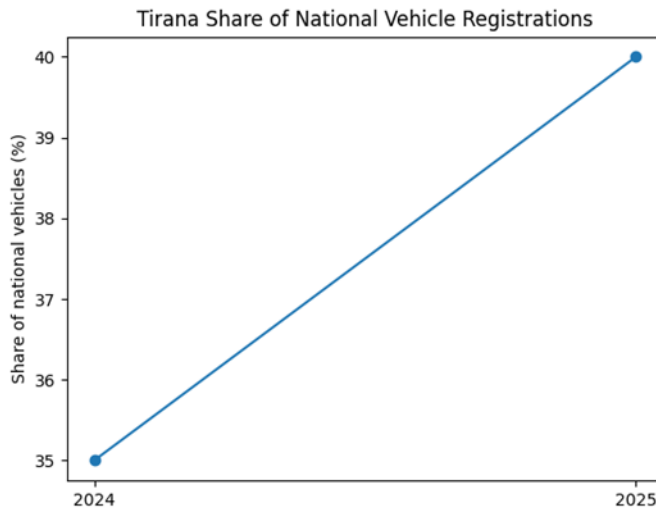


Fig. 2. Shows Tirana’s share of national vehicle registrations

4. ECONOMIC IMPACT AND COST ANALYSIS

International evidence suggests that intelligent transport systems can reduce operational costs by 10–20% and accident-related costs by up to 40%. For Tirana, such improvements could lead to higher ridership, reduced congestion, and long-term economic benefits.

While exact data on annual losses due to congestion and poor transit is limited for Albania, **international evidence highlights the macroeconomic toll** of inefficient transport systems. For example, in Switzerland, transport inefficiencies cost *≈32 billion CHF (~€30 billion) annually*, including accident and environmental costs.

Even scaled down proportionally, such external costs – congestion, lost productivity, health burdens – are *significant for Albania’s urban economies*.

4.1 Investment Needs and Returns

The economics of adopting automation technologies includes:

Upfront Investments

- Hardware (sensors, cameras, communication units).
- Software platforms (AI scheduling, predictive analytics).
- Supporting infrastructure (ITS infrastructure, data networks).

Operational Savings

- Labor savings from optimized routes, scheduling, and automation.
- Fuel and energy savings due to fewer idle trips and optimized movements.
- Reduced maintenance costs due to **predictive diagnostics**.

Global studies estimate these operational savings often **exceed implementation costs over 7–12 years**, with additional safety and environmental dividends.

5. GLOBAL EVIDENCE ON AUTOMATION AND SAFETY TECHNOLOGIES

To contextualize Albania's potential gains, global research highlights measurable benefits of smart transport systems and automation.

5.1 Operational Efficiency

Research shows that **Intelligent Transportation Systems (ITS)** and automation can:

- **Increase vehicle operating speed by ~10 %.**
- **Reduce empty (non-revenue) vehicle mileage by ~15 %.**
- **Decrease passenger waiting times by ~15 %** due to real-time information systems.

These improvements stem from dynamic scheduling, digital fleet management, and real-time passenger information – essential components of smart transit.

5.2 Cost Savings

A U.S. study of automated bus scenarios found:

- Up to **55 % annual cost savings** from adopting fully automated buses compared to conventional diesel fleets, mainly from lower labor and energy costs.

These findings demonstrate the **possible scale of benefits** if Albanian authorities adopt automation technologies incrementally.

5.3 Safety Improvements

Global research on sensor-based vehicle technologies (e.g., automated emergency braking, collision avoidance) suggests:

- Crash reductions of **20–43 % at intersections** via technology enforcement.
- Automated braking systems alone can reduce rear-end collisions by up to **39 %**, translating into significant societal gains in safety.

Although these figures refer broadly to road vehicles, **similar sensor and AI systems for buses and trams reduce human-error-related incidents** and improve real-time responses to threats.

6. POLICY AND IMPLEMENTATION FRAMEWORK FOR ALBANIA

A pragmatic strategy involves:

1. **Pilot ITS solutions** on major bus corridors in Tirana and Durrës.
2. Integrate **real-time tracking and passenger information systems**.
3. Introduce **smart ticketing and dynamic scheduling** with AI support.
4. Pilot **automation features** (e.g., driver assistance and collision avoidance onboard).
5. Scale to partial automation and level-4 autonomy as reliability and skills improve.

6.1 Workforce Transition and Training

Technology adoption must include **training and reskilling programs** for drivers, technicians, and operations personnel to mitigate disruption and maximize acceptance.

6.2 Data, Regulation, and Safety Standards

- Establish a **transport data authority** to standardize and manage ITS data securely.
- Adopt **cybersecurity protocols** for transit networks.
- Enforce data privacy and passenger safety standards consistent with EU best practices.

CONCLUSION AND RECOMMENDATIONS

Automation and safety technologies represent a viable strategy for improving Tirana's public transport. A phased implementation supported by EU funding and strong regulation is recommended. In Albania's context, **modernizing public transport** through automation and safety technologies offers:

- **Tangible service quality improvements** (reduced wait times, real-time info).
- **Economic efficiencies** (lower operating and capital costs over time).
- **Enhanced safety outcomes** (reduced crashes and passenger risk).
- **Environmental benefits** (lower emissions through optimized routing).

Drawing from both **international empirical research** and **local transport statistics**, the benefits outweigh the costs when implemented through phased, data-driven deployment. Continued monitoring and **longitudinal studies** will further refine cost-benefit projections tailored to Albania's specific economic and mobility context.

SPONSORSHIP

The sources of funding (if any) of the scientific study shall be provided.

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