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Participant	Institution
Adeljana SHEHAJ	Drejtoria e Kultures Turizmit ,Arsimit dhe Shendetiti Paresor Sektori i Kultures ,Turizmit dhe Sportit
Ardita HYKAJ	The Mediterranean University of Albania, Albania
Cristina-Mirabela MALAIA	Bucharest University of Economic Studies, Romania
Dorjana FEIMI	University of Vlora, Albania
Fatma YAPICI SAPANKAYA	Dokuz Eylül University, Turkiye
Fioralba VELA	University of Vlora, Albania
Ilira PULAJ	"Ismail Qemali" University,Albania
Klaudja GUGA	University of Vlora, Albania
Llesh LLESHAJ	University of Tirana, Albania
Leonid Nakov	Ss. Cyril and Methodius University in Skopje (UKIM), North Macedonia
Marsida ISMAILI	University "Aleksandër Moisiu", Albania
Maxwell KONGKUAH	Canakkale Onsekiz Mart University, Turkiye
Mustafa KIRCA	Ordu University, Turkiye
Oğuz TÜMTÜRK	Ordu University, Turkiye
Şerife AKINCI TOK	Zonguldak Bülent Ecevit University, Turkiye
Valbona SAKOLLARI	University "Aleksandër Moisiu", Albania
Vlad DIACONESCU	Bucharest University of Economic Studies, Romania

KEYNOTE SESSION

Optimal Management of Future Sustainability Challenges in Transitional Economies: The Case of North Macedonia

Leonid Nakov[1]

Abstract

Contemporary tendencies for creating a vivid and transparent model of sustainability, especially within the framework of attempting to preserve and further advance of various industry sectors towards their competitive advantage on a national, regional and international level, is, to a great extent, linked to creating an integrated national system of planning, implementing and evaluating of UN SDG's in all transitional economies, like it is the case of North Macedonia. The constant strives for establishing an optimal management model is placed at harmonizing the ESG importance and practice, on one side, with the degree of achieving indicators of the SDG's pillars for Macedonian business sectors that have a potential for sustaining at least a domestic competitiveness, on the other side.

Thorough illustration of SDG overall index score and index rank of North Macedonia, accompanied by latest (2024) key sustainability indicators, like human capital index, labor productivity index, corruption perception index, income inequality (Gini coefficient) etc. illustrate that North Macedonia is characterized by moderate levels of human development and labor productivity, low innovation capacity, limited contribution to high-tech exports, and high levels of urban air pollution. Therefore, within the ICT sector, as one of the fast-growing sectors in terms of income distribution, new employment rate, average salary etc., particular emphasis should be placed at advancements of Artificial Intelligence (AI) subsegment, analyzed through their distinct technological, social & economics factors, as well as human capital indicators within Macedonian ICT national sector.

Future potential for sustainable development of Artificial Intelligence (AI) in North Macedonia in the paper analyzes is determined by the viewpoint of environmental sustainability, social well-being, economic growth & competitiveness, and, improved public services. National developmental recommendations regarding SDG goals development in my country, North Macedonia, are created by applying the concept of progressive business model and dynamic employee capabilities, which systematically increase the absorptive potential of the entire economy for organizational changes and development, in all competitive economic sectors.

Finally, each national action plan for optimal management sustainability pathway of North Macedonia is expected to follow the national developmental strategy directives, which reflect a period of 20 years, lasting from 2024 till 2044, in which new SDG's after actual ones that last up to 2030 would be adopted on an international level.

Keywords

Optimal management model, sustainability indicators of North Macedonia, SDG's, artificial intelligence

JEL Classification: M15, Q01, O12

[1] Prof., Ss. Cyril and Methodius University in Skopje (UKIM), Faculty of Economics, Skopje, North Macedonia, lnakov@eccf.ukim.edu.mk

ABSTRACTS

From Service to Significance: Building a Value-Responsive Quality Culture in Romanian Chain Hotels

Cristina-Mirabela MALAIA[2] Vlad DIACONESCU (Corresponding author)[3]

Abstract

The hospitality industry has undergone significant transformation due to technological advancements, societal shifts, and the lasting effects of the COVID-19 pandemic. These changes have reshaped consumer expectations, emphasizing ethical practices, personalization, and emotional resonance over traditional service metrics. This study explores how chain hotels in Romania adapt to these evolving demands to foster a value-responsive quality culture (VRQC). Using a qualitative approach with semi-structured interviews and content analysis, we identify three key trends: (1) demand for ethical, sustainable, and inclusive practices; (2) heightened expectations for personalization and digital integration; and (3) a focus on authenticity and emotional connection in guest experiences. The proposed VRQC framework integrates these trends into a strategic model for enhancing service quality, offering practical implications for hospitality managers and contributing to the academic discourse on quality culture in dynamic contexts.

Keywords: Hospitality Management, quality culture, consumer expectations, sustainability, personalization, authenticity

JEL Classification: L83, M31, Q56, O33

[2] Ph.D. Student, Bucharest University of Economic Studies, Doctoral School of Business Administration I, Bucharest-Romania, malaiacristina10@stud.ase.ro
[3] Ph.D. Student, Bucharest University of Economic Studies, Doctoral School of Business Administration I, Bucharest-Romania, diaconescuvlad17@stud.ase.ro

Climate Physical Risk in MENA: Patterns, Persistence, and Policy Implications for Sustainable Development

Maxwell KONGKUAH [4]

Abstract
This study offers the first systematic analysis of convergence and divergence in climate physical risk across the Middle East and North Africa (MENA) region, utilizing the innovative Climate Physical Risk Index (CPRI) and state-of-the-art panel stationarity methods. Analyzing CPRI data for 17 MENA countries from 1993 to 2023, we apply four stationarity tests including the novel Fourier KPSS with structural breaks (FKPSS-SB) model to capture both smooth and abrupt changes in climate risk trajectories. Our results reveal persistent heterogeneity, with only Morocco and Oman exhibiting convergence under the most flexible model specification, while the remainder of the region remains divergent. By linking identified break dates to regional climate events and policy shifts, we provide new empirical insights into the drivers of climate risk and resilience in MENA. The findings highlight an urgent need for regionally coordinated adaptation strategies to achieve sustainable development amidst escalating climate vulnerabilities.

Keywords
Climate Physical Risk Index (CPRI), Convergence Analysis, Fourier KPSS with Structural Breaks, MENA Region, Climate Resilience

[4] Maxwell KONGKUAH
Department of Economics, Faculty of Political Sciences, Canakkale Onsekiz Mart University, Turkey,
ORCID: https://orcid.org/0000-0003-3486-693X
Email: maxwell.kongkuah@comu.edu.tr

Fiscal Policy as a Catalyst for Sustainable, Digital, and Inclusive Growth: Pathways for the Western Balkans

Ardita Hykaj[5]

Abstract

The Western Balkans are confronted with a multifaceted policy challenge, requiring a simultaneous transition towards sustainable, low-carbon economic models and the adoption of digital transformation pathways that maximize opportunities while mitigating associated risks. As a central instrument of financial governance, fiscal policy possesses the capacity to act as a unifying framework for these parallel transitions, enabling the pursuit of environmental sustainability alongside the advancement of social equity. This study examines the impact of targeted fiscal interventions—such as green budgeting practices, carbon taxation mechanisms, and environmentally conditioned subsidies—on accelerating the region's convergence with the objectives of the European Green Deal. In parallel, the research examines the potential of tax system reforms, digital services levies, and fiscal incentives for broadband and digital infrastructure to facilitate digital adaptation, narrow the digital divide, and strengthen regional competitiveness. The analysis is grounded in a comparative policy framework, drawing upon macroeconomic data for the Western Balkans and a selection of illustrative case studies from within the region. Particular attention is devoted to the distributive dimension of fiscal policy, with an emphasis on progressive taxation and well-targeted social transfers as mechanisms to ensure that the socio-economic benefits of green and digital transitions are equitably distributed, especially among vulnerable and rural communities. By identifying best practices and revealing policy gaps, the study develops a set of integrated fiscal strategies that reflect the structural and institutional specificities of the Western Balkans. The findings aim to enrich the broader policy discourse by demonstrating how fiscal policy can operate as a strategic nexus between environmental imperatives, technological innovation, and inclusive development. In doing so, the paper contributes to the formulation of coherent, future-oriented policy frameworks capable of fostering resilient, sustainable, and equitable growth in the Western Balkan region.

Keywords: Fiscal policy, green budgeting, digital economy, inclusive growth, Western Balkans.

JEL Classification: E62, Q58, O33, R11, P25

[5] PhD(c). Ardita Hykaj, The Mediterranean University of Albania, Faculty of Economic Sciences, Department of Finance, Banking and Accounting, Tirana-Albania, arditahyka@umsh.edu.al

The Role of U-I in Strengthening External Competitiveness and Trade Capacity in Emerging Economies

Ilira Pulaj [6]

Abstract

Networking and rapid internationalization present, in addition to great opportunities, numerous challenges for economies, especially developing ones. In these conditions, they should aim at the efficient use of capacities and resources to ensure integration into the global value chain and international trade. Also, innovation, knowledge and the exchange of new ideas are important pillars for strengthening the competitive position in such a competitive and challenging environment. The aim of this study is to explore the impact of U-I in terms of the international economy, the adaptive capacity of the internal system in the competitive environment and their integration into the structure of international trade. The study is based on a combined methodology by adapting the literature review and the exploration of statistical data. The study shows that internal collaborations, such as the one between university and industry, help the internal system to adapt flexibly and be in cohesion with external dynamics. By promoting joint research, technology transfer and workforce development, U-I partnerships stimulate different economic structures to become more prominent through innovative capacities. They also help firms in their absorptive capacities to be more coherent with international market demands and external situations. On the other hand, they help firms in identifying competitive opportunities and positioning their products in international trade and exports.

Keywords: International trade, competition, U-I cooperation, capacities.

JEL Classification: F14, O31, O32, I23, L24

[6]Dr.Ilira Pulaj, "Ismail Qemali" University, Faculty of Economics, Vlore, Albania, ilira.pulaj@univlora.edu.al

Ekonomik Akıntılarda Gezinmek: Deniz Navlun Oranlarının ABD Sanayi Üretimi Ve Enflasyonu Üzerindeki Etkisi

Şerife AKINCI TOK[7]

Özet

Bu çalışma, deniz taşımacılığı sektörünün önemli göstergeleri arasında yer alan Baltık Kirli ve Temiz Tanker Endeksleri ile Amerika Birleşik Devletleri'nin ekonomik performansı arasında var olan çok yönlü ve dinamik ilişkiyi incelemektedir. Özellikle sanayi üretimi ve enflasyon gibi temel makroekonomik göstergelere odaklanarak, navlun oranlarının ekonomi üzerindeki doğrudan ve dolaylı etkileri değerlendirilmektedir. Analiz kapsamında Dalgacık Tutarlılık yöntemi kullanılarak, söz konusu değişkenler arasındaki senkronizasyon yapısı farklı zaman ölçeklerinde ayrıntılı biçimde incelenmiştir. Bu yöntem sayesinde, kısa vadeli dalgalanmalardan uzun vadeli eğilimlere kadar uzanan kapsamlı bir senkronizasyon haritası elde edilmiştir. Elde edilen bulgular, navlun maliyetlerinin sadece taşımacılık sektörüyle sınırlı kalmayıp, enflasyonist baskılar ve üretim hacimleri üzerinde de anlamlı etkiler yarattığını ortaya koymaktadır. Özellikle faiz-enflasyon ilişkisi bağlamında değerlendirildiğinde, deniz taşımacılığına ilişkin maliyet verilerinin ekonomik tahmin modellerinde yer almasının politika yapıcılar açısından hayati bir gereklilik olduğu vurgulanmaktadır. Çalışma, navlun oranlarının para politikası, fiyat istikrarı ve arz-talep dengesine ilişkin analizlerde dikkate alınmasının, ekonomik istikrarı artırmaya yönelik daha isabetli kararların alınmasına katkı sağlayabileceğini göstermektedir. Ayrıca, küresel enerji piyasalarıyla doğrudan bağlantılı olan tanker taşımacılığı endeksleri, sadece ulusal düzeyde değil, aynı zamanda küresel ekonomik hareketlilik açısından da stratejik bir gösterge niteliğindedir. Bu bağlamda çalışma, navlun oranlarının düzenli takibi ve analizinin, rafine enflasyon kontrol önlemleri, enerji güvenliği ve ulaşım politikalarının entegrasyonu gibi alanlarda uygulanabilir politika önerileri geliştirilmesine olanak tanıdığını göstermektedir. Bu araştırma, deniz taşımacılığı maliyetlerinin makroekonomik göstergeler üzerindeki etkilerini farklı zaman ölçeklerinde sistematik biçimde ortaya koyarken, aynı zamanda politika yapıcılar için ekonomik dayanıklılığı artıracak stratejik yönlendirmeler sunmaktadır. Küresel ekonomik sistemin artan karşılıklı bağımlılıkları göz önünde bulundurulduğunda, bu tür kapsamlı analizlerin önemi daha da artmaktadır. Çalışma, yalnızca mevcut ekonomik koşulları anlamaya yardımcı olmakla kalmamakta, aynı zamanda gelecekteki araştırmalar için de küresel eğilimlerin bu hassas ilişkiler üzerindeki potansiyel etkilerine ışık tutacak bir çerçeve sunmaktadır.

Anahtar Kelimeler: Dalgacık Tutarlılığı, Denizcilik Navlun Oranları, Amerika Birleşik Devletleri, Ekonomi Politikası
JEL Sınıflandırması: C32, Q43, L91

[7] Dr. Öğr. Üyesi, Zonguldak Bülent Ecevit Üniversitesi, İktisadi ve İdari Bilimler Fakültesi, Maliye Bölümü, Zonguldak-Türkiye, s.akinci@beun@edu.tr

Petrol Fiyat Belirsizliği ile Reel Efektif Döviz Kuru Arasındaki Asimetrik Zamanla Değişen Nedensellik İlişkileri: Türkiye Örneği

Oğuz TÜMTÜRK[8] Mustafa KIRCA (Corresponding author)[9]

Özet

Bu çalışmada, petrol fiyatları belirsizliğinden Türkiye'nin reel efektif döviz kuruna doğru olan asimetrik nedensellik ilişkilerinin, 1994:M01-2024:M07 dönemi verileri kullanılarak analiz edilmesi amaçlanmaktadır. Çalışmada ilk olarak değişkenlerin pozitif ve negatif kümülatif şokları elde edilecektir. Elde edilen şoklar arasında incelenen dönemin bütünü yerine, alt dönemlerde de nedensellik ilişkileri olabileceği düşüncesiyle Shi, Phillips ve Hurn (2018,2020) tarafından geliştirilen zamanla değişen nedensellik testi kullanılacak ve alt dönemlerdeki asimetrik nedensellik ilişkileri sınanacaktır. Yapılan analizler sonucunda belirtilen şoklar arasındaki ilişkilerin istikrarlı olmadığı, zamanla değişen nedensellik ilişkilerinin olduğu tespit edilmiştir. %1 anlamlılık seviyesinde, petrol fiyat belirsizliğinin pozitif şokundan reel efektif döviz kurunun negatif şokuna doğru nedensellik dönemlerinin oldukça yoğun olduğu saptanmıştır. Petrol fiyat belirsizliğinin negatif şokundan reel efektif döviz kurunun pozitif şokuna doğru nedensellik dönemleri ise oldukça azdır. Bu asimetrik bulgulara göre, petrol fiyat belirsizliğinde meydana gelen artışlar, TL'deki değer kayıplarını açıklamada çok daha fazla etkili iken, petrol fiyat belirsizliğinde meydana gelen azalışlar TL'deki değer artışlarını açıklamada daha az etkilidir.

Anahtar Kelimeler: Petrol Fiyat Belirsizliği, Reel Efektif Döviz Kuru, Zamanla Değişen Nedensellik

JEL Sınıflandırması: C22, F31, Q40

[8] Doç. Dr., Ordu Üniversitesi, Ünye İktisadi ve İdari Bilimler Fakültesi, İktisat Bölümü, Ordu-Türkiye, oguz.tumturk@gmail.com
[9] Doç. Dr., Ordu Üniversitesi, Ünye İktisadi ve İdari Bilimler Fakültesi, İktisat Bölümü, Ordu-Türkiye, mustafakirca52@gmail.com

Social State and the Transformation Social Welfare

Adeljana Shehaj [10]

Abstract

The welfare state is one of the greatest achievements of humanity, which has been made possible through the combination of rapid economic development and redistributive policies that treat the poorest and marginalized groups with priority. The importance of the welfare state goes beyond the fight against poverty and supporting people in need. Ensuring social rights is a prerequisite for the equal enjoyment of civil and political rights of citizens and, consequently, one of the most important pillars of democracy. The models of the welfare state are diverse, starting from that of the countries of northern Europe. In them, the welfare state extends to its largest dimensions, including health, education, housing policies, etc., and on the other hand, the beneficiaries of this model are the vast majority of society, including the middle class. The model of the Central and Western European countries relies more on social security contributions and social welfare policies reflect the strength of the organized layers of the workforce. Meanwhile, the model of the Anglo-Saxon countries is more limited in supporting the marginalized layers and prioritizes the rapid integration of the marginalized into the labor market. In fact, the countries with the greatest problems of economic and social development suffer from the implementation of distorted models of the welfare state, which combine the very low level of social support with the clientelistic logic of the distribution of this support. The governing program of the TOGETHER Movement aims to organically integrate the most progressive aspects of the three aforementioned models of the welfare state.

Keywords: Social state, Social welfare, Social transformation, Social policies, Social security system

[10] Drejtoria e Kultures Turizmit, Arsimit dhe Shendetiti Paresor Sektori i Kultures, Turizmit dhe Sportit, Adeljanashehaj@gmail.com

FULL PAPERS

Climate Prediction and Industrial Symbiosis for Circular and Sustainable Economies

Llesh Lleshaj (Corresponding Author)[11]

Abstract
This study integrates two critical aspect in economy and environment: climate services and industrial symbiosis within the broader scope of sustainable development in the Mediterranean and beyond. Climate variability in the Mediterranean poses increasing risks across multiple sectors including agriculture, water resources, energy, and finance. Seasonal-to-decadal climate forecasts are recognized as valuable tools to inform adaptive public policies, climate-smart budgeting, investment planning, and the development of risk-informed financial instruments and insurance. The research explores the potential of climate services to guide behavioral change, enhance societal preparedness, and bridge the gap between scientific outputs and end-user needs. Also, the study investigates industrial symbiosis as a strategic pathway for implementing circular economy principles. Based on expert interviews across different countries, it identifies significant barriers to adoption, including limited stakeholder awareness, outdated infrastructure, high technology costs, and restrictive regulatory environments. The study employs both qualitative and quantitative analyses, including factorial and correlative statistical models, to understand the challenges and opportunities in promoting industrial symbiosis. Climate predictions guide adaptive resource planning, while industrial symbiosis reduces emissions and waste. Together, they foster resilience and sustainability, enabling circular economy strategies aligned with climate change mitigation and adaptation. Recommendations emphasize the need for supportive policies, financial incentives, improved stakeholder collaboration, and innovation-driven educational programs to facilitate sustainable industrial ecosystems. This holistic approach aims to maximize socio-economic and environmental benefits across regions facing complex sustainability challenges.

Keywords: Climate Services, Climate Adaptation, Industrial Symbiosis barriers, Circular Economy.

JEL Classification: Q54, O13, L52

1. Introduction

Climate change stands as one of the most pressing global challenges of our time, driven primarily by greenhouse gas emissions, deforestation, and unsustainable use of natural resources. The industrial sector is a major contributor to greenhouse gas emissions, and therefore, it plays a critical role in both causing and solving the climate crisis. One of the most promising strategies to address industrial emissions while fostering sustainable development is industrial symbiosis a concept that promotes collaboration among industries to use each other's by-products, energy, water, and materials in a closed-loop system. Industrial symbiosis not only enhances resource efficiency and economic performance but also directly contributes to the reduction of greenhouse gas emissions and supports broader climate change mitigation and adaptation efforts. This study explores how industrial symbiosis is intricately connected with climate change, detailing several key areas where this relationship becomes evident, such as below dimensions:

Reducing greenhouse gas emissions: One of the most significant links between industrial symbiosis and climate change is its potential to reduce greenhouse gas emissions. Traditionally, industrial processes have relied on pure materials and fossil fuels, which lead to high levels of carbon dioxide (CO_2) and other greenhouse gases. In contrast, industrial symbiosis enables one company's waste or excess energy to be utilized as an input by another company. This reuse eliminates the need for separate energy production or raw material extraction, typically carbon-intensive. For instance, when the waste heat generated by one factory is used to power another facility or district heating network, it reduces the need for fossil-fueled heating systems. Similarly,

[11] Associate Profesor, University of Tirana, Faculty of Economy, Department of Finance, Tirana, Albania, lleshlleshaj@feut.edu.al

the overall environmental footprint decreases if one industry's CO_2 emissions are captured and utilized by another (e.g., in greenhouses or algae production). These practices contribute to measurable reductions in industrial emissions and help meet local, national, and global climate targets.

Resource and energy efficiency: Climate change mitigation efforts call for minimizing the consumption of non-renewable resources and improving energy efficiency. Industrial symbiosis directly addresses this by optimizing how energy, water, and materials flow within and between industries. It turns linear resource use into a circular system, where outputs are continuously reused, repurposed, or recycled. For example, they can be captured and used in other industrial processes instead of discharging warm water or gases as waste. Likewise, excess raw materials or by-products can be redirected to nearby industries instead of disposed of in landfills. These efficiencies cut down on environmental impact and significantly reduce the demand for energy production, especially from carbon-heavy sources, thereby lowering overall emissions.

Supporting the decarbonization of industry: Decarbonizing industry is central to achieving global climate goals, particularly those outlined in the Paris Agreement. Traditional industrial systems are hard to decarbonize due to their dependence on fossil fuels, high-temperature processes, and long infrastructure lifecycles. However, industrial symbiosis offers practical pathways for decarbonization. Companies can reduce their carbon intensity by substituting high-carbon raw materials with low-carbon alternatives sourced from industrial by-products. For example, using fly ash from coal power plants in cement production reduces the demand for energy-intensive clinker. Moreover, energy sharing through combined heat and power systems allows industries to rely less on individual, fossil-fuel-based energy production. As industries integrate more into symbiotic networks, their operations become more compatible with low-carbon development strategies.

Advancing the circular economy: The circular economy and climate action are deeply interconnected, and industrial symbiosis is a key pillar of the circular economy. By minimizing waste and extending the lifecycle of materials, industrial symbiosis ensures that fewer resources are extracted, processed, and transported, all of which are carbon-intensive activities. In a symbiotic network, waste becomes a resource, conserves natural ecosystems and avoids emissions associated with waste treatment and landfill operations. Additionally, circular systems encourage modular and regenerative design in manufacturing, which leads to more sustainable products and services. Industrial symbiosis is foundational in achieving circularity and reducing emissions tied to material production and disposal.

Fostering technological innovation and industrial collaboration: Transitioning to a low-carbon economy requires the rapid development and deployment of clean technologies and innovation ecosystems. Industrial symbiosis inherently fosters this innovation by promoting collaborative networks among diverse industries. These collaborations encourage exploring and adopting new technologies that might otherwise be economically unfeasible or difficult to scale individually. Such innovation can lead to breakthroughs in carbon capture, renewable energy integration, and process optimization. Moreover, the trust and shared goals established in industrial symbiosis networks make investing in joint infrastructure, sharing risk, and pooling resources easier, accelerating the deployment of climate-friendly technologies across sectors.

Climate change adaptation and system resilience: While industrial symbiosis is a powerful tool for mitigation, it also contributes to climate adaptation. As climate change causes resource scarcity (especially in water and energy), industries must become more resilient. Industrial symbiosis enhances this resilience by creating diversified supply chains, shared utilities, and mutual support systems. For instance, in regions prone to drought, recycling industrial water through

symbiotic exchanges can reduce pressure on freshwater sources. Similarly, utilizing waste heat for community heating can protect vulnerable populations from energy poverty. These adaptive measures help communities and industries better withstand the shocks of climate-related events, such as heatwaves, floods, or supply disruptions.

Alignment with climate policies and sustainability goals: Governments and international organisations increasingly recognise the importance of industrial symbiosis in achieving climate objectives. Climate policies and sustainability frameworks such as: European Union's Green Deal, the Circular Economy Action Plan, and the UN Sustainable Development Goals, explicitly encourage industrial symbiosis as part of broader strategies to reach carbon neutrality. National governments are incorporating industrial symbiosis into their climate action plans, offering incentives for cleaner production, waste valorization, and regional resource hubs. Industrial symbiosis also aligns with carbon pricing mechanisms and environmental regulations, offering industries cost-effective ways to comply while improving competitiveness. This policy alignment reinforces the role of industrial symbiosis as an effective and scalable climate solution.

This study examines integrating climate services and industrial symbiosis as complementary strategies for sustainable development in the Mediterranean and beyond. It focuses on how climate variability affects key sectors such as agriculture, water, energy, and finance. It highlights the value of seasonal-to-decadal climate forecasts in guiding adaptive policymaking and climate-resilient investments. Simultaneously, the study investigates industrial symbiosis as a practical application of circular economy principles to reduce emissions and resource waste. The research identifies significant barriers to industrial symbiosis through expert interviews and statistical analysis, including low awareness, outdated infrastructure, high costs, and restrictive regulations. The study reveals that climate predictions support adaptive resource planning, while industrial symbiosis enables climate change mitigation by lowering environmental impact. Their combined application promotes greater resilience and sustainability. The paper concludes with recommendations for policy support, financial incentives, cross-sector collaboration, and education to drive systemic change in industrial ecosystems facing climate-related challenges.

2. Literature Review

Climate change, driven by unsustainable resource extraction, waste generation, and greenhouse gas (GHG) emissions from the linear "extract–produce–dispose" model, necessitates systemic change. Industrial symbiosis offers a practical, cross-sectoral approach to reducing environmental pressures by converting waste and by-products from one industry into inputs for another, thus minimizing resource consumption and emissions. Case studies such as the Kalundborg symbiosis in Denmark and regional initiatives in Sweden demonstrate significant reductions in CO_2 emissions (up to 275,000 tonnes/year), water savings, and raw material conservation. IS facilitates decarbonization by enabling renewable energy integration (e.g., biogas use) and reducing fossil fuel dependence, directly contributing to climate targets (Castellet-Viciano et al., 2022). Barriers to adoption such as lack of awareness, technological constraints, and policy fragmentation must be addressed through regulatory support, digitalization, and coordinated value-chain collaboration. By fostering resource efficiency, reducing landfill waste, and cutting GHG emissions, industrial symbiosis aligns industrial practices with climate change mitigation goals, making it a critical pathway to achieving EU Green Deal objectives and national climate strategies.

2.1 Climate service: Seasonal-to-decadal climate predictions and socio-economic decision-making

Many studies underscore the value of embedding climate predictions within socio-economic planning frameworks to support sustainable development goals.

Seasonal-to-decadal climate predictions represent a critical tool for proactive socio-economic decision-making, particularly in agriculture and food security. These predictions, spanning months to ten years ahead, integrate climate modeling with sector-specific tools, enabling stakeholders to anticipate and mitigate climate risks. A key characteristic of climate predictions is its dual temporal scope: seasonal forecasts provide short-term outlooks critical for planting and harvesting strategies, while decadal forecasts support long-term adaptation and resilience planning. Importantly, these forecasts often utilize specialized indices such as the Standardized Precipitation Evapotranspiration Index over six months (SPEI6) and the Heat and Moisture Deficit Index over three months (HMDI3) to assess drought and heat stress risks in agricultural regions (Smith et al., 2024; Gomez et al., 2024). In the wheat sector, decadal forecasts have demonstrated actionable value. For example, forecasts initialized in late 2014 successfully predicted heightened drought risks during 2015–2019 across key wheat-producing regions. This enabled improved crop planning and resource management, supporting both yield stability and food security. Such long-lead insights help national and regional agricultural agencies anticipate production shocks and design adaptive policies. Seasonal forecasts have also been integrated into maize production strategies in East Africa. By combining climate forecasts with biophysical crop models like WOFOST, stakeholders can generate yield predictions months ahead. This approach directly informs farmer-level decisions, such as seed variety selection and irrigation management, reducing vulnerability to seasonal rainfall variability and drought episodes (NOAA, 2024). Beyond terrestrial agriculture, climate prediction has practical applications in small-scale fisheries, particularly in Pacific coastal communities. Forecasts extending up to ten years support long-term decision-making regarding fishing licenses, provisioning strategies, and disaster resilience planning. This is vital for safeguarding livelihoods that are sensitive to ocean temperature fluctuations and ecosystem shifts linked to climate variability.

Seasonal-to-decadal climate predictions are becoming essential within the energy sector, where climate variability increasingly disrupts supply and demand systems. These forecasts, spanning months to ten years, combine climate modeling with sector-specific tools, enabling energy stakeholders to anticipate resource fluctuations, infrastructure strain, and economic risks (IEA, 2024). As the global energy mix shifts toward renewables, understanding and adapting to climate-driven variability through climate prediction becomes critical for energy security and socio-economic stability (World Bank, 2024). The energy sector's dual focus operational efficiency and long-term investment planning makes it particularly responsive to climate predictions (UNFCCC, 2024). Seasonal forecasts (months ahead) assist in managing grid loads, fuel supply, and peak demand, while decadal forecasts inform infrastructure investments and national energy strategies. Climate-sensitive energy sources such as hydropower, wind, and solar are directly influenced by temperature, precipitation, and ocean-atmosphere oscillations, necessitating accurate long-lead forecasts to minimize disruptions (IRENA, 2024). By enabling proactive responses to potential resource shortages or demand surges, climate prediction enhances the resilience of energy systems, reduces operational costs, and protects national economies reliant on stable energy supplies.

Water resource management and hydropower generation are inherently climate-sensitive. Fluctuations in precipitation, snowmelt, streamflow, and evaporation directly influence water availability and electricity production. In this context, seasonal-to-decadal climate predictions provide valuable probabilistic insights on future climate conditions over months to years, helping water and hydropower sectors anticipate changes, manage risks, and optimize operations. Through targeted climate services, these predictions can be transformed into action guidance, supporting

strategic planning, infrastructure investment, and operational decision-making. The importance for water and hydropower sector is: Resource security and operational planning: Hydropower and water utilities depend on seasonal–decadal variations in rainfall, snowmelt, and reservoir inflows. Climate predictions covering months to a decade bridge tactical operational and strategic investment horizon. Risk mitigation for floods and droughts: Forecasts provide early warning for extreme events, aiding proactive release or retention decisions to reduce damages and maintain supply (Towler et al., 2025), etc.

Climate predictions are increasingly viewed as strategic tools within climate governance, offering essential intermediate forecasting between short-term weather projections and long-term climate scenarios. Policymakers in Europe and globally recognize their potential to inform forward-looking public policies across sectors such as disaster risk reduction, climate adaptation, infrastructure development, agriculture, and energy management (Soares and Dessai, 2014). Unlike short-term forecasts, climate predictions help governments anticipate climatic trends over months to decades, enabling proactive investment in resilient infrastructure and policy responses that address climate variability (European Commission, 2024). Within the European Union (EU), climate services are structurally embedded in key policy initiatives, notably the EU Adaptation Strategy and the European Green Deal. These frameworks promote systematic integration of climate data into official planning, ensuring that both national and local governments incorporate climate forecasts into their development, adaptation, and investment strategies (European Environment Agency, 2024). This institutionalization reflects the growing importance attributed to climate services as essential governance instruments for sustainable development and climate resilience. The governance of climate services within the EU operates through a multi-level model. Centralized data production is managed by organizations such as the Copernicus Climate Change Service (C3S) and the European Centre for Medium-Range Weather Forecasts (ECMWF), which generate authoritative climate predictions used by national and sectoral agencies (European Commission, 2017). National meteorological institutions and specialized agencies, in turn, adapt and apply these forecasts for localized policy implementation. This centralized forecasting combined with distributed application forms the operational backbone of Europe's climate services governance model.

The operationalization of climate services is further supported by strategic funding and regulatory policy instruments. Financial frameworks such as the Copernicus Multiannual Financial Framework, Horizon Europe, and Mission Adaptation provide structural funding for research, service development, and public sector integration of climate services (European Commission, 2024). Legal mandates, including national adaptation strategies and climate-related disclosure regulations, serve to institutionalize the use of S2D forecasts in national planning and financial reporting (European Environment Agency, 2024).

Despite these advances, several challenges impede broader policy adoption. Regional skill variability and forecast uncertainty limit climate change predictions' reliability in certain areas, reducing their uptake in risk-averse policy environments. Moreover, raw climate data often lack policy-relevant formatting, leading to usability gaps for decision-makers. Fragmentation of responsibilities across EU, national, and local levels complicates coordination, while resource disparities among regions exacerbate data access inequalities (European Commission, 2024).

2.2 Industrial symbiosis: Efficient KPI-dimensions

Industrial Symbiosis (IS) is the association between industrial facilities or companies in which the waste or by-products of one become raw materials for another (Chertow, 2000). IS can be described as a collaboration between several different, often geographically proximate entities, i.e., companies

and factories closely co-located in clusters or industrial parks exchanging resources (e.g., materials, energy, water and by-products) that can be used as substitutes for products or raw materials, which would otherwise be imported from elsewhere or treated as waste (Clift and Druckman, 2015). Industrial Symbiosis is an integral part of the concept of the Circular Economy of the last decades. Firstly, we must understand the importance of Circular Economy and then of IS (as a more advanced and specific step). Based on the Circular Economy, products are designed for disassembly and reuse, shifting from end-of-life to restoration. Four sources of value creation are highlighted: minimizing material usage, maximizing consecutive cycles and time in each cycle, diversifying reuse across the value chain, and maintaining uncontaminated material streams.

These principles drive material productivity and offer long-term advantages over traditional linear business models (Lamba et al., 2024). Ellen MacArthur Foundation (2019) outlines three fundamental principles for a Circular Economy: (1) Design out waste and pollution (The first principle underscores the importance of considering environmental impacts during the design phase to reduce the use of pure raw materials and minimize waste generation), (2) Use and reuse products and materials (The second principle focuses on prolonging the life cycle of products and materials through strategies such as reuse, repair, and remanufacturing), and (3) Regenerate natural systems (The third principle emphasizes not only avoiding environmental harm but also actively improving the environment by returning valuable nutrients to ecosystems (Sihvonen and Ritola, 2015)). Circularity plays a crucial role in transforming industries towards climate-neutrality and long-term competitiveness. It can lead to significant material savings across value chains, create additional value, and open up economic opportunities. This includes exploring options to promote circular practices within industrial processes, fostering IS through a reporting and certification system, supporting the sustainable bio-based sector, leveraging digital technologies for resource tracking, and encouraging the adoption of green technologies (Streimikiene et al., 2023).

European Environment Agency (2019) shows that over the past 50 years, there has been an unprecedented increase in global material demand, leading to doubled goods production, tripled material extraction, and quadrupled economic development measured by Gross Domestic Product (GDP). This growth has contributed significantly to biodiversity loss, water stress, and climate change drivers. Global material use is projected to nearly double by 2060, accompanied by a substantial increase in greenhouse gas emissions.

The Circular Economy aims to mitigate these trends by recycling materials, reusing products, and extending their lifespans, yielding both economic and environmental benefits. Achieving a Circular Economy requires systemic changes across the value chain, including product design, technology, business models, consumer behaviour, education, etc. The EU launched its Circular Economy package in 2015 to address sustainability challenges and establish concrete measures spanning consumption, production, waste management, and secondary raw material markets (Nainggolan et al., 2019). The Circular Economy is integrated better with climate policies if countries can take some crucial steps, including coordinating between countries, using models to identify impactful actions, integrating Circular Economy policies into climate mitigation reporting, evaluating the need for additional legislative proposals, monitoring policy progress, and continuously refining and developing integration strategies (EEA, 2024). Based on this overview of the Circular Economy in the EU, Industrial Symbiosis (IS) is a very promising part of it with great development potential. There are some potential industries that could engage in IS (EEA, 2019): agriculture and food processing; chemical and pharmaceutical; construction and demolition; energy production; metal manufacturing and recycling; paper and textile, etc. IS offers numerous benefits for businesses, enhancing their operational efficiency and sustainability (Cardoni et al., 2020). Some key benefits are:

- Cost savings: Reducing costs for raw materials by utilizing by-products from other industries, and lower waste disposal expenses through waste exchange and reuse.
- Revenue generation: Potential new revenue streams from selling by-products to other businesses, and development of new products from waste materials.
- Resource efficiency: Optimizing use of resources, leading to less waste and higher productivity, and improving supply chain efficiency by sourcing materials locally.
- Environmental impact: Reducing carbon footprint and environmental impact through waste reduction, as well as enhancing corporate sustainability and compliance with environmental regulations.
- Innovation and competitiveness: Fostering innovation through collaborative problem-solving and new business models and promoting competitiveness by adopting sustainable practices and technologies.
- Risk management: Diversifying supply chains and reduced dependency on single sources of raw materials and increasing resilience to market fluctuations and resource shortages.
- Corporate image and branding: Improving public perception and brand value by demonstrating commitment to sustainability, and environmental conscious customers and investors.

IS offers a range of benefits that extend beyond individual businesses to positively impact the entire economy (Zhang et al., 2015). Some of these economic benefits of IS are:

- Economic growth: Stimulating economic activity through new business opportunities and markets and increasing productivity and competitiveness of industries.
- Job creation: Generating employment through the development of new industries and services, and supporting jobs in recycling, resource recovery, and sustainable technologies.
- Resource efficiency: Enhancing the efficient use of resources, reducing dependency on imports. Moreover, lowers overall consumption of raw materials, decreasing costs for industries.
- Waste reduction: Minimizing waste generation, reducing the economic burden of waste management, and promoting recycling and reuse, turning waste into valuable resources.
- Innovation and technology development: Encouraging innovation through collaborative research and development and supporting the growth of green technologies and sustainable business practices.
- Environmental protection: Reducing environmental degradation and associated economic costs, and fostering the compliance with environmental regulations, avoiding penalties and fines.
- Energy savings: Lowering energy consumption through more efficient industrial processes, and using renewable energy sources, reducing energy costs.
- Regional development: Stimulating the regional economic development by creating industrial clusters, and economic resilience of regions through diversified industrial bases.
- Public-private partnerships: Fostering collaboration between public and private sectors, enhancing economic development initiatives by public investment in infrastructure to support IS projects.

To identify areas for improvement, demonstrate economic and environmental benefits, and ensure sustainable practices, ultimately fostering efficient resource use and long-term sustainability in industrial operations, we need Key Performance Indicators (KPIs). KPIs in IS are crucial for

assessing resource efficiency, waste reduction, and economic gains. They highlight the environmental, economic, and social impacts of collaborative practices, guiding improvements and demonstrating the value of sustainable initiatives, thus fostering a Circular Economy and long-term sustainability. A complete analysis of these KPIs should be evaluated from five main dimensions (Yilmaz et al., 2016, Kantor et al., 2019):

- Legal and regulation KPIs: Legal framework, legal initiative, regulation and standards, etc.
- Economic and organizational KPIs: Profit and revenues, investment and operating cost, return on investment, internal rate of return, tangible environmental costs, economic impact, etc.
- Technical KPIs: Domestic material input, total water input, material efficiency, energy intensity and efficiency, etc.
- Social and Cultural KPIs: Number of jobs, cross-industry knowledge, cultural diversity, etc.
- Environmental KPIs: Direct greenhouse gas (GHG) emissions, global warming, respiratory organics and inorganics, carcinogens, ionizing radiation, aquatic and terrestrial ecotoxicity, ecosystem quality, climate change, etc.

3. Data and Method

Between 1993 and 2022, several Southern European and Balkan countries (Mediterranean countries) faced significant impacts from extreme weather events according to the Climate Risk Index (CRI report 2025). Italy (5th long-term rank) experienced severe human and economic losses, particularly during the 2003 and 2022 heat waves, alongside recurring droughts, wildfires, and floods, causing about USD 60 billion in damages. Greece (7th) suffered high fatality rates from floods, wildfires, and heat waves, notably in 2022, with losses exceeding USD 7 billion. Spain (8th) endured repeated heat waves and wildfires, causing USD 25 billion in losses. Other countries ranked lower but still faced notable risks:

- Croatia (20th) and Albania (42nd) showed considerable vulnerability, with significant flood and storm damage.
- France (32nd) was affected by heat waves and floods.
- Serbia (65th) and Slovenia (68th) suffered from floods and storms, while Cyprus (71st) faced droughts and heat extremes.
- Montenegro, Bosnia and Herzegovina (99th), and Malta had lower rankings but are exposed to localized severe events.
- Turkey (153rd) ranked low in long-term CRI due to fewer high-magnitude disasters in the period, though specific events caused substantial localized damage.

Based on figure 1, Italy, Greece, and Spain are outliers among high-income nations for their extreme vulnerability primarily from increasingly intense and frequent heat waves while other regional countries have lower CRI scores but remain at risk from floods, storms, and droughts.

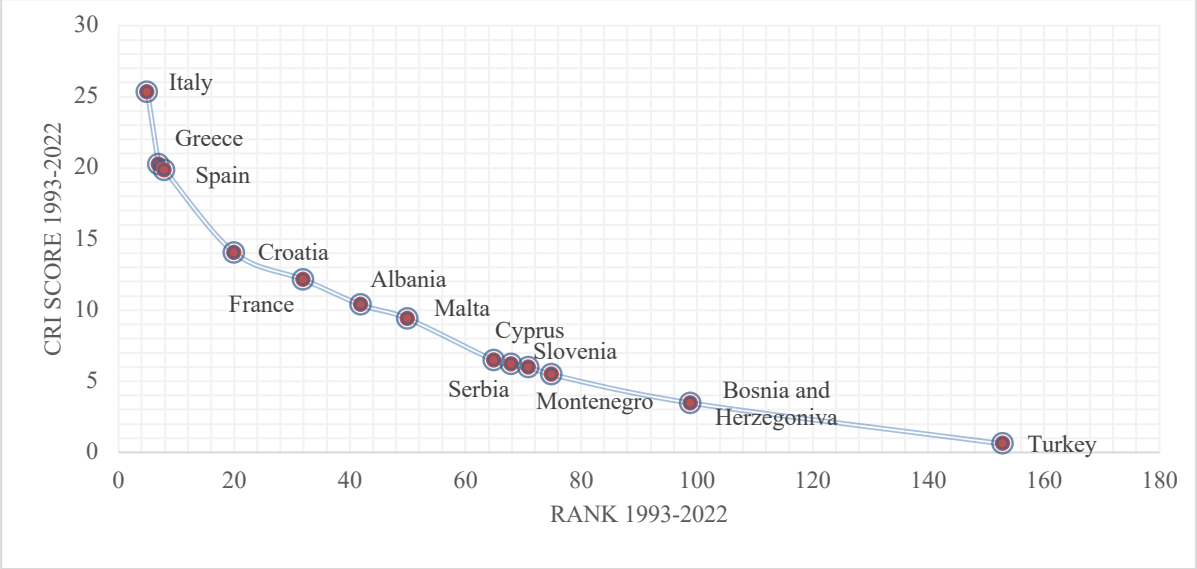

Figure 1: Climate risk index (CRI), 1993-2022 (annual averages)

Source: Climate Risk Index, 2025

Many studies recommend to include rapid adaptation to heat extremes (urban cooling, early warning systems), wildfire management, resilient water resource strategies, and infrastructure upgrades. Stronger regional cooperation on climate risk monitoring and disaster preparedness is critical, as Western Europe is warming at twice the global average, making extreme events more frequent and severe.

This study aims to identify the primary challenges and barriers to industrial symbiosis implementation, particularly within Mediterranean European contexts, and to gather actionable insights to improve industrial symbiosis efficiency. The methodology integrates quantitative and qualitative approaches to provide a comprehensive assessment of economic, organizational, technological, educational, institutional, and collaborative dimensions influencing industrial symbiosis. A structured questionnaire was designed to capture data across five thematic areas:

- Economic and organizational barriers – evaluating financial and fiscal constraints and the costs associated with IS adoption and exploring institutional frameworks, management limitations, and coordination challenges.
- Technological barriers – assessing the availability of appropriate technology and innovation capabilities.
- Educational and training initiatives – gauging the scope, accessibility, and effectiveness of IS-related training.
- Institutional and community awareness – understanding public and governmental recognition of IS benefits.
- Public–private sector collaboration – examining the degree of sectoral cooperation in fostering IS initiatives.

The survey targeted 63 respondents comprising scientific researchers, experts, and evaluators in IS.

Respondents were selected based on their expertise and active involvement in IS projects or evaluations. The questionnaire comprised multiple types of questions: (1) Likert scale questions (1 = Strongly disagree to 5 = Strongly agree) to quantify the severity, significance, or effectiveness of factors influencing IS, and (2) Multiple-choice questions to identify prevalent practices, actors, and conditions relevant to IS implementation.

The study creates a logarithmic linear regression model to analyze the relationship between the dependent variable (resource synergies) and the independent indices. This approach allows the estimation of elasticities and the examination of proportional changes in resource synergy levels relative to variations in influencing factors. The index values serve to reduce dimensionality and mitigate multicollinearity while providing a clear representation of thematic factor groupings:

$$log(Y) = \beta_0 + \beta_1 \log(X_1) + \beta_2 \log(X_2) + \beta_3 \log(X_3) + \beta_4 \log(X_4) + \beta_5 \log(X_5) + \varepsilon$$

The dependent variable index (Y) was IS development *"Level of main resource synergies"*, covering: material flow, energy flows, water flows, waste reuse, by-products, logistical and infrastructural synergies, and human and knowledge synergies. Independent variables were grouped into four composite indices (calculated as averages):

- Economic benefits index (X1) – reduction of waste/disposal costs, increased sustainability, competitiveness, energy efficiency, creation of new businesses, revenue generation, mutual cooperation, and cost sharing.

- Actors involvement index (X2) – participation of quality/operations/technical managers, industrial actors, and public actors.

- Barriers index (X3) – covering 16 potential barriers such as lack of fiscal incentives, insufficient funding, high investment costs, integration challenges, regulatory issues, outdated infrastructure, insufficient IS knowledge, skill gaps, and lack of networks/platforms.

- Economic and social conditions index (X4) – GDP growth, industrial investment, public–private collaboration, access to international markets, favorable trade policies, international green-tech collaborations, and natural resource access.

- Awareness and training index (X5) – educational and training program availability and quality.

- Error term of the regression, ε.

4. Empirical Analysis

After processing the data in the statistical software EViews, I realised the final output results of the model. This model successfully passed all the basic assumptions of the linear model (i.e., it is homoskedastic, has no multicollinearity, the residuals are normally distributed, etc.). Table 1 below which presents the final test results.

Table 1: Regression model estimation

Dependent Variable: LOG(Y)

Method: Least Squares

Sample (adjusted): 63

Included observations: 63 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.088342	0.402649	2.702952	0.0115
LOG(X1)	0.711286	0.171068	4.157901	0.0003
LOG(X2)	0.274585	0.124551	2.204608	0.0359
LOG(X3)	-0.956361	0.249460	-3.833733	0.0007
LOG(X4)	0.135476	0.058971	2.297321	0.0293
LOG(X5)	0.220494	0.113486	1.942919	0.0621

R-squared	0.702000	Mean dependent var	1.036986
Adjusted R-squared	0.648786	S.D. dependent var	0.300312
S.E. of regression	0.177974	Akaike info criterion	-0.455568
Sum squared resid	0.886898	Schwarz criterion	-0.186210
Log likelihood	13.74465	Hannan-Quinn criter.	-0.363709
F-statistic	13.19197	Durbin-Watson stat	2.046376
Prob(F-statistic)	0.000001		

Source: Author's calculation based on questionnaire data.

Because the model uses log–log specification, the coefficients can be interpreted as elasticities percent changes in the dependent variable resulting from a 1% change in the independent variable, holding others constant.

1. Economic benefits index (X1) with coefficient 0.7113 (p = 0.0003): This is the most influential positive predictor. A 1% increase in perceived economic benefits from IS (e.g., waste cost reduction, competitiveness, revenue generation) is associated with a 0.71% increase in resource synergies. This finding emphasizes that concrete economic incentives are critical for advancing IS adoption.

2. Actors involvement index (X2) with coefficient 0.2746 (p = 0.0359): Actor engagement both industrial and public sector has a significant positive relationship with IS development.

A 1% increase in actor involvement corresponds to a 0.27% increase in resource synergies, highlighting the role of collaborative networks and operational leadership in implementation success.

3. Barriers index (X3) with coefficient -0.9564 (p = 0.0007): This is the only negative and substantial coefficient. A 1% increase in the severity of barriers (e.g., lack of funding, regulatory issues, infrastructure deficits) is linked to a 0.96% decrease in IS development. This magnitude suggests that barrier reduction could yield strong positive impacts, making policy reforms and support mechanisms essential.

4. Economic and social conditions index (X4) with coefficient 0.1355 (p = 0.0293): Macroeconomic and trade conditions (e.g., GDP growth, industry investment, access to markets) exert a smaller but significant positive influence. A 1% improvement in these conditions is associated with a 0.14% increase in resource synergies, implying that broader economic stability supports IS uptake indirectly.

5. Awareness and training index (X5) with coefficient 0.2205 (p = 0.0621): The marginally insignificant show a weak significance ($p \approx 0.062$), this coefficient suggests a 0.22% increase in IS synergies for each 1% improvement in awareness and training. This aligns with expectations that educational initiatives and skill development can enhance IS readiness over time, even if effects are less immediate.

The model underscores that enhancing economic benefits and reducing barriers should be top priorities for policy and strategy, given their high elasticities. Actor involvement and conducive macroeconomic conditions also significantly foster IS progress, while awareness and training, though slightly below conventional significance thresholds, likely exert meaningful long-term influence. The strong model fit and statistical robustness provide confidence in these findings as a foundation for targeted interventions to accelerate IS adoption in Mediterranean European contexts.

5. Conclusion

Industrial symbiosis (IS) emerges as a strategic approach to mitigate climate change while advancing sustainable industrial development. By facilitating the exchange of by-products, energy, water, and materials among industries, IS reduces greenhouse gas emissions, enhances resource efficiency, and supports decarbonization efforts. It plays a pivotal role in the circular economy, where waste becomes a resource, extending material life cycles and reducing carbon-intensive extraction and processing. IS fosters technological innovation, collaborative networks, and resilience against climate-related disruptions, such as resource scarcity and extreme weather events. The integration of IS into climate policy frameworks, including the EU Green Deal and national adaptation strategies, highlights its relevance in achieving carbon neutrality. Complementary to IS, seasonal-to-decadal climate predictions enable informed decision-making in agriculture, energy, water, and industry, guiding adaptation measures and risk management. Together, IS and climate services form a comprehensive approach to address both mitigation and adaptation goals in climate-sensitive sectors.

From 1993–2022, Mediterranean countries like Italy, Greece, and Spain ranked among the most climate-vulnerable high-income nations, primarily due to extreme heat waves, droughts, and wildfires. While other regional nations had lower CRI scores, they remain exposed to severe floods, storms, and droughts. This underlines the urgency for adaptive infrastructure, resource resilience, and regional cooperation.

The logarithmic linear regression model examining IS development measured as "resource synergies" proved statistically robust and determinacy. The economic benefits index (X1) was the most influential positive factor: a 1% increase in perceived economic gains from IS (e.g., cost reduction, competitiveness, revenue generation) corresponded to a 0.71% increase in synergies. Actors involvement (X2) also had a significant positive effect, with a 0.27% synergy gain per 1% increase in participation, stressing the role of industrial and public sector engagement. Conversely, the barriers index (X3) had a strong negative impact: a 1% increase in barrier severity led to a 0.96% decline in synergies, highlighting the urgent need for policy and regulatory reforms. Economic and social conditions index (X4) had a smaller but significant positive influence (0.14% increase per 1% improvement), indicating that macroeconomic stability supports IS adoption. While awareness and training index (X5) was marginally insignificant but suggested a long-term positive role (0.22% increase). The findings stress prioritizing economic incentives, barrier reduction, and multi-actor collaboration to accelerate IS adoption and strengthen climate resilience in Mediterranean industrial ecosystems.

It is recommended that seasonal-to-decadal climate predictions be systematically integrated into industrial symbiosis strategies to strengthen resilience. This integration should guide project planning, infrastructure investment, and policy incentives, ensuring that resource-sharing networks adapt to climate risks, promote climate-aligned economic growth, and foster cross-sector collaboration in line with EU Green Deal objectives, supporting both mitigation and adaptation goals.

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Open Budgets and Fiscal Transparency: International Practices and Policy Recommendations for Türkiye

Fatma YAPICI SAPANKAYA[12]

Abstract
Societies' demand for fiscal transparency enables citizens to be informed about governments' budgets, and fiscal executions have been escalated increasingly. After facing the severe results of financial crises in 90s, demands for fiscal transparency rose dramatically. Governments of developed countries have not neglected societies' necessities to be informed regularly and accurately and have developed various tools to establish open budget platforms thanks to fast digitalization processes. Open budget provides information on government debts, taxation processes, public procurements, grants, subsidies, and public spending. In order to accomplish functions expected from open budget data, budgeting requires fiscal data, making it accessible, usable, machine-readable, and easily usable. In today's world, where digitalization is rapidly affecting every aspect of life, citizens increasingly want to make their voices heard and be involved in decision-making processes. An open budget data platform that includes citizen participation will contribute to discipline in public finances and build greater citizen confidence. This study aims to examine promising practices in terms of open budget data of selected countries and develop practical recommendations for Türkiye. In the scope of this study, open budget practices of South Korea, New Zealand, Poland, Georgia, Indonesia, and the Philippines will be examined and classified. Scientific articles, the Open Budget Survey 2023 of Open Budget Partnership, OECD's reports on transparency and digital government, and country reports published by various international organizations will constitute the primary sources of this study, and a document review will be conducted. The first part of this study will reveal the conceptual framework of fiscal transparency. The second part will explain the definition of the open budget, its scope and functions, ensuring fiscal transparency. The third part of the study will summarise selected good practices for open budgets and list recommendations for Türkiye. This study will end with a conclusion and an evaluation.

Keywords: Fiscal transparency, Open budget, Budget oversight, Civic participation.

JEL Classification: D73, G38, H61, H83.

1. Introduction

Transparency is defined as an organization's effort to ensure the availability and openness of information for people to access. By making information available and open, public trust and participation can increase while preventing abuse of authorities (Hermanus vd., 2024: 5579).

Fiscal transparency defined by Kopits and Craig (1998: 1) as:

"*Openness toward the public at large about government structure and functions, fiscal policy intentions, public sector accounts, and projections. It involves ready access to reliable, comprehensive, timely, understandable, and internationally comparable information on government activities—whether undertaken inside or outside the government sector—so that the electorate and financial markets can accurately assess the government's financial position and the true costs and benefits of government activities, including their present and future economic and social implications".*

This definition formed the basis of the IMF's financial transparency principles. Fiscal transparency is supported by effective fiscal rules, independent fiscal institutions, a medium-term budgetary framework, which is the basis for effective and efficient fiscal risk management. Fiscal rules are permanent constraints on fiscal policy, set out in legislation, and are intended to strengthen the discipline of public finance and limit the freedom of politicians in fiscal policy-making

[12] Assist.Prof., Dokuz Eylül University, Faculty of Economics and Administrative Sciences, Department of Public Finance, İzmir-Türkiye, fatma.yapici@deu.edu.tr

(Jastrzębska, 2022: 376). Fiscal transparency require governmental organizations to provide budget forecasts, enacted budgets, mid-year budget implementation reports, year-end budget implementation reports, public debt reports, and other fiscal policy documents which contains public resources usage accessible, readable, understandable by users in a timely manner. Governments' successfull efforts to make budgetary information accessible constitute good open budget practices. In addition to publishing budgetary information, some governments provide accessible budget information in different formats to ensure greater access and utilisation. Budget information users, such as civil society budget analysts, would like to access these information in open data formats that are machine-readable and friendly to use, transform, and explore (IBP, 2019: 30). So advances in information and communication technologies by digitalization have become a crucial component of fiscal transparency and open budgets inevitably.

This study adopted a descriptive research approach and utilized a comprehensive literature review. Analyses utilized articles, theses, research reports, evaluation reports from international organizations, and secondary data. Georgia, New Zealand, South Korea, Indonesia, and Türkiye are selected to analyse their open budget practices in line with fiscal transparency principles. The main aim of this study is to explore good practices on open budgets that help citizens to better understand the government's fiscal policies and success at implementing macroeconomic targets through budget management and develop policy recommendations for Türkiye in the light of international practices.

2. Conceptional Framework of Open Budget and Fiscal Transparency

From the mid-19th century onward, European governments published budgets to sanction and enforce taxation. Throughout the 20th century, public spending and investment in social services increased significantly, particularly in developed countries. Open spending is based on open budget data and is characterised by freely accessible, machine-readable information on public expenditures. Following the East Asian crisis and the rise of the financial sector, there was a significant demand for transparency in public finances and off-budget transactions. This demand led to a surge in demand for increased granularity of raw data sets on public expenditures and budgets, enabling increased governmental information and market-based policy decisions (Mewa, 2019: 3). As a result of 20 years demand for fiscal transparency aftermath of the financial crisis, governments need to take steps towards more open budgets and provide open budget datas by navigating international standards, clear communication and designing budget information, building regulatory oversight bodies, and legislative and civic participation (Mewa, 2019: 5).

The IMF has published various guides since the late 90s to guide countries on transparency. IMF published Guide on Resource Revenue Transparency in 2005, was revised in 2007. The Fiscal Transparency Code (the Code), first published in 1998, was updated in 2014 and 2019. The code, which was created to establish a standard for financial transparency in public finances, consists of four essential components (IMF, 2025).

IMF also published Fiscal Transparency Handbook in 2018. IMF regularly publishes reports named "Fiscal Transparency Evaluation" for countries in order to assess countries' fiscal transparency performances according to meeting principles at which level with the aim of strengthening fiscal supervision and accountability among member countries. The IMF's Financial Transparency Code (the Code) which was published firstly in 1998, has been adopted as the international standard for the disclosure of information on public finances. The Code consisted of four pillars as follow: fiscal reporting (i), fiscal forecasting and budgeting (ii), fiscal risk analysis and management (iii), and

resource revenue management (iv). While pillars i-iii were prepared in 2014, pilar iv resulted in end of 2019 (IMF, 2025). Table 1 shows the four pillars of the fiscal transparency code.

Table 1: Pillars of The IMF's Fiscal Transparency Code




I. Fiscal Reporting	II. Fiscal Forecasting & Budgeting	III. Fiscal Risk Analysis & Management	IV. Resource Revenue Management
• Coverage	• Comprehensiveness	• Risk Analysis & Disclosure	• Resource Ownership & Rights
• Frequency and Timeliness	• Orderliness	• Risk Management	• Resource Revenue Mobilization
• Quality	• Policy Orientation	• Fiscal Coordination	• Resource Revenue Utilization
• Integrity	• Credibility		• Resource Activity Disclosure

Source: (IMF, 2018:3).

According to Fiscal Reporting pillar, fiscal reports should inform about financial position and performance of the governments' by a comprehensive, timely, relevant and reliable manner. Fiscal reporting compromise of the preparation and publication of short information about the a country's fiscal performances over years. Fiscal report includes different types of reports such as in-year and year-end budget outturn/execution reports, fiscal statistics, and annual financial statements. Fiscal reporting covers four dimensions shown at Table 1. These dimensions are explained below (IMF, 2018: 9).

- The coverage of fiscal reports requires the including of institutions, stocks, flows, and tax expenditures in the fiscal reports.
- According to the frequency and timeliness of fiscal reporting, in-year fiscal reports should be published on a regular basis. Annual financial statements should be publish in a timely manner.
- The quality of fiscal reports refers to ensurement international comparability and internal and historical consistency of fiscal reports.
- The integrity of reported information requires reliability and the comparability of budget and outturn data.

World Bank is another intergovernmental organization advocates fiscal transparency in countries, including transparency of budget processes. Since the early 1990s, the World Bank has been undergoing a significant change in the policies it has recommended regarding countries' public financial management. This change is particularly evident in the Public Expenditure Reviews, which the World Bank regularly prepares to examine the public financial structures of countries by reviewing the entire budget processes and making the necessary assessments. The Public Expenditure Management Handbook was first published in 1998 and aimed to present new

principles and an implementation framework for effectively and efficiently distributing public resources within the public decision-making process (Yılmaz, 1999: 1-2).

Transparency is a core element of a functioning democracy according to OECD. It is underpinned by the right to access information, understood as the ability of an individual to seek, receive, impart and use information (OECD, 2022). The OECD Recommendation on Open Government emphasises the importance of proactive disclosure of "clear, complete, timely, reliable and relevant public sector data and information" (OECD, 2025: 90).

OECD defines open government as a governance culture which incentives transparency, accountability, integrity, and civic participation to ensure democracy and inclusive growth.

OECD adopted Recommendations on Open Government in 2017, emphasis promotion of transparency, integrity, accountability and stakeholder participation principles in an open and inclusive manner. Open government policies and practices are widely recognised as important avenues to reinforcing democracy and strengthening trust in public institutions, as also highlighted in the OECD Reinforcing Democracy Initiative ("RDI") and its pillar 2 on "Enhancing representation, participation and openness in public life". According to results analysed through 2021 OECD Perception Survey on Open Government, "fostering citizens' trust in public institutions" and "increasing peoples' satisfaction with public services" are most prominent objectives for adherents' open government policies. Figure 1 shows the major objectives of open government policies according to 2021 OECD Perception Survey on Open Government (OECD, 2023: 23).

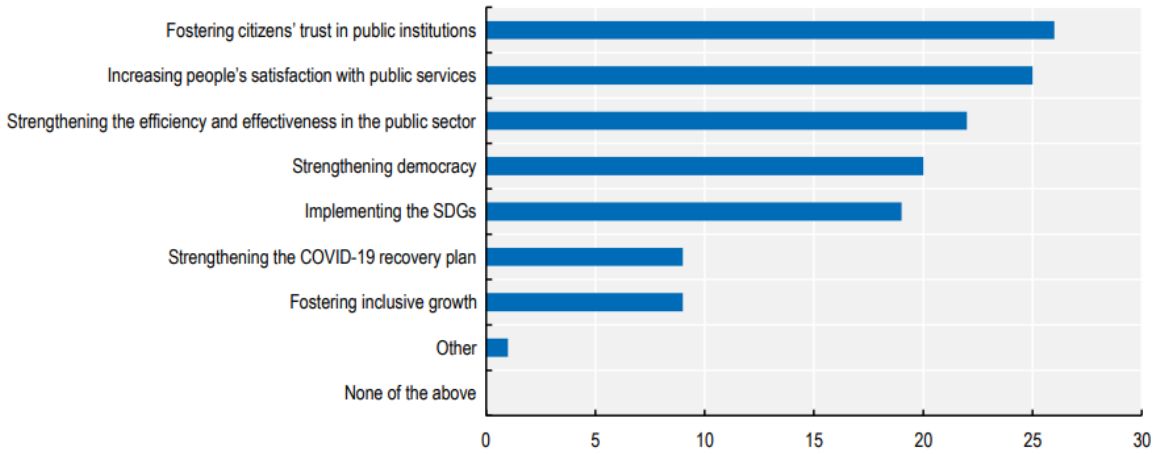

Figure 1: Major objectives of policies open government

Source: (OECD, 2023: 23).

According to 2020 OECD Survey on Open Government, main policy documents to promote open government are OGP action plans and digital government strategy. Figure 2 indicates the main policy documents that emerged as a result of the Survey.

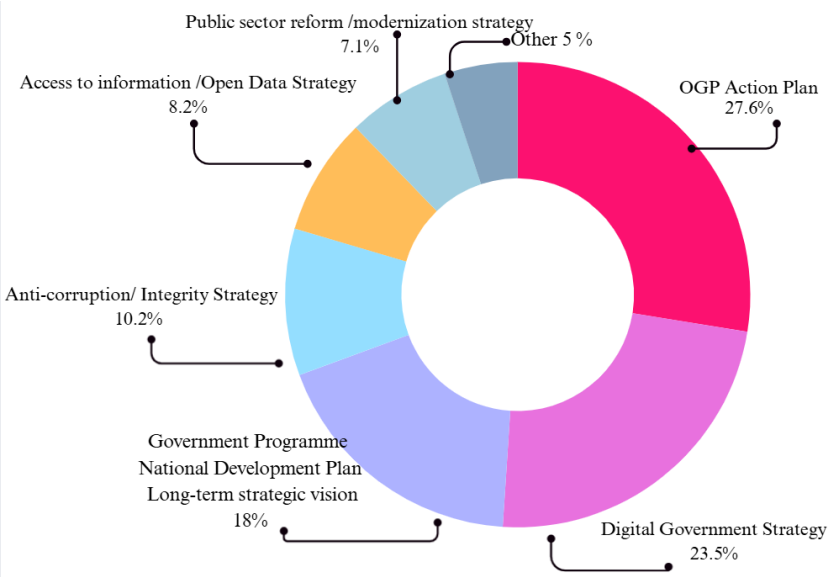

Figure 2: Main policy documents for open government (2020 OECD survey)
Source: (OECD, 2023: 23).

As its seen at the Figure 2, Open Government Action Plan (OGP) most frequently evaluated among policy documents. Digital Government Strategy and Government Programme/National Development Plan/Long-term strategic plan vision are other highlighted documents for Open Government at the 2020 OECD Survey.

According to 2020 OECD Survey and OECD Open Government Reviews, while adherents' policy frameworks for the promotion of the open government principles diverse, they most commonly include whole-of government policy documents underpine the broader government agenda such as Public Sector Reform Strategy, integrated policy documents with focus especially on the promotion of Open Government like Open Government Strategies or OGP Action Plans, and policy documents focusing on elements for Open Government (OECD, 2023: 23). Figure 3 shows digital government scores of OECD member countries.

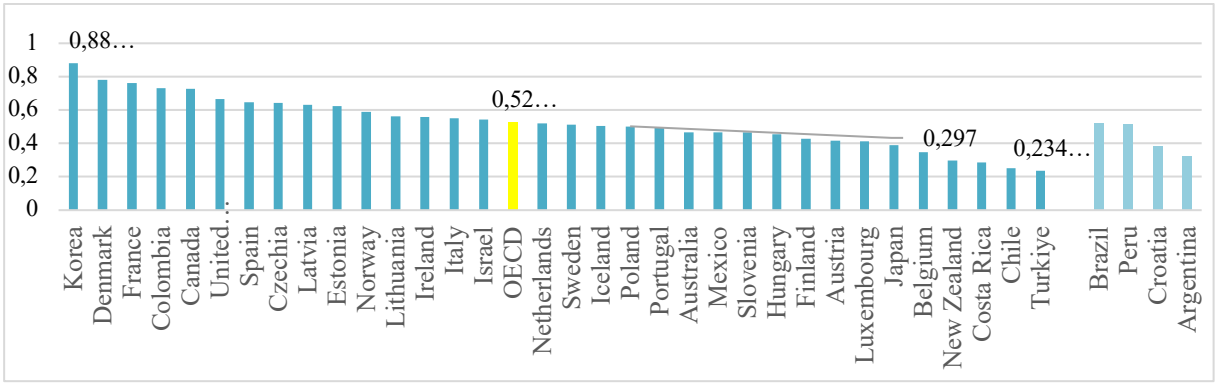

Figure 3: Digital government, open by default, 2022
Source: (OECD (2022), Survey on Digital Government 2.0)

As it's seen at Figure 4, South Korea is the leading country in terms of digital government practices with 0.88 points, while Türkiye's score is below the OECD average 0.52 points.

There are several remarkable initiatives for open budget efforts. As an intergovenmental organization World Bank, OECD, IMF multi-stakeholder initiatives such as Open Government Partnership (OGP), Global Initiative for Fiscal Transparency (GIFT), International Aid Transparency Initiative (IATI), "Where Does My Money Go?" (funded by UK government), 4IP, Open Society Foundation, the Knight Foundation, Hewlett Foundation, BOOST World Bank Initiative, Open Knowledge International (OKI), Open Fiscal Data Package (OFDP) and the Omidyar Network have been making efforts to ensure fiscal transparency (Mewa, 2019: 3-3-5).

2.1. Literature Review

A review of the literature reveals that most studies on fiscal transparency and/open budgets focus on the relationship between fiscal transparency and corruption, welfare, and electoral systems. Citro et. al. (2021) conducted research to investigate budget transparency to identify factors affecting budget transparency of 95 countries regarding government characteristics. Findings suggest that when political competition is high, incumbents encourage transparency to constrain other politicians. Regarding political and electoral systems, our results document that countries with parliamentary political systems and majoritarian electoral systems tend to be more open about budgets. Furthermore, electoral competition increases budget transparency. Furthermore, robustness analyses indicate that the effects of tenure, political ideology, or parliamentary system are influenced by legal origin (Citro et. al., 2021: 134). Alt and Lassen (2006) used panel data analysis to examine the effects of fiscal transparency and political polarization regarding the influence of the electoral cycles on the fiscal balance by using a sample of nineteen OECD countries in the 1990's. They have found that a persistent pattern of electoral cycles in low(er) transparency countries while no such cycles can be observed in high(er) transparency countries. Also, their results show that electoral cycles being induced by political polarization, in most cases reveals itself only after controlling for the level of transparency.

Lapsley and Rios (2015) used mixed method to examine the transparency in the Scottish budgetary system. Results show that politicians are not willing to transparency. They found that the official meeting reports of the Scottish Parliament's Committees show that elected members of parliament tend to restrict the publicity of their discussions, preferring closed (private) meetings, thereby undermining transparency. When politicians are given discretion to disclose or withhold information in these meetings, there is a consistent tendency to hold private meetings and avoid public view (Lapsley& Rios, 2015: 383). Rios et. al. (2014) have found that legislative budgetary oversight affects budget transparency positively. According to research results, besides, legal system, political competition, and economic level are have positive impact on budget transparency as well.

Cuadrado-Ballesteros and Bisogno (2022) implemented economic models to investigate budget transparency in line with its relationship with financial sustainability using Open Budget Index datas. Results of the study emerge that budget transparency might be positively related to the financial sustainability of governments. Alt and Lassen (2005) examined the fiscal transparency and public debt relationship for 19 OECD countries. They found that higher degree of fiscal transparency is related with lower public debt and budget deficits. Cuadrado-Ballesteros and Bisogno (2023) analysed emprically the fiscal transparency and human develeopment relation by using a pool of 110 countries for the years 2008, 2010, 2012, 2015 and 2017. Results show that an increased level of budget transparency in a country would have a positive impact on human development.

Disclosures on behalf of citizen participation and accountability measures ensure that open budget data plays a facilitating and service role in achieving broader goals such as greater transparency and

efficient spending. Establishing mechanisms to engage with civil society and receive feedback is necessary to assess institutions' ability to meet public demands

2.2. International Organizations and Indexes for Open Budgets and Fiscal Transparency

Roles of Open Government Partnership, The Global Initiative for Fiscal Transparency, International Budget Partnership, The Global Open Data Index (GODI), and E-Government Development Index (EGDI) for open budgets and fiscal transparency are explained briefly below.

2.2.1. Open Government Partnership

Government leaders and civil society organizations founded the Open Government Partnership (OGP) in 2011 to advance transparent, participatory, inclusive and accountable governance. Brazil, the United States of America, Indonesia, Mexico, Norway, the Philippines, South Africa, and the United Kingdom are the founding countries of OGP. OGP collaborates with 74 countries, 150 local governments, and thousands of civil societies over the World. OGP Local was founded in 2016 to promote transparency, accountability and civic engagement in budget decisions at the local level. Participation of OGP requires to fulfilment of conditions. While meeting the Core Eligibility criteria is first step, second step is the to pass the OGP Values Check assessment. Core Eligibility criteria is metrics for measurement of the governments' performance at four essential areas of open government. These areas are fiscal transparency, access to information, public officials asset disclosure, and citizen engagement. In addition to core eligibility criteria, countries must endorse the Open Government Declaration of OGP which published in 2011. Open Government Declaration emphasis five main principles: providing transparency and Access to information, supporting civil participation, increasing new technologies to reinforce openness and accountability, adopting high ethical standards and combating to corruption, and sustainable commitment and international Corporation. Once a country becomes a member of OGP, participation requires developing an action plan that includes commitments to transparency, accountability, and inclusion in collaboration with civil society organizations. OGP published OGP National Handbook and a guidance for facilitating members' efforts to engage and execute collaboration processes at developing action plans. (OGP, 2025).

2.2.2. The Global Initiative for Fiscal Transparency

The Global Initiative for Fiscal Transparency (GIFT) is an action-network with 58 members founded in 2011 with the aim of making sustainable and measurable developments in fiscal transparency. GIFT also aims to promote inclusive participation by supporting global norms, peer-learning, collaborative assistance and advancing use of digital tools. GIFT cooperates with ministries of finance, international financial institutions, civil society organizations, and other stakeholders to develop solutions to surpass obstacles on fiscal openness. In 2016 GIFT conducted a consultation process and launched a new set of principles with name of "Principles of Public Participation in Fiscal Policies". In 2018, GIFT issued an Expanded Version of the High-level Principles on Fiscal Transparency, Participation and Accountability (EVHPFTPA) for explaining the role of the GIFT High-level Principles since 2012 in promoting greater fiscal transparency globally (GIFT, 2025).

GIFT Principles on Fiscal Transparency, Participation and Accountability are as follows: access to information (1), clear and measurable objectives (2), quality, reliable information (3), communication of objectives (4), legal basis for financial transactions (5), defined government sector (6), legislation of fiscal roles and responsibilities (7), legislative power of the purse (8),

supreme audit institution's independence (9), and public participation in fiscal policies (10) (GIFT, 2025b)

2.2.3. International Budget Partnership

International Budget Partnership (IBP) was founded 25 years ago as a non-profit organization develop partnerships with civil society, community organizers, government champions, and budget analysts to promote more responsible, effective, and equitable management of fiscal sources of governments in other words public money. Also, IBP produces data, advocates for reforms, and helps people receive training to understand budgets and financial data better to have a voice in budget decisions that affect their lives. IBP has collaboration with 100 countries over the World (https://internationalbudget.org/network/, 13.08.2025). Budget transparency gives members of the public a clearer picture of how government funds are raised and spent, while public participation in the budget allows them to shape these decisions and steer their implementation (IBP, 2023: 34). IBP evaluates countries in terms of open budget through Open Budget Surveys (OBS) which is published biannually since 2006. Rankings ranging from zero to one hundred from 0 to 40 are few, 41 to 60 are limited, and 61 to 100 are adequate. Through OBS countries are evaluated separately based on their openness in three categories: public participation, budget oversight, and transparency. The transparency category of OBS is divided into five categories, as shown below at Figure 4.

Figure 4: Categories of transparency scores of open budget survey

Source: (IBP, 2023).

According to open budget 2023 survey; Transparency is 45, Public Participation is 15, Legislative Oversight is 45, and Audit Oversight is 62 out of 100. The survey assesses transparency by evaluating the public's access to eight key budget documents, which should be widely available during the budget cycle, and the comprehensiveness of the information in the documents. In this pillar, countries have made notable progress. Since 2008, global transparency scores have increased by more than 20%, and in this latest round, there was one point increase in the average transparency score for the same 120 countries assessed in both OBS 2021 and OBS 2023 (IBP, 2023: 8). However, OBS 2023 finds the global average transparency score is only 45 out of 100,

According to latest OBS published in 2023 the top-ranked countries in the public participation category are South Korea (65), New Zealand (55) and the United Kingdom (54), respectively. The top-ranked countries in the budget oversight category are Norway (87), South Korea (85), Czechia (85), and Georgia (83), respectively. The top-ranked countries in the transparency category are Georgia (87), New Zealand (87), and Sweden (85). Türkiye's public participation score is 0, budget oversight is 61, and transparency is 64. As the score shows, while public participation in Türkiye needs to develop, budget oversight and transparency are adequate borderline, and there are definitely areas for improvement.

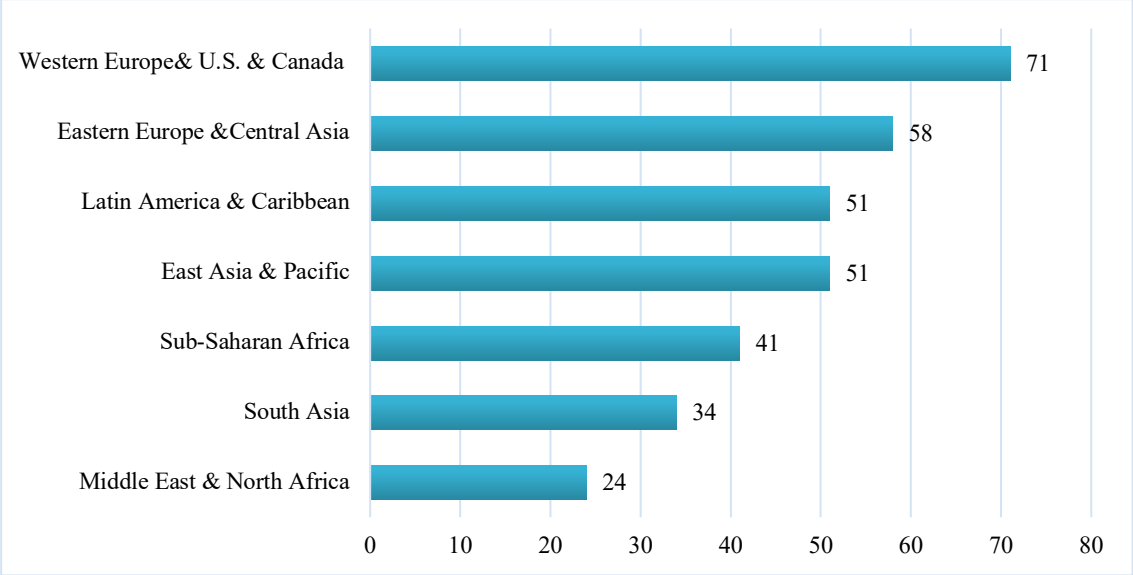

Figure 5: Regional transparency scores

Source: (IBP, 2023: 13).

The Global Open Data Index (GODI) is defined as the first major assessment of the state of open government data. GODI evaluate countries on the basis of availability of public data on government budgets, government spending, national statistics, draft legislation, laws, procurement, national laws, administrative boundaries, and other essential sectors.

The Global Open Data Index was the first major assessment of the state of open government data in the world. Launched by Open Knowledge Foundation in 2013, the index brings together a global community of open data advocates and experts to provide a comprehensive snapshot available of the state of open government data publication. National government budget at a high level, that is the planned government expenditure for the upcoming year, and not the actual expenditure. Open budget data allows for well-informed publics: showing where money is spent on, how public funds develop over time, and why certain activities are funded. Qualifications of open data listed as openly licenced, open and machine-readable format, downloadable at once, it's up-to-date, publicly available, available free of charge by GODI. Romania, Paraguay, India, Belgium, Argentina, Australia, Sweden, Brazil, Poland, Chile, Czech Republic, Croatia, Denmark, Germany, France, Israel, Mexico, Uruguay, Great Britain, Ukraine, Taiwan, Singapore, Russia, Italy, Colombia, Jamaica, Japan, Latvia, Macedonia, Netherlands, New Zealand and Norway evaluated as % 100 open on government budget criteria. GODI has covered 94 in 2016/17. Governments of UK, Australia, Norway to Jamaica have used the GODI rankings to show their commitments to open data publication (GODI, 22.08.2025).

United Nations created an indicator named the E-Government Development Index (EGDI) to show weighted average of countries' performance on three independent component indices. These indices are the Online Services Index (OSI), the Telecommunications Infrastructure Index (TII), and the Human Capital Index (HCI). The OSI is comprised of five subindices such as institutional framework (10%), services provision (45%), e-participation (35%), content provision (5%), and technology (5%) (Zafarullah & Siddiquee, 2024: 33-34). Along with an assessment of the website development patterns in a country, the E-Government Development index incorporates the access characteristics, such as the infrastructure and educational levels, to reflect how a country is using information technologies to promote access and inclusion of its people (UN, 2025). There is a strong positive correlation between the EGDI and public sector expenditure of a country. Proportion

of public spending as a percentage of original approved budget is emphasized for achieving SDGs[13] (UN, 2024: 10).

In the national strategy for digital platform government in the Republic of Korea, the zero trust strategy is identified as crucial for establishing a secure digital foundation (UN, 2024: 19).

As noted in the 2020 edition of the United Nations E-Government Survey, "a strong political will, strategic leadership, and the commitment to expanding the provision of digital services" can often improve a country's comparative EGDI ranking. Denmark, Estonia, Singapore, Iceland, the Republic of Korea and Saudi Arabia are among the leading countries at digital services (UN, 2024: 22). South Korea's EDGI score is 0.9679 (4th in the world, 2nd leading countries of Asia on e-government), New Zealand's EDGI score is 0.9265, Türkiye's EDGI score is 0.8913, (9th leading countries of Asia on e-government), Indonesia's score is 0.7991, New Zealand's score is 0.9265, and Georgia's score is 0.7792. Türkiye has also made significant progress in digital transformation by committing substantial resources to digital infrastructure, embracing new technologies such as AI, blockchain and the Internet of Things (IoT) in order to innovate administration and services delivery (UN, 2024: 110). Nearly 90 percent of countries UN evaluated through E-government survey 2024, publish open data sets on the national budget and government expenditures. While only 45 percent of the data sets were published in machine-readable formats however, 31 percent of countries implement a participatory budgeting mechanism (UN, 2024: 58). The sectors with the most information available on public expenditures are as follows: education (90%), employment (85%), health (89%), justice (86%), social protection (88%) (UN, 2024: 59).

This study examines the open budget practices of South Korea, Indonesia, Georgia, New Zealand, and Türkiye to develop policy recommendations for Türkiye and the future. Countries' selection criteria are GDP, OBS scores, and corruption perception index scores (mostly higher than Türkiye's. Table 2 shows the scores related to open budget indicators, corruption perception index, and GDP of selected countries.

Table 2: Open budget indicators of selected countries

	OGP Membership	IBP membership	Open Government Global Rankings (WJP) (0-1) 2024	Global Open Data Index Scores on Budget (0-100%) 2016/17	OBS budget oversight scores (0-100) 2023	OBS transparency scores (0-100) 2023	OBS Public participation scores (0-100) 2023	Corruption perception index score 2023 (0-100)
Georgia	Yes	Yes	0.59 (45)	-	83	87	44	53 (53)
New Zealand	Yes	Yes	0.83 (5)	100	78	87	55	83 (4)

[13]SGD 16.6: Develop effective, accountable and transparent institutions at all levels
SGD 16.6.1 Develop effective, accountable and transparent institutions at all levels measures primary government expenditures as a proportion of original approved budget, by sector" (see United Nations, Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development https://unstats.un.org/sdgs/indicators/Global-Indicator-Framework-after-2025-review-English.pdf).

South Korea	No	Yes	0.72 (20)	-	85	71	65	64 (30)
Indonesia	Yes	Yes	0.55 (56)	60	59	70	26	37 (99)
Türkiye	No	No (multiple projects)	0.40 (108)	45	61	64	0	34 (107)

*World Bank
Source: (IBP (2024). Open Budget Survey 2023; Transparency International 2024; 2024 WJP Rule of Law Index, https://worldjusticeproject.org/rule-of-law-index/global/2024/Open%20Government/).

The Corruption Perceptions Index is accepted as the leading global indicator of public sector corruption. The CPI scores 180 countries by using a scale from 0 to 100, with 100 being very clean and 0 being highly corrupt. Countries on the CPI are shown in different colours, from highest to lowest, yellow to burgundy. For example, Denmark, which tops the CPI 2024 list with 90 points, is shown in bright yellow on the map, while Latvia, with 59 points, is shown in orange, Colombia, with 39 points, is shown in red, and South Sudan, at the bottom of the list with 8 points, is shown in dark burgundy. (https://www.transparency.org/en/countries/afghanistan?redirected=1)

Open government and absence of corruption are among the factors that World Justice Project (WJP) evaluate countries from 0.00 is weaker to 1.00 stonger. Overall index score is a formulation of all factors.

The country's percentage for Open Budget Index is an average of responses to survey questions on executive's budget proposal, any supporting budget documents, the citizens budget, the pre-budget statement, the in-year reports, the mid-year reports, the mid-year review, the year-end report, and the auditors' report. Figure 6 shows the development of Open Budget Index scores of selected countries over the years.

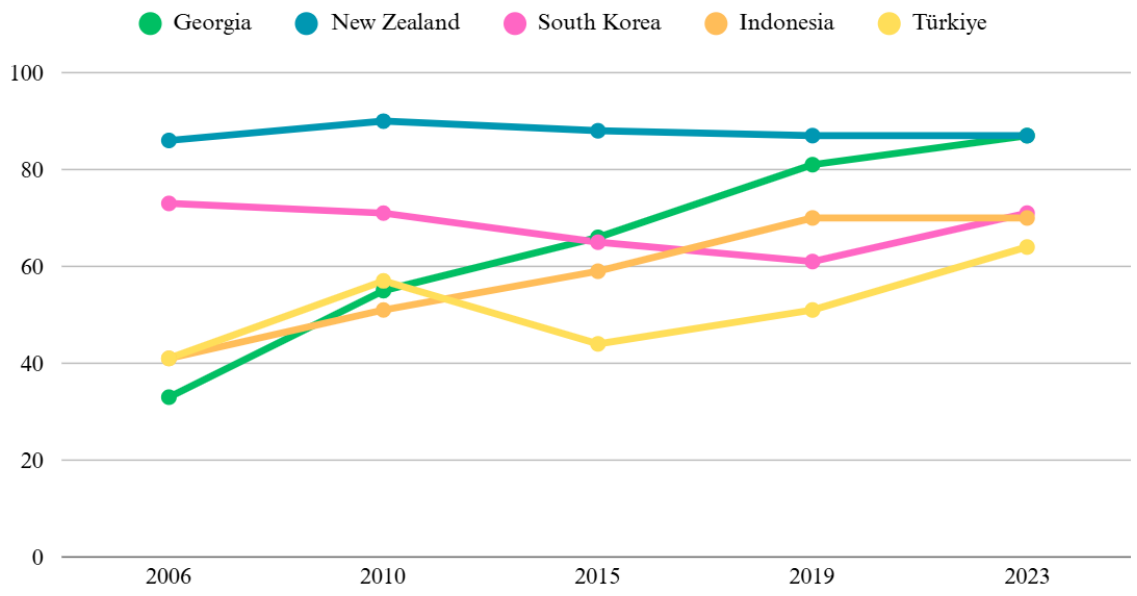

Figure 6: Development of Open Budget Index scores (transparency) selected countries over years, 2006-2023 years
Source: (IBP, 2006; IBP, 2010;IBP 2015; IBP 2019; IBP, 2023)

New Zealand ranked first in the Open Budget Surveys published in 2015 and 2019, and its OBI score has been consistently high since 2006. While Turkey and South Korea's OBI scores fluctuated between 2006 and 2023, it is noteworthy that these countries' transparency scores have been rising in recent years. Developing countries like Indonesia and Georgia have made significant progress in open budget practices during this period. Georgia's efforts towards open budgeting have led to its ranking as a leading country in the 2023 OBS. Table 3 shows availability status and comprehensiveness scores of budget documents at selected countries (Green colour represent 61-100 points, yellow colour represent 41-61 points, and red colour represent 1-40 points out of 100).

Table 3: Public availability status and comprehensiveness scores of budget documents in selected countries, 2023 year

	Pre-Budget Statement	Executive's Budget Proposal	Enacted Budget	Citizens Budget	In-Year Reports	Mid-Year Review	Year-end Report	Audit Report
South Korea	No	+(79)	+(95)	+(100)	+(89)	No	+(79)	+(86)
Indonesia	+(50)	+(66)	+(83)	+(59)	+(74)	+(89)	+64)	+ (90)
Georgia	+ (100)	+(87)	+ (100)	+(58)	+(100)	+(74)	+(85)	+(95)
Yeni Zelanda	+(95)	+(91)	+(100)	+(58)	+(74)	+(85)	+(81)	+ (86)
Türkiye	+(87)	+(67)	+(89)	+	+(100)	+(48)	+(59)	+ (38)

Source: (IBP, 2023b:4, IBP, 2023c: 3; IBP, 2023d: 3, IBP, 2023e: 3; IBP, 2023f: 3; IBP, 2023g: 3.)

Table 3 reveals that South Korea does not publish a pre-budget statement and mid-year review. However, other budget documents are available, and their comprehensiveness scores are high. Apart from South Korea, all selected countries publish budget documents. Türkiye also publishes all budget documents; however, the citizen budget was published late during the survey period. A citizens budget is defined as accessible to a user or reader who does not have budget knowledge and technical expertise. A budgetary document is essential for most people because it enables them to access the budget in an understandable format (IBP, 2023: 15-16). Figure 7 shows the scores of the comprehensiveness of budget documents of selected countries in a visual format.

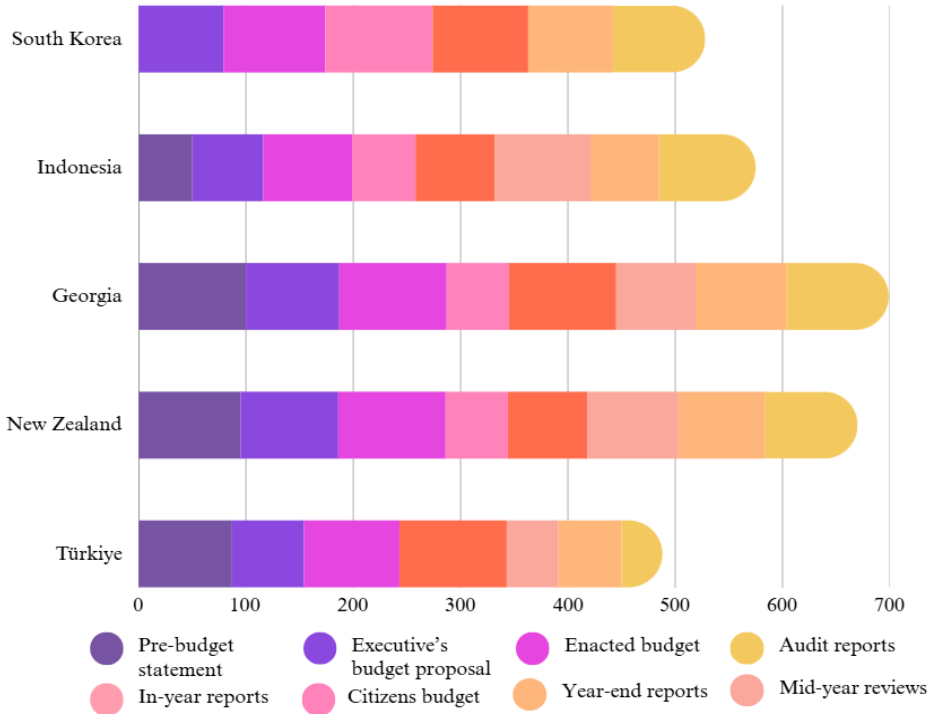

Figure 7: Comprehensiveness of budget documents of selected countries, 2023
Source: (IBP, 2023b:4, IBP, 2023c: 3; IBP, 2023d: 3, IBP, 2023e: 3; IBP, 2023f: 3; IBP, 2023g: 3.)

Georgia as the first ranking country at OBS 2023 has the biggest comprehensiveness scores at eight budget document categories among other countries.

3. International Practices on Open Budget Data and Policy Recommendations for Türkiye

Text

3.1. Open Budget Practices in South Korea

South Korea's Open Budget Index score is 71 and it makes the country 19th of 125 countries in terms of transparency (IBP, 2023). South Korea's Open Fiscal Data (OFD) platform is defined as an open website portal that transparently shares general financial data related to national fiscal transactions (budgets, payments, borrowing, etc.) with the public. Users are divided into two groups: making accessing relevant fiscal data easier. For example, general users can access public finance data, while professional users are provided with specialised financial data to access more analytical data. OFD reveals fiscal data about central government and local governments. Figure 8 shows the open fiscal data platform's "fiscal summary" section.

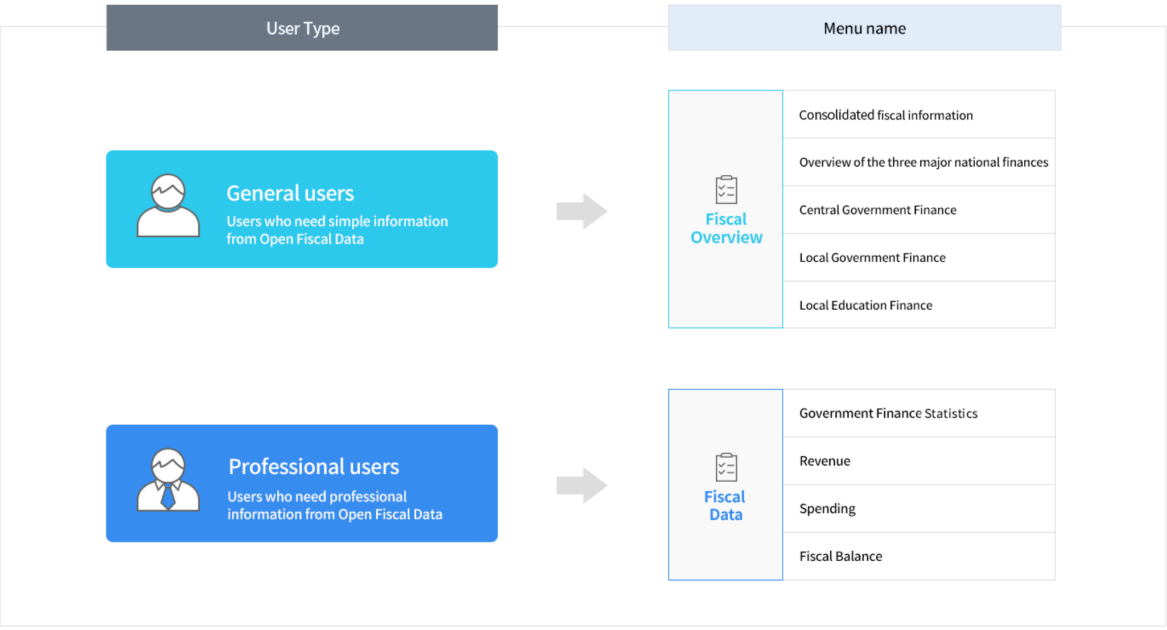

Figure 8: Open fiscal data platform's sections of South Korea
Source: (Open Fiscal Data,2025).

Within the open fiscal data provided to general users, under the 'Fiscal Overview' heading and withing the 'Consolidated fiscal information' menu, data on revenues, expenditures, fiscal balance, and liabilities are classified separately for central government, local goverment, and internal transaction (Central government+local government-internal transaction=general government). The fiscal data provided in this menu is for 2021 as of August 2025. Within the 'Overview of the three major national finances', data on public finance belonging to both central government and local governments is categorized into budgets (general account and special accounts), and funds. General accounts represent national expenditures financed by taxes as the primary funding source for the central budget. Unlike general accounts, special accounts represent specially managed budgets established by law for specific purposes. On the other hand, funds refer to resources used to finance projects requiring permanent funding or flexible implementation. Taxes are not the primary source of revenue for funds. Besides, depending on the operating organization, public finance is classified into three categories: central finance (conducted by central government), local finance (conducted by local government), and local educational finance of local education institutions. Local education institutions operate local education finance as special accounts treated separately from the general account of local governments. Within open fiscal data provided to professional users, under the 'Fiscal Data' heading and within the 'Government Finance Statistics' menu, revenues, spending, and fiscal balance of government by numbers and graphs. 'The fiscal data' section of the Open Fiscal Data portal provides fiscal data on revenues, expenditures, government fiscal statistics, the fiscal balance, national debt, and national property (Open Fiscal Data, 2025).

While participatory budgeting is used in many cities in South Korea, in 2019 Ministry of Economy and Finance implemented participatory budgeting for the 2019 budget, a named "My Budget". Citizens Committee was created through random selection of citizens to to deliberate and filter budget proposals that are submitted online.

Meetings ensures citizens, civil society and governments officials to work in collaboration in order to build consessus on ideas. As results of the meetings, funds are allocated for the winning projects by the legislature. Considering the relatively small size of the projects for which funds were allocated as a result of the meetings, participatory budgeting represents a very small part of the budget. For instance, for the 2019 year budget, only 38 projects worth US $ 70 million were approved through participatory budgeting which accounted 0.018 percent of the total 2019 budget

(IBP, 2019: 56). Any citizen is welcome to propose PB projects via various means, including the Internet, by mail, or in person. After proposals arrive, ministries review them and transfer a list of projects to a Citizens' Committee of 400 representatives for discussion. This Citizens' Committee meets four times with the help of a group of 68 experts. The Citizens' Committee must finally vote PB projects that will be submitted to the National Assembly. In addition to 400 participants, 2000 citizens can vote online. For the 2020 "My Budget", the budget granted was 224 million of dollars, an increase of 70% compared with last year's budget (OIDP, 2025).

3.2. Open Budget Practices in Indonesia

Acording to Open Budget Survey 2023, Indonesia's transparency score is 61, it makes the country's ranking is 20 out of 125. means that the country likely publishes enough material to support informed public debate on the budget (IBP, 2023).

Indonesia fully implemented performance-based budgeting (PBB) for fiscal year 2011. A "money follows function" approach adobted to accelerate the PBB transition and simplify implementation. Money follows function approach provided that performance information included in budget documents was clearly structured into programs, activities, outputs, sub-outputs, and components. In 2015, ministries and agencies were encouraged to review performance information using logic models. This step aimed to strengthen the causal link between performance and inputs, increasing its use in the budget review process. Following this, a regulation came into effect in 2018 encouraging the linking of performance information in strategic planning and budget documents. In 2021, the Indonesian government implemented a more comprehensive improvement to the PBB system, aiming to redesign planning and budgeting processes. This initiative focused on more effectively aligning programs, activities, and outputs with government spending priorities, while simplifying and reducing the volume of performance information (Azam & Bouckaert, 2024: 32).

Indonesia as a one of the eight founding countries of OGP have efforts to accomplish four essential areas for open government (fiscal transparency, access to information, public officials asset disclosure, and citizen engagement) as a part of its consitutional responsibility for social justice for all and as part of an implementation of Law Number 14 Year 2008 regarding Public Information Disclosure. Indonesia has launced seven Open Government Indonesia national action plans (OGI NAP) after OGP founded in 2011. First OGI NAP was launced in 2012 for the 2012-2013 period. The 6th OGI NAP was launced in 2020 for the 2020-2022 period. During drafting and the implementation of the 6th OGI NAP, 61 stakeholders comprimising of 29 civil society organizations and 32 governmental bodies. Non-governmental bodies' involvement of the OGI NAP encouraged especially at the drafting process (Republic of Indonesia, 2023: 4). Achievments of the 6th OGI NAP can be summarize as follows:

- Creation of an Integrated Election Data Portal (Open Data KPU- www.opendata.kpu.go.id.)

- The Availability of an Implementing Regulation for the Provision of Adequate Accommodation for Persons with Disabilities in Judicial Proceedings

During the 7th OGI Nap preparation period, OGI NAP National Secretariat disseminated a survey form and received responses from 52 respondents, consisting of 25 Government representatives and 27 CSO representatives. Participants proposed suggestions and solutions which were divided to five main topics, namely (i) Public Services; (ii) Anti-corruption; (iii) Justice; (iv) Community Empowerment; and (v) Digital Governance. Through those activities, the OGI National Secretariat obtained a list of 191 problems with 170 proposed solutions which could be raised in the 7th OGI NAP 2023-2024. Mostly frequently chosen topics are anti-corruption (28), civic space (25), and digital governance (23) respectively. To disseminate the results of the mapping of strategic issues based on previous activities, the OGI National Secretariat convened all its stakeholders in a multistakeholder forum. The Multistakeholder Forum not only invites open government

stakeholders affiliated with the Open Government Partnership, but also other bodies or institutions such as the National Secretariat for Corruption Prevention (Stranas-PK) and the National Secretariat for Sustainable Development Goals (Seknas SDGs), to align the actions in OGI's scope with other National Action Plans. Throughout the co-creation process of the 7th OGI NAP 2023-2024, the OGI National Secretariat received 27 Proposals from Ministries/Bodies and CSOs. Each step in the drafting process is publicized on a timely basis through the website: www.ogi.bappenas.go.id. The public were also given the opportunity to provide comments to the draft proposal commitments (Republic of Indonesia, 2023: 7-9). Figure 9 indicates the co-creation timeline for the 7th OGI NAP in Indonesia.

Figure 9: Co-creation timeline for the 7th OGI NAP 2023-2024
Source: Republic of Indonesia, 2023: 9.

Latest OGI NAP as 7th NAP was launced in 2023 for the 2023-2024 period.

The 7th OGI NAP 2023-2024 is in line with the 7th development agenda of the RPJMN, which is Political, Legal, Defense, and Security Stability and Public Service Transformation. 7th OGI NAP 2023-2024 comprises of six strategic issues which will be carried out, namely: (1) Anti-corruption and Budget Transparency, (2) Civic Space and Democracy, (3) Inclusive Public Services, (4) Access to Justice, (5) Gender, Disability, and Social Inclusion, (6) Energy, Environment, and Natural Resources (Republic of Indonesia, 2023: 1). 7th OGI NAP has 15 commitments. Commitments that directly impact open budget data and fiscal transparency, particularly anti-corruption and budget transparency, and inclusive public services. These issues are placed at the 7th OGI NAP, including in the strategic topics, as shown in Table 4.

Table 4: List of commitments related to open budget data and fiscal transparency in the 7th OGI NAP

No	Commitment Title	How will the commitment promote transparency?	Stakeholders	
Anti-corruption and budget transparency			Government	Civil society
1.	Encouraging Transparency and Participation in Government Procurement of Goods/Services	The publication of public procurement informations will increase public access to information that can be used to conduct studies, monitor, and participate in government procurement.	1-National Public Procurement Agency (LKPP) 2-Central Information Commission (KIP)	1.Indonesia Corruption Watch (ICW) 2.Transparency International Indonesia (TII)
2.	Optimizing the Implementation of Beneficial Ownership Data Disclosure	Through the transparency of beneficial ownership data, individuals are identified as the ultimate beneficiary and have a poor track record or are considered to be at high risk of committing a crime, particularly corruption, money laundering, or terrorism, so steps to mitigate the risk of corporate abuse can be implemented.	1.Ministry of Law and Human Rights 2.Presidential Staff Office 3. Financial Transaction Reports and Analysis Center 4. Ministry of Investment 5.Stranas-PK 6.Ministry of Energy	1.Publish What You Pay 2.Transparency International Indonesia 3.Indonesia Corruption Watch

			and Mineral Resources 7.Ministry of Environment and Forestry 8.Ministry of Agriculture 9.Ministry of Agrarian	
Inclusive Public Services				
8.	Social Accountability for Village Budget Openness	This commitment will promote the government to realizing the Integrity System at the village level by assistancing the village apparateus to publish their village financial budget information and to encourage the village government to publish more detailed of village spending work plans. The way to achieve it by taking advantage from the existing system by emphasizing the aspect of information disclosure at the village level.	Ministry of Home Affairs (Kemendagri)	Transparency International Indonesia (TII)
9.	Social Accountability for Public Services and Village Governance	The implementation of social accountability in public services and governance village could strengthen the relation and collaboration between the village resident and village apparateus. Good relations between the community and stakeholders increase the space for openness between the two.	Ministry of Villages, Development of Disadvantaged Region, and Transmigration (Kemendes PDTT)	1. Wahana Visi Indonesia (WVI) 2.TIFA Foundation

Source: (Republic of Indonesia, 2023: 11-45).

To promote transparency in line with the first commitment, publishing information related to public procurement of goods and services is considered a tool to increase public access to information. The government can ensure studies, monitoring, and participation in government procurement to improve the public access to information.

Some local governments in Indonesia stand out at implementation of ARBDes in accordance with transparency, accountability, and participative practives. For instance, in Sahan village, local government provides transparent information about budget and help local people to involve monitoring and decision-making processes. Harmanus et. al. (2024) conducted a research on transparency and accountabiliy practices in Sahan village, whose method is qualitative method and collected data through in-dept interviews and seconday data from documents. Results show that government of Sahan village has carried out principles of accountability and transparency in APBDes management successfully. In addition to implemantation of principles of APBD, government of Sahan village established the the principles of transparency with reference to Permendagri No. 20 of 2018 regarding Village Financial Management. According to results of the study, APBDes management applied at five main steps: planning, preparation, approval, implementation, and monitoring and evaluation.

According the results of the study planning of ARBDes (based on Village Medium Term Development and Village Government Work Plan) starts from January to June. Preparation part of ARBDes is between July and September of the current year. After discussion and delibaration with the community, the APBDes is approved by the Village Consultative Body. Approval part last between October and December of the current year. The implementation of the APBDes is executed in line with the determined budget allocations. Monitoring and evaluation part aims to provide

usage of the budget optimally and productively in accordance with designated targets (Harmanus et. al., 2024: 5580).

Government of Sahan village has presented budget information and allocation of the village funds openly by information boards, billboards and village websites. Publicity of informations related to public expenditures and revenues allow local people can easily This step is to ensure that the community can effortlessly access and understand the use of the village revenues (Harmanus et. al., 2024: 5581).

According to IBP, Indonesia should improve the comprehensiveness of the Citizens Budget, increase the information in the Executive's budget proposal and enacted budget, and other documents related to government's public financial management, and report on the differences between the estimates and actual outcomes for performans indicators in the year-end report to improve budget transparency (IBP, 2023d: 5):

3.3. Open Budget Practices in Georgia

Countries with higher OBS scores provide more open budget data: Canada, Georgia and New Zealand release budget data related to all or most budget documents and are among the highest scoring countries on transparency (IBP, 2019: 30). Georgia has a transparency score of 87 as leading country (out of 100). (IBP, 2023b:2).

Georgia has historically placed a high importance on openness and fiscal transparency as a tool to strengthen public financial management. At the time of the 2016 assessment many elements of sound fiscal transparency practices were in place. Yet, several gaps were identified that undermined the overall transparency and efficiency in public financial management and exposed the government to substantial fiscal risks. Seven years later, Georgia has made significant progress in addressing main transparency gaps highlighted by the 2016 evaluation, which have underpinned reform efforts in pensions, public investment management, public corporations, and the energy sector. Progress in fiscal transparency practices has been also recognized by the Open Budget Index, which upgraded Georgia's fiscal transparency ranking from 16th place in 2015 to first place in 2021 (IMF, 2024: 6). Georgia has also made essential improvements to promoting civic engagement in public audit. Audit Institute of Georgia launched the Budget Monitor. Budget Monitor is a web platform where citizens can participate in setting up the annual audit plan through sending audit requests, proposals and identifying priority fields (IBP, 2019: 52).

Georgia include awareness, participation and observation for citizens at the budgeting process. Citizens will have the opportunity to participate in the budget planning process, distribute budget funds at their discretion, both according to priorities and spending institutions, through the electronic module posted on the website of the Ministry of Finance of Georgia. https://ebtps.mof.ge/ (Ministry of Finance Georgia, 2023). At eBTPS (Electronic Budget Transparency and Participation System) portal, there are main headings enable citizens can better understand fiscal informations and participate: plan the budget, citizen's guide, budget graphical data, budget calendar, and public finances management (eBTPS, 2025). IBP (2023b: 6) recommends Georgia to implement pilot mechanisms for monitoring budget implementation, gathering public input on the contents of the citizens budget, and engaging at-risk and underrepresented communites.

3.4. Open Budget Practices in New Zealand

New Zealand's Open Budget Index score is 87, which makes it the second-ranking country out of 125. This is far beyond the global average of 45 and the OECD average of 67. Between 2012 and 2023, the country's transparency scores remained 85 or above (IBP, 2023f: 3).

New Zealand upload 71.43% of the reports proposed by the OECD to the Internet. Australia and New Zealand highlight among OECD countries at both the number of budgetary reports disclosure legally and online, and the level of online disclosure of the items designed by OECD project of Best Practices for Budget Transparency (OBPBT). New Zealand has gained the highest scores with Australia in both ex ante and ex post budgetary information availability online with percentages around 75%. This percentage indicates that these countries have great developments in fiscal transparency and share of budgetary information with public. It's noteworthy that online availability of ex ante information is higher than the ex post information. (Rodriguez Bolivar et. al., 2015: 967-868).

New Zealand Parliament and Treasury of New Zealand publish budgetary documents online. (New Zealand Parliament, 2021). Main informations about New Zealand's budget processes and documents related to budget reveals both in English and Māori languages. At Treasury of New Zeland web site has detailed budgetary documents and report display (The Treasury, 2025).

According to the The Public Finance Act 1989, Fiscal Strategy Report (FSR), the Budget Economic and Fiscal Update (BEFU), A Half Year Economic and Fiscal Update (HYEFU), Pre-election Economic and Fiscal Update (PREFU), and annual reports must be released by government. FSR is preared by government in order to present to the parliament along with its budget to explain government's short-term and long-term objectives with the financial explanations. BEFU is produced by the Treasury, provides an outlook for future with giving potential risks and infoms government for better decision-making. PREFU is a report which only is prepeared and published before general elections. Government entities of New Zealand are obliged to publish an annual report each year. This annual report which outlines entities' financial and organisational performance over the previous financial year must be published on the organizations' websites (New Zealand Parliament, 2021).

Pre-budget hearings held by New Zealand's Parliament icluding written submissions and oral testimony from members of the public, present a strong example of legislative engagement. Following the public hearings, Parliament releases a report to summarize the hearing and the submissions received (IBP, 2019: 52). According to OBS 2019, most countries publish an Audit Report, including having a legislative committee review the report. Half of the countries IBP evaluated have SAI that often reports to the legislature on audit findings. Only 17 countries, including New Zealand, publish audit reports and also have public hearings of the legislature on the audit findings. New Zealand is also among the six countries that have all five acts of the legislative and executive branches (IBP, 2019: 63).

3.5. Open Budget Practices in Türkiye

Türkiye's transparency score is 64 in 2023 and rank is 28 of 125 countries. Türkiye's transparency score has been above 61, with 64 in the Open Budget Survey 2023, since 2012 According to OBS 2023, Türkiye has decreased the availability of budget information in addition to failing publishing of the Citizens Budget in a timely manner (IBP, 2023g: 2).Türkiye is not a member of OGP and IBP at the national level, and no municipality is a local member of OGP. IBP recommends Türkiye to publish the Citizens Budget online in a timely manner and to improve the comprehensiveness of the Audit Report and Mid-Year Review to promote transparency (IBP, 2023g: 5). Even though Türkiye publishes a wide range of budgetary information online, comprehensiveness and timing are criticised by IBP.

Right to Information Law No. 4982 has been published in the Official Gazette in Turkey on 24 October 2003. Objective of the Law is to regulate the procedure and the basis of the right to information according to the principles of equality, impartiality and openness that are the necessities

of a democratic and transparent government (Article 1). According to Law No.4982, the institutions shall provide the required information within 15 working days upon application (Article 11).

Presidency of Strategy and Budget of Türkiye publishes draft budgets, enforced budgets, citizens budget, year-end reports, montly reports on budget implementation, and information on budget classification online under budget heading on its website (SBB, 2025). The Republic of Türkiye Ministry of Treasury and Finance (Hazine ve Maliye Bakanlığı-HMB) also publishes information on budget balance, budget revenues, and budget expenditures. HMB publishes public debt management reports, public finance reports, state-owned enterprises reports, and insurance reports both annually and montly (HMB, 2025). Only registered users who work for governmental bodies in financial departments can access the e-budget platform with a username and a password through the e-government gateway (e-devlet kapısı) of Türkiye.

Policy recommendations for Türkiye are given below:

- Public participation in the budget process should be encouraged nationally. A participation quota should be established to increase social inclusion, particularly for young people and disadvantaged groups.
- The first step for participatory budgeting at the national level can be selecting areas such as education and health, where social interest and sensitivity are high. The budget allocated for participatory budgeting should be determined as a certain percentage of the draft budget and should be decided to increase depending on inflation over the years.
- The e-budget platform accessed via e-government should be accessible to citizens, allowing for interactive voting and discussions on budget drafts. The e-budget platform could be designed to help users meet necessities according to their professional level.
- Reports related to public revenues, expenditures, and audits should be published promptly.
- An appropiate guideline for governmental bodies fordeveloping useful practices to increase fiscal transapancy and opennes of budgets should be constituted as a result of a forum that brings together representatives of non-governmental organizations, academics, volunteer participants and government employees.
- Like in New Zealand, the Treasury and Finance Ministry should prepare pre-election economic and fiscal updates before elections to show observations of the current economic and fiscal climate, as well as expectations over the forecast period in Türkiye.

4. Conclusion

Various initiatives and international organizations encourage countries to get their budget process more transparent and applying civic engagement. A review of literature reveals that fiscal transparency have positive impact on human development, fiscal sustainability, elimination of corruption, citizen empowerment, strengthen democracy. This study summarised the good practices of Georgia, New Zealand, South Korea, Indonesia, and Türkiye in terms of open budget and policy recommendations revealed for Türkiye. Open budget surveys conducted by IBP is accepted as most validate index for fiscal transparency of countries.125 countries worldwide are evaluated at transparency, public participation, and budget oversight biannually. Rankings ranging from zero to one hundred from 0 to 40 are few, 41 to 60 are limited, and 61 to 100 are adequate. Georgia is leading country at OBS 2023 with 87 points. New Zealand is the 2nd ranking country with 87 points. South Korea, which stands out for incorporating public participation into the budget process through a type of citizen committee, is among the top-ranked countries in the OBS with a score of 71. Indonesia's OBI score is 70 and Türkiye's score is 64.

South Korea established a open budget data portal to inform citizen and allow them participate national budget process through Citizens Committee. Indonesia as one of the founding countries of OGP have efforts to accomplish four essential areas for open government (fiscal transparency, access to information, public officials asset disclosure, and citizen engagement). Indonesia has launced 7 national action plan for open government strategies. In the scope of 6th OGI NAP, an Integrated Election Data Portal (Open Data KPU- www.opendata.kpu.go.id.) created. Latest OGI NAP as 7th NAP was launced in 2023 for the 2023-2024 period.The views of citizens and civil society representatives were included in the plan during the preparation process. Georgia established a Electronic Budget Transparency and Participation System) portal which citizens can monitor budget process and informations while they can participate the process. Georgia Audit Institute launched the Budget Monitor to enable citizens to contribute annual audit plan through sending requests or proposal etc. New Zealand publish nearly 75% of budgetary documents online proposed by OECD and receive publis hearings on pre-budget document. Right to Information Law No. 4982 has been published in the Official Gazette on 24 October 2003 in Türkiye. According to Law No.4982, the institutions shall provide the required information within 15 working days upon application (Article 11). Ministry of Treasury and Finance and Presidency of Strategy and Budget of Türkiye publish budgetary information and other datas related to public financial management online. Türkiye can promote fiscal transparency and public participation through enable citizens to access The e-budget platform via e-government allowing for interactive voting and discussions on budget drafts. The e-budget platform should help users meet necessities according to their professional level. Türkiye could implement pilot mechanisms for civic engagement at national budget processes through forums or online voting in addition to publishing budgetary informations and audit reports promtly.

Promoting fiscal transparency via open budget platforms have positive impact on democracy, citizen empowerment, human development, credibility, accountability, fiscal discipline, and good governance. Increased fiscal transparency also decreases corruption and waste of public resources. Citizens, civil society members, and governmental bodies should explore ways to better to build more transparent public financial management together in each country.

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Using smart solutions in delivering public services in Albania: issues and challenges

Marsida Ismaili[14], Valbona Sakollari[15]

Abstract

Albania began delivering public services through a digitalized system with the launch of the e-Albania portal in 2015. From then, 95% of public services are offered online for both citizens and businesses. The paper is focused on the transformation of public services' delivery and the re-engineering of administrative procedures and practices, taking advantage of smart solutions, as an opportunity to reduce the administrative burdens for both users and providers of public services, in each level of the government. The paper aims to highlight the most important achievements and challenges that the process faces, and to analyze the achieved level of the government goal of digital transformation, for improving public services' efficiency and accessibility for citizens and businesses. The research methodology is based in reviewing regulations, institutional procedures and documents, domestic and international reports, the analysis of latest business survey's data about the improvement of public digital services delivered to business, and by the use of semi-structured interviews, conducted by meeting directly with representatives of institutions and business community. The main finding is that the digitalization of public services has improved the accessibility of public services, by reducing paperwork and by saving money and time for citizens and businesses, even if there are still concerns regarding better accessibility, transparency, efficiency, and timely responsiveness, both in the central and local administration.

Keywords: digitalized system; e-governance, public service; smart solutions, public services' efficiency.

JEL Classification: D83, L38, O33.

1. Introduction

The transformation of public service delivery and the re-engineering of administrative procedures, driven by smart solutions, presents a vital opportunity for Albania to significantly reduce the administrative burdens, experienced by both users and providers of public services. This shift, taking place at both central and local government levels, aligns with the broader goals of public sector modernization, digital inclusion, and efficient governance. Historically, the delivery of public services in Albania, like in many other transitional economies, has been characterized by complex bureaucratic procedures, paper-based processes, and fragmented institutional responsibilities. Corruption of public administrators was another issue accompanying the procedures. Citizens often had to visit multiple offices, filling out redundant forms, and enduring long waiting periods to access basic services such as civil registration, business licensing, or social welfare. On the administrative side, public employees were delayed by time-consuming manual processes, inefficiencies in information sharing, and by a lack of real-time data access. The introduction of smart solutions, particularly digital technologies and platforms, is reshaping this landscape. Tools such as online portals, inter-operable databases, automated workflows, and artificial intelligence are not only modernizing the way services are delivered but are also fundamentally altering the underlying administrative architecture. A key example is the e-Albania portal, which offers more than 1,200 services online (AKSHI 2023). This platform enables citizens to access services at their convenience, without the need for physical presence, paperwork, or repeated data submissions. By re-engineering procedures to be digital-first, the government reduces duplication of efforts. For instance, the implementation of the "once-only" principle (where users provide their information only once, and then it is reused across different services) eliminates redundant form-filling and streamline interactions. The main aim is not only to enhance user satisfaction, but also to significantly cut down on resource use within the public administration. At the local level,

[14] Dr. Marsida Ismaili, University "Aleksandër Moisiu", Durrës, Faculty of Political Science and Law, Department of Political Science, marsidaismaili@uamd.edu.al
[15] Dr. Valbona Sakollari, University "Aleksandër Moisiu", Durrës, Faculty of Political Science and Law, Department of Public Administration, valbonasakollari@gmail.com

initiatives such as the development of 'One-Stop Shops' supported by the UNDP offer a citizen-centered approach to service delivery. These centers integrate multiple public services into a single physical and digital access point, simplifying processes and improving transparency. They also allow local administrations to respond more effectively to community needs, by collecting feedback and performance data in real time. From the perspective of public administrators, smart solutions offer substantial benefits. Digital platforms reduce the volume of manual data entry, improve internal coordination, and save staff time for more strategic tasks. Furthermore, analytics' tools can be used to monitor service performance and identify areas for improvement, making public service delivery more adaptive and responsive. Despite the advances, challenges remain, especially in ensuring that all citizens, including the elderly and rural areas inhabitants, have the digital literacy and the opportunity to access for benefiting from these services. It is very important that Albania continues to invest in inclusive infrastructure and digital education to avoid deepening the digital divide. The transformation of public service delivery through smart solutions in Albania provides a timely and effective means to reduce the administrative burdens on all stakeholders. By continuing to invest in technology and inclusive policy frameworks, Albania can build a more efficient, transparent, and citizen-centered public administration.

2. Literature review

The literature review provides a better understanding of Albania's digital transformation in public administration. It examines the theoretical underpinnings, global benchmarks, national strategies, institutional initiatives, and challenges associated with Albania's digital governance' journey.

Theoretical Framework: Smart Governance and E-Government

The concept of smart governance integrates information and communication technologies (ICT) to enhance public sector efficiency, transparency, and citizen engagement. According to Janssen and Estevez (2013) smart governance involves the use of ICT to improve the effectiveness and efficiency of government operations while enhancing democratic participation. Meijer and Bolívar (2016) contributed to show how smart governance encompasses the use of digital tools to bring up collaboration, innovation, and responsiveness in public administration. E-government, a key instrument of smart governance, refers to the utilization of digital platforms to deliver public services at the local and central level. The United Nations E-Government Survey (2022) highlights that e-government can lead to improved service delivery, increased transparency, and reduced corruption. However, successful e-government implementation requires not only technological infrastructure but also social acceptance and trust among the population (OECD, 2020).

Albania's digital transformation efforts are situated within a broader regional and global context. The OECD (2020) reports on digital government strategies, showing best practices in citizen-centric service delivery and interoperability. The UN E-Government Survey (2022) ranks countries based on their e-government development index (EGDI) and provides a comparative analysis of digital governance initiatives worldwide. In the European Union, the Digital Economy and Society Index (DESI) provides relevant metrics for Albania's digital maturity, especially as an EU candidate country. The EU's Digital Agenda emphasizes the importance of digital infrastructure, cybersecurity, and digital literacy in achieving successful e-government outcomes (European Commission, 2020).

The Digital Agenda of Albania 2022–2026 outlines the government's vision for digital governance, emphasizing the development of robust infrastructure, cutting-edge technology, and human capital (Digital Watch Observatory, 2022). Central to this transformation, is 'GovNet', a private, fiber-optic government network that connects over 250 public institutions, that supports the secure exchange of data and facilitates the services provided by the e-Albania portal (Digital Agenda of Albania, 2022). The Public Administration Reform Strategy (2022–2030) focuses on streamlining procedures, enhancing transparency, and improving service delivery through digital means. The strategy aligns with Albania's EU integration process, aiming to meet the standards set by the European Union for digital governance (European Commission, 2020).

Several institutions play pivotal roles in Albania's digital transformation. The Agency for the Delivery of Integrated Services (ADISA) established to facilitate and improve the experience of citizens in the provision and use of public services is one of them. ADISA is responsible for the establishment and administration of one-stop integrated public services' centers, which provide services at integrated counters for citizens (ADISA, 2022). The e-Albania portal serves as the central platform for accessing public services. According to the Digital Agenda of Albania 2022–2026, the portal hosts over 1,200 digital services, ranging from civil status certificates to business licensing. The portal aims to eliminate the need for physical document collection, saving time, reducing costs, and enhancing service delivery (Digital Watch Observatory, 2022). The United Nations Development Program (UNDP) has supported initiatives such as the Consolidation of Citizen-Centric Public Service Delivery in Albania (CSDA) project. This project focuses on strengthening access to public services and improving their quality and efficiency through citizen-centric innovation and the utilization of information technology (UNDP, 2022). The CSDA project has led to the establishment of one-stop shops in municipalities, providing integrated services to citizens and businesses. Comparing Albania's digital transformation efforts with those of the neighboring countries, provides valuable insights. According to the UN E-Government Survey (2022), countries in the Western Balkans have made varying degrees of progress in digital governance. Albania's efforts are commendable, but challenges such as digital literacy, infrastructure, and institutional capacity are shared by many countries in the region. According to official description of European Commission, the European Union's Digital Economy and Society Index (DESI) provides a comparative analysis of digital performance across EU member states and candidate countries (European Commission). While Albania has made progress, it lags behind some regional peers in areas such as digital public services and connectivity (European Commission, 2020).

3. Research Methodology

This research seeks to examine the transformation of public service delivery in Albania through the adoption of smart solutions, with a focus on identifying both the achievements and the challenges of this process. In order to address this objective, a qualitative methodology has been employed, supplemented with a limited quantitative analysis where applicable. This mixed approach enables us to obtain both an in-depth understanding of digital transformation from a policy and administrative perspective and empirical data on citizen usage and perceptions. The research adopts a qualitative case study approach, focusing on Albania as a single-country case. According to Yin (2018) a case study design is appropriate when the research involves complex social phenomena, especially where context and process are essential to understanding the outcome. Albania is an illustrative case of a post-communist, EU-candidate country undergoing rapid digital transformation in public administration. A descriptive-analytical approach is used to document the achievements of Albania's digital transformation and explore the associated challenges. Document analysis is a core component of this methodology. This includes a review of different sources. Government policy documents such as Digital Agenda of Albania 2022–2026 and Public Administration Reform Strategy 2022–2030; E-government development assessments that include UN E-Government Development Index (EGDI) reports (UN, 2022) and OECD Digital Government studies; Laws and directives, mostly focused in national data protection legislation; Project evaluations such as UNDP's Citizen-Centric Service Delivery in Albania (CSDA) reports; EU Directive 2016/2102 on web accessibility, media articles, Reports by Balkan Insight (2025). Document analysis follows the procedures recommended by Bowen (2009) including skimming, thorough reading, and interpreting the content for themes and patterns relevant to the research questions. Several limitations are acknowledged: The study focuses solely on Albania; findings may not be generalizable to other contexts. A full mixed-methods design with citizen surveys would have enriched the analysis. The limitations are mitigated through clear documentation of analytical steps. Qualitative methods are well-suited to explore complex, multifaceted policy reforms involving both technological and social

dimensions (Creswell & Poth, 2017).

4. Results and Discussion

Albania has made significant steps in the digitalization of public services in the last decade. The focus is to modernize and transform its public service delivery system, leveraging innovative and cutting-edge technologies. The main purpose is to enhance the efficiency, transparency, and accessibility of government services for citizens and businesses. Smart solutions in public service delivery involve the use of information and communication technologies (ICT) to streamline government processes, improving service accessibility, and ensuring that citizens can easily access government services online. These technologies include e-Government platforms, mobile applications, data analytics, cloud computing, AI, and blockchain. The adoption of smart solutions in Albania is primarily driven by the need to improve the public sector's responsiveness, by reducing inefficiencies.

4.1. E-Government Platforms

One of the most significant components for digital public service delivery, has been the implementation of e-Government platforms. The Albanian government launched the National Agency for Information Society (NAIS), which serves as the primary platform for delivering public services online (Tirana Times, 2025). Officially launched in 2013, the platform has grown from offering a limited number of services to becoming the single gateway for a wide range of administrative interactions between citizens, businesses, and the government. From March 2025, the e-Albania portal offers approximately 1,237 public services online (AKSHI, 2025). The portal is connected to the Government Interoperability Platform, a foundational architecture enabling the interaction among the 61 electronic systems of public institutions, automating administrative procedures and eliminating accompanying documents (EU, 2024). These services encompass various sectors, including health, education, employment, cadastral services, and business operations. Notably, all business registration services have been fully transitioned to the e-Albania platform, allowing businesses to complete applications, approvals, and notifications entirely online. The portal is managed by the National Agency for Information Society (AKSHI) and has registered nearly 3.2 million users. To access these services, citizens and businesses must register using their National Unique ID number. (BIRN, 2025). E-Albania is designed to be user-friendly and accessible. It features a clean and intuitive interface, with services categorized under sectors such as health, education, justice, social welfare, and business. The platform is accessible 24/7 and provides services in multiple languages, including Albanian and English, for both domestic and international users. Through the platform, citizens can access a range of government services for citizens and business. Users log in through their unique identifiers such as personal ID numbers and are authenticated using national e-ID cards or mobile e-signatures, guaranteeing secure user' authentication. After logging in, users access a personalized dashboard where they can track the status of their applications, receive notifications, and manage their data. Key online services for citizens are Personal and Family Documents (Personal Certificate, Family Certificate: Address Declaration), Education Services (Registration for 10th Grade, First Grade Registration, Process transfers between schools), Employment Services (Registration as Unemployed, registration of Employment, Application for Work and Residence Permit), Health and Social Protection (Blood Donation Reservation, Electronic Prescription, Vaccination, Testing Certificates), Contributions and Pensions (Retirement Pension Application, Contribution Payment Verification, Birth Grant Application), Judicial Services (Decriminalization Form, Criminal Record Certificate, Period Verification). Services dedicated to business are Business Activity Verification, Business Registration Application, Business Activity Exercise Request, Licenses and Permits (Construction Permit, Individual License, License Title Issuance). There is a large number of services directed to both, citizens and business, such as: Transport and Vehicles (Technical Control Reservation,

Driving License Verification, Vehicle Taxes); Real Estate Services (Property Certificate, Property Verification Application, Legalization Verification); Consular Services (Passport and Identity Card Services, Child Registration, Request verification of consular documents), Customs Services (Customs Declaration Status, Customs Payment Status), etc. The platform integrates databases from various ministries and institutions, facilitating real-time data exchange and verification, thereby eliminating the need for physical document submission. For paid services, the platform supports electronic payments and allows for the submission of digitally signed documents.

The introduction and expansion of e-Albania have brought multiple benefits to citizens, businesses, and the government like *efficiency and convenience*, by reducing the need for in-person visits to government offices; *transparency and accountability* by minimizing the risk of corruption, by reducing face-to-face interactions and, by ensuring traceability; *inclusivity and accessibility* since online service ensures that individuals in remote or underserved areas have equal access to public services. Additionally, people with disabilities benefit from digital services that do not require physical movement or waiting in long queues. Digitalizing administrative processes significantly cuts down on the use of paper, administrative personnel time, and physical infrastructure, that means *reducing costs for the government*. It also promotes data sharing across government agencies, thus improving decision-making and planning.

Despite its successes, the e-Albania platform faces several challenges that must be addressed to ensure its continued effectiveness and inclusivity. While the platform is accessible online, a portion of the population still lacks the necessary digital literacy or internet access to benefit from it. This *digital divide* disproportionately affects the elders, low-income families, and rural populations. When services involve multiple steps or agencies it creates difficulties in navigating the site. A significant number of users of the e-Albania portal turn to notaries or various agencies that offer assistance for applications, because of the unsuccessful efforts to apply by themselves. An important number of these applications are related to the real estate services, based on notaries declarations. Streamlining the user interface and providing multilingual, step-by-step guides, could help improve the overall *user experience.* Due to sensitive personal data that the digital platforms, not only e-Albania, elaborate, it is necessary the investment in robust *cybersecurity measures* and the conduction of regular audits to protect against breaches and data theft, that is paramount for the government. Although e-Albania is well-known in urban areas, there is a need for more comprehensive *awareness campaigns* to inform all citizens, especially in rural areas, about the available services and how to access them.

4.2.Digital Identity System

Another milestone in Albania's transformation has been the introduction of a national digital identity system. This system allows citizens to securely authenticate themselves online when interacting with government services. Digital IDs ensure a more streamlined process for accessing public services and have significantly reduced the possibility of identity theft and fraud (UNDP, 2023). Digital identity systems are a critical foundation for modern governance, enabling citizens to access a wide range of public services online. The core of this transformation is the digital identity (e-ID), which acts as a secure gateway for Albanian citizens to interact with government services. Digital Identity System reached significant achievements and increased benefits, as the process related to the launch and expansion of the e-Albania platform through uses of digital identity credentials to authenticate users, allowed citizens to access services such as:

a) *Civil registry documents*, social insurance statements, business registration, tax services, and education records;

b) *Introduction of Biometric ID Cards and e-Passports* in 2009. These documents contain embedded chips that store personal and biometric data, such as fingerprints and digital signatures, which are essential components of a secure digital identity system (European Union Agency for Fundamental Rights (FRA, 2021). This infrastructure laid the groundwork for secure authentication in digital environments. These e-IDs allow for both physical identification and digital interactions,

serving as a bridge between offline and online governance. Citizens can use their ID cards to log into the e-Albania portal, verify their identity, and complete administrative processes remotely.

c) *Reducing corruption and increasing transparency*: traditional administrative processes were often characterized by inefficiencies and opportunities for bribery (Transparency International, 2022). Now, citizens can apply for services online, track the status of the applications, and receive notifications, thereby increasing transparency and reducing discretion of the individual public officials. Digitalization of public services reduces in-person interactions.

d) *Digital signature* in public services has further enhanced the security and legal validity of online transactions. Albania's legal framework recognizes digital signatures as equivalent to handwritten ones, enabling fully digital administrative processes. Additionally, the government has worked toward interoperability across public institutions, allowing data to be shared securely and automatically between systems, which improves efficiency and reduces the administrative burden on citizens (AKSHI, 2023).

Despite the considerable progress, the digital identity system in Albania faces several key challenges, mostly related to:

a) *Digital divide and limited access*, especially in rural areas and among the elderly. A significant portion of the population still lacks access to digital infrastructure, or the skills needed to use online services effectively (World Banks, 2020). They can apply to ADISA (Agency for the Delivery of Public Services) for assistance or call customer service (toll-free). However, internet access and computers abilities are needed. This digital divide threatens to exclude vulnerable populations from essential public services or to direct them to notaries and agencies that offer to apply for them, against payment, adding significantly the costs for the citizens;

b) *Cybersecurity risks and data protection*: with the expansion of digital services, cybersecurity has become a pressing issue. In July 2022, Albania suffered a major cyber-attack that disrupted government services and highlighted vulnerabilities in national digital infrastructure. The attack, was attributed to foreign state actors, and exposed personal data and forced the government to temporarily shut down digital platforms (BBC News, 2022).

c) As government agencies collect and process large amounts of personal data, *public concern over privacy* has grown. While Albania has adopted data protection legislation in line with the EU's General Data Protection Regulation (GDPR), implementation and enforcement remain weak. Albanian government systems were hit twice in 2022 (July and September) by large-scale cyber-attacks, which led to the temporary disruption of most online public services. An FBI-aided investigation pointed the finger of blame at Iranian hackers, saying they had accessed the Albanian system 14 months earlier (BBC News, 2022).

d) Efficient delivery of digital services depends on *coordination among various government institutions*. In Albania, limited technical staff and bureaucratic inertia can impede the smooth operation of digital identity systems (UNDP, 2023). Further challenges arise from inconsistent digital transformation across local government units. Some municipalities lag behind in integrating with national platforms or in training staff in digital service delivery, which leads to fragmented service quality across regions.

e) Although important progress is done in establishing a legal framework for e-Government and digital identity, several *legal and regulatory gaps* persist. For instance, some regulations governing electronic documents and signatures are outdated or inconsistently applied (European Commission, 2022). Moreover, legislation must evolve to keep pace with technological changes, such as blockchain-based IDs or biometric innovations. A dynamic and adaptive legal environment is necessary to support the ongoing development of digital identity systems.

4.3. Mobile Applications

As the possession of smartphones increases across the country, the government has leveraged mobile applications to bridge the gap between institutions and citizens. Several mobile applications are developed to bring government services closer to the citizens. These applications provide users

with instant access to a wide array of services, from traffic-related information to social welfare benefits. Moreover, mobile apps have improved the flow of communication between the government and the public. Citizens are now able to track the status of their applications in real-time, providing for a level of transparency that was previously unavailable.

The e-Albania portal, initially launched as a web platform, now has a fully functional mobile version available on both Android and iOS. The *e-Albania mobile app* allows citizens to access over 1,200 public services, including civil documents, tax declarations, healthcare information, and education services (AKSHI, 2023). The convenience of mobile access has significantly increased usage, especially among younger populations. According to the National Agency for Information Society (AKSHI) over 1.5 million citizens accessed e-Albania services via mobile in 2023, representing a sharp increase in mobile digital service consumption compared to previous years. The government has introduced *mobile authentication features*, such as Mobile ID and Mobile Signature, to enhance secure access to services. These tools allow users to verify their identity and sign documents directly from their smartphones without needing physical ID card readers (eIDAS, 2023). This is especially useful in remote or underserved areas where access to infrastructure is limited. In addition to e-Albania, several government institutions have launched sector-specific mobile apps, including: *e-Tax*: allows businesses and individuals to manage tax filings, receive alerts, and track payments; *Shëndet+:* a health app developed by the Ministry of Health to provide citizens with COVID-19 updates, vaccination booking, and medical appointments; *Open Data Albania*: provides access to open government data on expenditures, procurement, and public contracts. These applications contribute to transparency increase, by empowering users to make informed decisions, and by reducing the need for physical presence at government offices. Mobile applications have significantly reduced time and costs for both the government and the public. According to the World Bank (2020) Albania's digital public services have saved thousands of hours in administrative processing time, thanks in part to mobile adoption. In a 2023 report by UNDP Albania, it was estimated that using mobile applications for routine services—like requesting birth certificates or paying fines—has cut processing time by up to 80%. Despite the significant progress, several barriers hinder the full potential of mobile applications in public service delivery in Albania. Many citizens, particularly the elderly, those in remote rural areas, and the marginalized communities, lack the skills or tools to use mobile apps effectively. While mobile access is easier than desktop platforms, digital literacy and affordability of mobile data remain as issues (World Bank, 2020). According to a 2023 study by the Institute for Development Research and Alternatives (IDRA) 28% of rural Albanians still rely on third parties (relatives or clerks) to access public services digitally. The growing use of mobile platforms for sensitive tasks—such as tax filing, healthcare management, and identity verification—raises concerns over cybersecurity and data privacy. The 2022 cyberattack on Albania's national systems exposed vulnerabilities in digital infrastructure (BBC News, 2022). Although mobile apps are more secure than before, many users still distrust these systems. Moreover, Albania's data protection framework, while aligned with the EU's GDPR in principle, is still weak in enforcement, particularly concerning mobile data processing and app permissions (IDP, 2023). Another handicap is the limited interoperability between applications. Many mobile applications developed by various ministries operate independently, with limited integration and data exchange. For example, the health and education sectors use separate systems that do not seamlessly communicate with the central e-Albania app. This lack of interoperability can result in inefficiencies and duplication of data (European Commission, 2022). A more unified mobile government strategy is needed to enhance user experience and streamline service delivery. Despite improvements, many public mobile apps in Albania suffer from technical bugs, poor user interface design, or inconsistent updates. Citizens frequently report crashes, slow response times, and incomplete service information (UNDP, 2023). These usability issues diminish trust and hinder adoption. Moreover, mobile apps rarely offer multi-language support beyond Albanian, creating barriers for minorities or foreign residents. While many apps offer services, few incorporate mechanisms for user feedback, complaint resolution, or service

evaluation. This lack of transparency prevents citizens from holding public institutions accountable and limits opportunities for continuous improvement. Only a handful of apps, such as e-Albania, have integrated feedback sections. Expanding this feature across all mobile public services would improve responsiveness and user satisfaction.

5. Conclusion

Albania's transformation of public service delivery through smart solutions is an important milestone for public administration' reform and digital governance agenda. The adoption of digital platforms—particularly the e-Albania portal—has enabled the government to provide over 1,200 public services online, serving both citizens and businesses with improved efficiency, transparency, and accessibility. Complemented by initiatives such as the national digital identity system, mobile applications, and the interoperability of institutional databases, these reforms have substantially reduced administrative burdens and in-person interactions, while promoting service standardization and responsiveness.

The achievements are significant, underlining that digital public services have saved time and resources, reduced opportunities for corruption, and improved the transparency of government operations. Citizens can now access a wide range of essential services remotely, track applications, and communicate with institutions more efficiently. Businesses also benefit from streamlined licensing, registration, and compliance processes. These advancements demonstrate Albania's commitment to aligning with European standards in digital governance and improving the overall user experience in public service delivery.

Nevertheless, challenges persist. A significant digital divide still affects rural communities, older citizens, and marginalized groups, many of whom lack internet access, digital skills, or the means to fully utilize online services. Furthermore, cybersecurity vulnerabilities—as highlighted by major cyberattacks in 2022—underscore the urgent need for resilient digital infrastructure and stronger data protection practices. Mobile apps, while increasing access, often suffer from poor usability, limited integration, and insufficient multilingual or accessibility features. Institutional coordination remains uneven, especially at the local level, where some municipalities lag behind in digitization efforts.

To sustain momentum, Albania must invest in digital literacy programs, inclusive infrastructure, and a more adaptive legal framework that keeps pace with emerging technologies. Strengthening interoperability between platforms and enhancing citizen feedback mechanisms will also be crucial to building trust and ensuring continuous service improvement.

In conclusion, Albania has made substantial progress in modernizing public service delivery through smart solutions. While the foundations for a more efficient, transparent, and citizen-focused administration have been laid, addressing ongoing challenges will be the key to ensuring that digital transformation truly benefits all segments of society.

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A Structural Analysis on Emigration as a Transformative Factor in the Albanian Labor Market. Literature Review.

Dr. Klaudja Guga (Corresponding author)[16]

Abstract
In recent years, the Albanian labor market has experienced significant structural transformations, mainly caused by the massive emigration of young people and skilled labor force. The aim of this paper is to analyze the impact of emigration on labor supply and demand, with the focus on the gap created for labor force in strategic sectors of the economy, the loss of human capital in the labor market and the impact of this loss on long-term economic growth and sustainable economic development, as well as on how emigration affects the reorganization of the labor force, and the consequences of emigration of skilled labor force. Through this paper, the aim is to investigate how emigration affects demographic changes in Albania, what effects it brings on wage structures, productivity and the unemployment rate. The paper will rely on secondary empirical data, mainly on official sources such as INSTAT and reports of international institutions, as well as on contemporary academic literature, to provide an accurate picture of the transformation of the labor market in Albania. The paper also relies on existing literature analysis to identify the public policies necessary for economic growth and sustainable development in facing the structural challenges of the labor market in Albania. The results provide a contribution to the debate on sustainable economic development and effective policies for reducing emigration, mitigating the negative effects of emigration, encouraging brain gain in Albania, and adapting the labor market to the challenges it is facing in terms of demographic changes. It also contributes to the scientific and institutional debate on the challenges and opportunities of this phenomenon, while inviting further research for an empirical approach.

Keywords: Emigration; human capital; labor market; labor shortage; economic development, public employment policies.

JEL Classification: E02, O15, J61

1. Introduction

The labor market in Albania has experienced major structural challenges in recent years. These challenges have been mainly influenced by mass emigration, especially of young people and qualified professionals. Emigration has significantly reduced the labor supply, leading to the loss of human capital, and having an indisputable impact on the country's sustainable economic growth (Gëdeshi & King, 2019). Albanian scientific experts who have emigrated are characterized by high mobility and a lack of willingness to return. In this context, the non-return of the brain weakens the country's development opportunities in strategic sectors, especially education and health.

Studies show that only 2.7 million Albanian citizens currently live in the country out of about 4 million in total with an Albanian passport, making Albania one of the countries with the highest level of net migration in Europe, which directly affects the labor market (Kacani et al. 2025).

Demographic impacts are also very emphasized. The contributor-pensioner ratio has deteriorated significantly, from 4:1 in 1990 to 1.5:1 in 2019, and projections predict a further deterioration by 2030 (Avdulaj & Muço, 2021). This increases the pressure on the pension system.

If we were to compare the economic emigration of the first years of transition with the current emigration, the latter is mainly dominated by the departure of young professionals and students. A significant part of Albanian students who study abroad do not plan to return immediately after

[16] Docent Dr., University of Vlora "Ismail Qemali", Faculty of Economy, Department of Economics, klaudja.guga@univlora.edu.al

graduation. They plan to build their careers in the countries where they are studying, further deepening the long-term flow of human capital (King & Gëdeshi 2023).

This paper aims to analyze the impact of emigration on the labor market in Albania, focusing on the implications for labor supply and demand, the loss of human capital, especially skilled capital, the economic and demographic consequences stemming from this process, the effects on the wage structure, on productivity levels, on unemployment rates, and public policies to mitigate the negative effects of emigration and promote brain gain.

This paper aims to contribute to the literature on sustainable development in Albania, as one of the countries in transition, by considering emigration as a structural factor and to propose recommendations for a more effective management of human capital.

2. Methodology

This paper combines statistical analysis, official reports from domestic and foreign institutions, theoretical analysis and review of existing literature to understand the impact of emigration on the labor market in Albania.

The data used are secondary data obtained from reliable national and international sources. INSTAT and the World Bank provide the main source of data on emigration, demographic structure and labor market. The analysis is complemented by a review of existing high-quality academic studies related to this field of study, as well as by the use and review of secondary data from other official sources such as the Bank of Albania, Eurostat and IOM.

The analysis is carried out through four main pillars: (1) the loss of human capital and the impact on the public and private sectors; (2) analysis of the demographic effects of emigration on the labor market and the contributor-pensioner ratio, on labor demand and labor supply, etc.; (3) assessments of the links between emigration, wage structure, productivity, and sustainable economic development; and (4) interpreting public policies, based on existing practices to mitigate negative effects and promote brain gain.

However, the study faces several limitations. The study does not include primary data, but is dependent on secondary data, having no direct contact with the key actors on whom this paper focuses, and the methodology used may not fully reflect regional phenomena. However, the methodology we used provides a solid basis for the analysis of the paper and drawing conclusions and also for giving recommendations on possible policies based on the evidence found.

3. Loss of Human Capital and the Impact on the Public and Private Sector.

The phenomenon of emigration in Albania, especially led in recent years by the departure of qualified and young workers, has had long-term effects on the socio-economic development of the country. One of the most serious consequences is the loss of human capital, which is related to the reduction in the stock of knowledge, professional experience and intellectual skills, that are extremely necessary for the proper functioning of public institutions and the competitiveness of the private sector. In Albania, the trend of "brain drain" has worsened over the last decade. More and more doctors, engineers, teachers and technology professionals continue to emigrate toward the markets of developed economies such as Germany, Italy or the United Kingdom. This loss of human capital, the most productive part of the workforce, is significantly negatively affecting the capacity for economic growth, the quality and efficiency of public services, as well as the ability of the private sector to fulfill its profit-maximizing goal.

The study by Avdulaj & Muço (2021) highlights that, in Albania, the departure of professionals is no longer an individual phenomenon but a long-term structural challenge. According to the World Bank, reports on developing countries show that while Albania has only 13% of the population with

higher education, 45% of them have emigrated. In this way, human capital is not only lost, but is also replaced with difficulty, given the absence of quality investments in education and adequate professional training of the workforce.

Figure 1. shows the fact that emigration from Albania is still consistent in high level statistics.

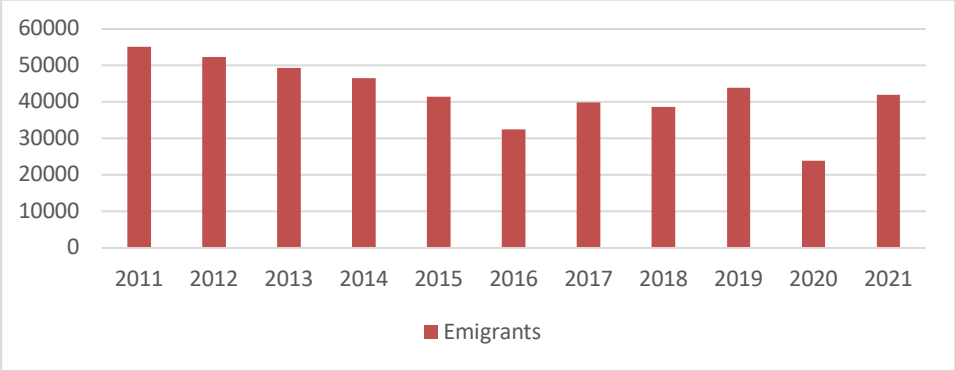

Figure 1. Number of emigrants from Albania, 2011-2021

Source: INSTAT

In 2021, was recorded a historic increase, showing clearly that emigration remains a deep-rooted challenge for the country.

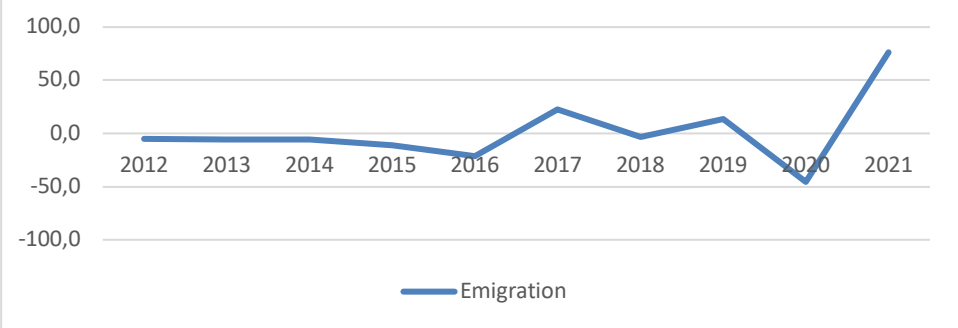

Figure 2. % change in the number of emigrants, 2012-2021

Source: INSTAT

On the other hand, the following chart highlights a deepening demographic problem in Albania. It makes evident a decline in birth rates, combined with a shortage of resident children and continuous emigration which directly affects the structure of the young population and causes long-term consequences for the labor force, the education system, and the socio-economic development of the country.

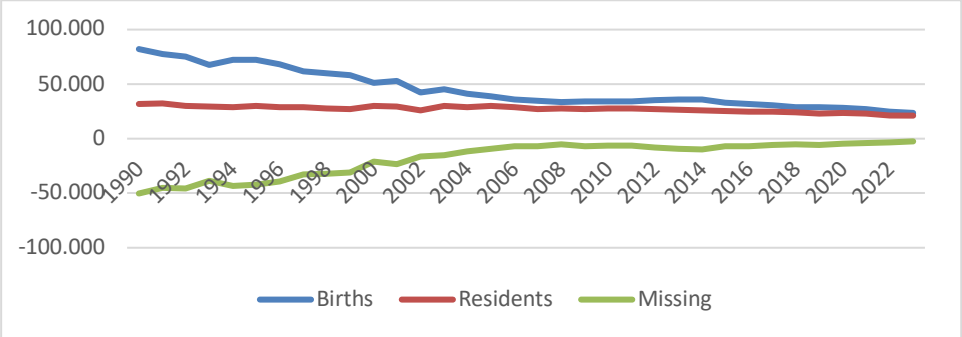

Figure 3: Births, resident population and the difference

Source: INSTAT Census, 2023

3.1 Human capital theory and the "brain drain" phenomenon

The theory of human capital constitutes an important part of the economic literature for analyzing the dynamics of the labor market and economic development. One of the founders of this theory, Gary Becker (1964), concludes that human capital consists of a set of knowledge, skills, education and experiences of individuals, a set that contributes to the level of productivity and the overall efficiency of the economy. Using this concept in the context of developing countries, such as Albania, we judge that investment in education and vocational training constitutes the form by which structural economic obstacles can be overcome.

The phenomenon of emigration of professionals, educated, qualified, known as "brain drain", constitutes a serious challenge for countries suffering from a lack of human capital. We would be dealing with a net loss of human capital if the positive impacts of emigration, such as remittances, emigrant connections, or knowledge transfer, were not enough to compensate for the damage caused by the departure of skilled labor (Docquier & Rapoport 2012), especially in countries with limited human capital such as Albania.

According to some studies, in the Albanian case, the brain drain phenomenon is mainly concentrated toward the developed OECD countries, and the reason for the non-acceptance of most of them to return to their homeland is related to a series of institutional factors such as the lack of scientific research infrastructure, the inability to advance in an academic career with fair competition, corruption, and the lack of meritocracy in Albanian institutions (Gëdeshi & King 2019). The lack of decent and competitive wages, lack of trust in public institutions (King & Gëdeshi 2023), social and psychological perceptions such as a sense of lack of perspective, are also key factors that hinder return, and make emigration seen as the solution for young people and professionals. This presents an important challenge for public policies to create the conditions to encourage emigrants to return to their homeland and to curb the brain drain.

Not only large cities or elite professions feel the impacts of the emigration phenomenon, but also rural areas and traditional sectors. Emigration from rural areas has negatively affected agricultural production and worsened the demographic structure (McCarthy et al., 2009), highlighting cycles of inequality and poverty.

The emigration of professionals and young people not only harms current productivity, but also the long-term potential for development and innovation. The costs of training new generations to replace the departed professionals are high, and Albania generally lacks the institutional capacity to effectively bear these costs.

3.2 Impact on the public sector

The emigration of skilled labor has caused critical shortages, especially in the health and education sectors, where the reports of World Bank (2023, 2024) highlight an alarming loss of qualified doctors, nurses, and teachers. This situation becomes even more worrying in peripheral areas, where staff shortages caused by emigration cannot be easily replaced due to the lack of economic incentives and basic infrastructure.

The lack of professionals, by lowering the quality of public services, increases inequalities in access to health care and education. The OECD report (2021) emphasizes that the lack of trained personnel has contributed to the weakening of public institutions and the slowdown of reforms in public administration, due to the departure of staff with experience and managerial skills.

The loss of human capital in the public sector also includes consequences such as deteriorating institutional performance, decreasing citizen trust in the public sector, and making it increasingly difficult to provide basic public services (Tataj & Akbaş, 2021). All of this reinforces the cycle of emigration, as the dissatisfaction of citizens still living in Albania makes them more inclined to emigrate.

3.3 Impact on the private sector

The private sector also directly feels the consequences of the lack of human capital. This shortage is particularly pronounced in industries that require specialized technical skills. We can mention sectors such as information technology, construction, financial services and industrial production, where Albanian businesses experience a lack of qualified staff, forcing them to reduce production capacities or invest in training new employees, which are often associated with high costs and short-term solutions.

The lack of labor has reduced the competitiveness of Albanian enterprises, and has also increased dependence on foreign experts (OECD 2024). There have been many cases where firms have preferred to invest outside Albania, in countries where the security of human resources is more stable.

The lack of experienced experts in management, marketing, finance and technology also makes it difficult to use and adapt to new development models, presenting a situation of stagnation in the growth of enterprises, which makes innovation, development and integration into global markets impossible (Kacani et al. 2025).

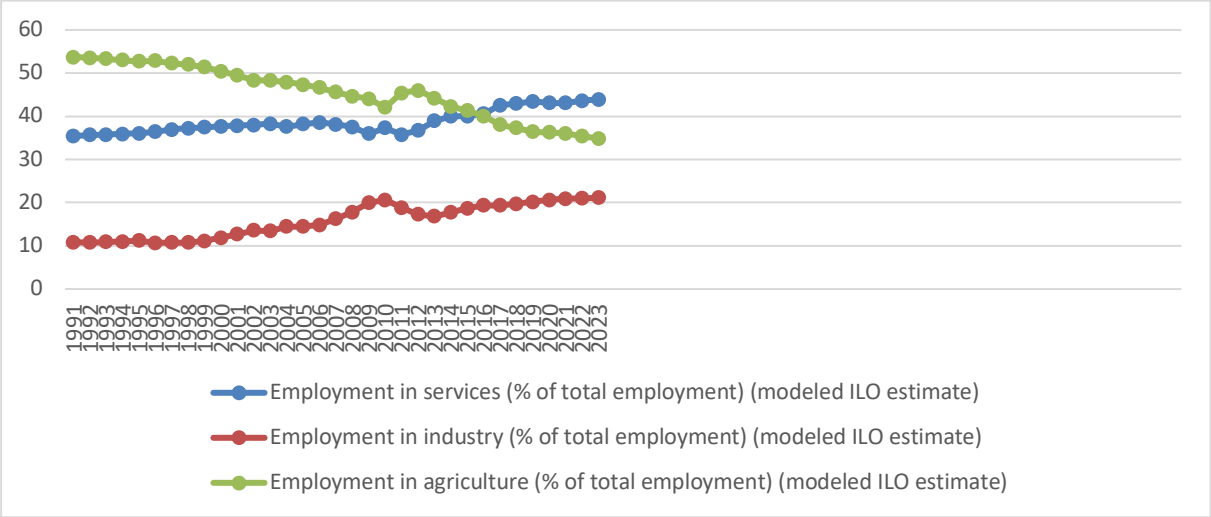

Figure 4: Employment in Albania, 1991 – 2023.
Source: World Bank, https://data.worldbank.org/indicator

4. Albanian emigration and analysis of its demographic and structural effects on the labor market

4.1 Trends and composition of Albanian emigration

Albanian emigration has been going on since the early 1990s. It has evolved dynamically in several phases. In its beginnings, it marked one of the most massive exodus in the Balkan region (King & Gëdeshi, 2023), and was mainly a forced emigration for economic and political reasons, to survive after the collapse of the communist system. A characteristic of this exodus was that it consisted of the emigration of unskilled labor, mainly to Italy and Greece.

However, the last decade has been characterized by an emigration of qualified and highly educated individuals. About 59% of the Albanian population lives abroad, illustrated by Figure 5, where a significant part of emigrants belong to highly educated and qualified individuals (ETF & wiiw 2021). About 40% of emigrants have higher education, and by 2024 about 13% of Albanian medical staff emigrated, and this figure significantly exceeds the number of graduates in this field during this time (World Bank, 2022–2024).

Meanwhile, based on World Bank data, the following chart illustrates the volatility of net migration in the case of Albania over the years.

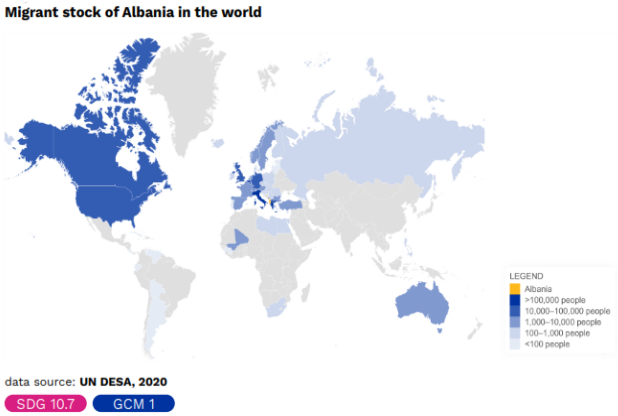

Figure 5: Migrant stock of Albania in the world

Source: IOM UN Migration in collaboration with World Data Lab. Migration Data Platform for Evidence-Based Regional Development (M-Powerd), In South-Eastern, Eastern Europe and Central Asia (Seeeca), Region of Albania.

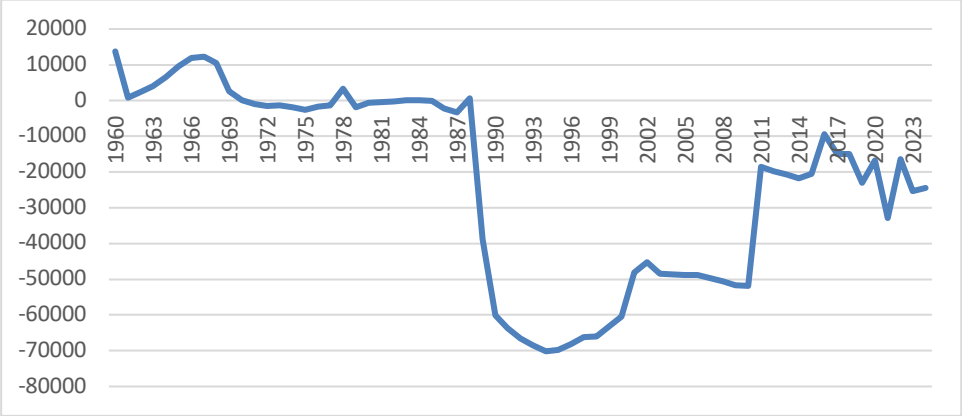

Figure 6: Albania Net Migration

Source: World Bank, https://data.worldbank.org/indicator/SM.POP.NETM?view=chart&locations=AL

The Migration Data Platform for Evidence-Based Regional Development (IOM) reports gender-based migration trends for the Region of Albania, as shown in Figure 7:

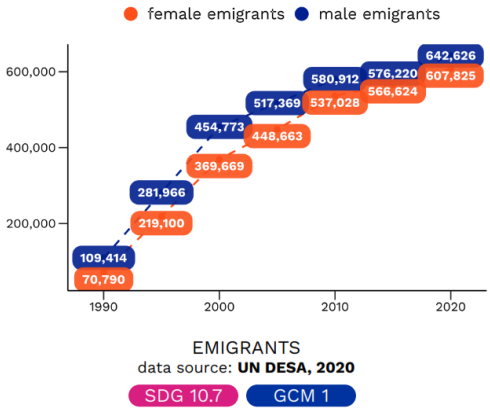

Figure 7: Emigrants by gender, from the Region of Albania

Source: IOM UN Migration in collaboration with World Data Lab. Migration Data Platform for Evidence-Based Regional Development (M-Powerd), In South-Eastern, Eastern Europe and Central Asia (Seeeca), Region of Albania.

4.2 The Impact of Emigration on Structural Changes in the Labor Market

The labor market in countries like Albania is significantly affected by emigration, as it has its effects on labor supply and demand, on the wage structure, and on demographic dynamics. Studies in this field show that Albanian emigration has brought significant changes to the labor market, with corresponding consequences in different sectors of the economy as well as in the composition of the labor force (Figure 8).

Certainly, one of the most concrete consequences of emigration is the reduction of the labor force, especially among young age groups and qualified professionals. In Albania, this has caused a significant loss of human capital (Docquier & Rapoport, 2012; Avdulaj & Muço, 2021). Despite the fact that emigration helps reduce the unemployment rate, it has long-term impacts on the labor market by worsening the demographic structure and reducing its capacity to develop.

Emigration has been one of the main factors that has influenced the shift in the sectoral structure of the labor market. The traditional agricultural and construction sectors are already suffering from a deep loss of labor force (Figure 9). Employees in these sectors are among the main ones who have chosen to emigrate, for reasons mainly related to low wages, difficult working conditions and lack of professional development (Kacani et al. 2025).

Other sectors, such as services, information technology and logistics, have been able to attract more young people who chose to emigrate. But these shifts have not always been in line with the country's economic development policies.

Also, the loss of professionals and qualified individuals in key sectors of the economy has a direct impact on slowing innovation and reducing productivity, and this leads to a slowdown in the country's economic development.

The reduction in labor supply in the public and private sectors has slowed wage growth, also due to the low level of training (Tataj & Akbaş, 2021), making the economic conditions of employees more difficult.

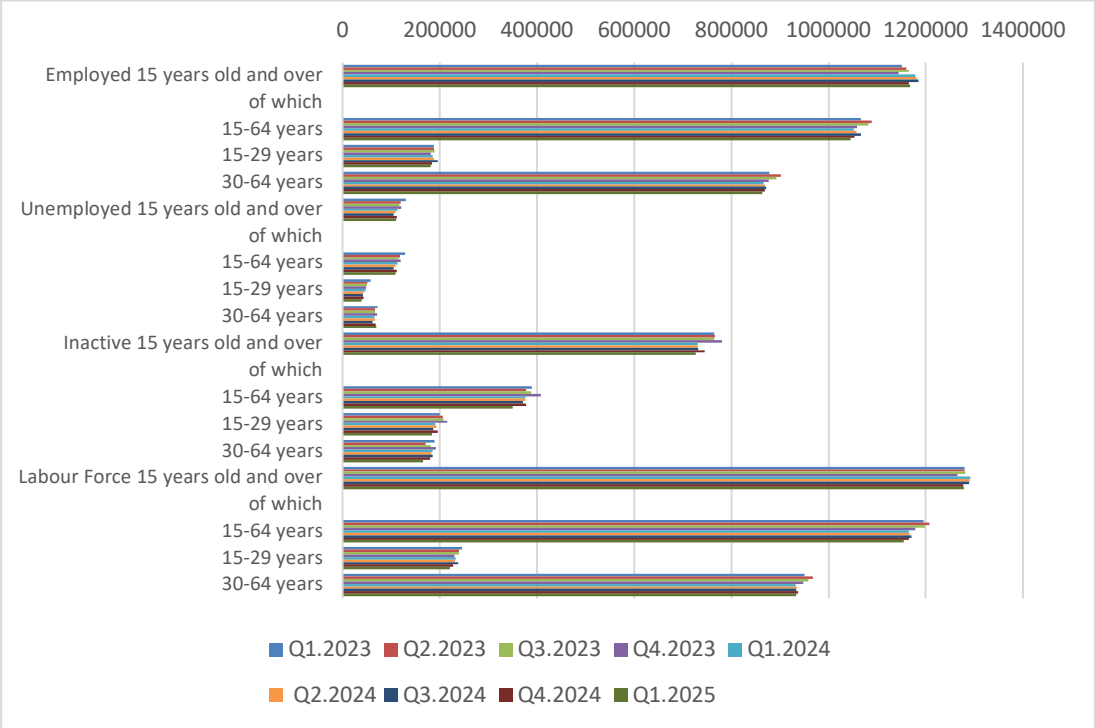

Figure 8: Labour market indicators estimated based on the Quarterly Labour Force Survey, Q.1/23-Q.1/25

Source: INSTAT

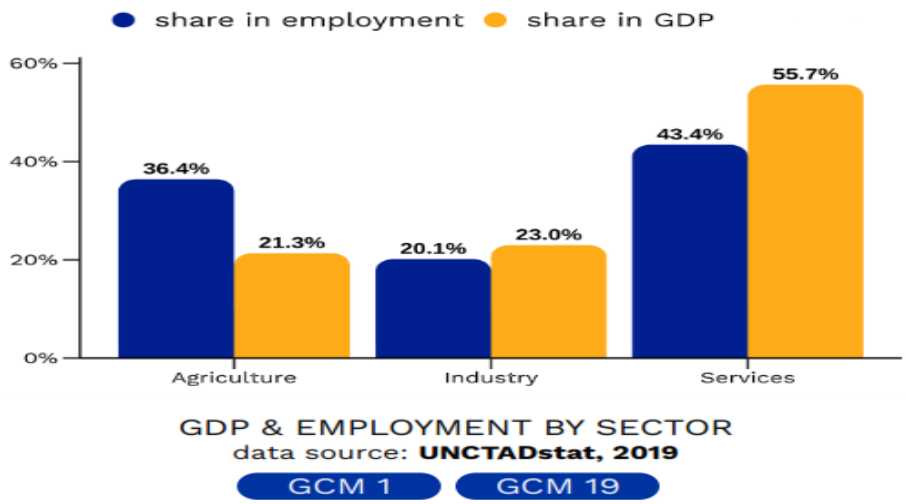

Figure 9: GDP & Employment by Sector, in Albania, 2019
Source: IOM UN Migration in collaboration with World Data Lab. Migration Data Platform for Evidence-Based Regional Development (M-Powerd), In South-Eastern, Eastern Europe and Central Asia (Seeeca), Region of Albania.

However, if the return of emigrants is encouraged, it can be associated with obvious benefits for both the labor market and the economy in general. Domestic and foreign studies, as well as World Bank analysis, show that the return of emigrants increases the employment rate of the unemployed and their real wages, promoting tangible economic growth (Monitor Magazine, 2022; World Bank, 2022). The brain gain and investments that emigrants can make in their home country from their emigration savings are likely to mitigate the negative effects of emigration.

4.2.1 The Impact of Emigration on Job Supply

Emigration affects the labor supply directly, as it reduces the available labor force, especially the labor supply of young people and those with higher education. Albania results with the highest level of emigration of young and educated people among the Western Balkan countries, creating human capital shortages in important sectors such as health, education and information technology (World Bank 2023). This reduction is particularly noticeable in rural areas and those with limited economic development, where both internal and international migration occur in parallel, and individuals facing chronic unemployment or unfavorable employment conditions find emigration as a solution to improve their family economic situation (King & Vullnetari, 2006). As a result, a demographic structural shift in the labor market towards an older and less skilled population is taking place, negatively impacting productivity and slowing down technological improvements in many sectors (Docquier & Rapoport, 2012).

The outflow of the active labor force also reduces the elasticity of the labor market, putting pressure on those sectors that require specific skills. The additional burden on the remaining workers is another important effect. Often, the latter have to compensate for the shortage of labor by working extra hours or by performing rapid specializations, reducing the quality of services. This fact becomes even more evident in professions or categories that cannot be easily replaced by rapid training and specializations or inexperienced workers, as they require skills acquired over a long period of time. This increases gaps in labor supply and makes it difficult to maintain equilibrium in the market.

4.2.2 The Impact of Emigration on Labor Demand

Emigration also affects the demand for labor. It exerts its influence on this side of the labor market through various economic and social mechanisms. Specifically, youth emigration affects the fluctuations of consumption, investment, and aggregate demand, as it changes the family structure and the direction of capital investment in the economy.

One of the most important mechanisms that affects the demand for labor is through remittances. Albania has a high level of remittances in relation to GDP, stimulating demand for goods and services in the local market. This increase induces a positive effect in sectors such as construction, retail trade, and tourism, although the growth is often not sustainable (Czaika & de Haas, 2014).

A long-term emigration also negatively affects the demand for labor, and this effect is felt especially in the public sector, because the overall population size decreases. The decline in population means a decrease in the number of consumers, a decrease in the number of economically active individuals, a decrease in the number of students, and so on, which leads to a decrease in the demand for public services, especially in those areas that have been most affected by emigration (King & Gëdeshi, 2023). Mass emigration in Albania has reduced the demand for goods and services, slowing down economic activity and reducing the need for employment in some sectors (World Bank, 2022).

Another mechanism operates through a change in the structure of entrepreneurial capital. Migrants who return to their country bring with them savings accumulated during emigration, as well as professional work experience accumulated in foreign labor markets, which they put to use in the creation of their own small businesses and startups in their country, thus increasing self-employment, especially evident in sectors such as agritourism, artisanal production, and service technologies (IOM, 2020). All this increases the demand for work locally, but is not always accompanied by institutional support.

Emigration has also reduced the demand for work in the formal sector, due to the reduction in the number of consumers and investments (ETF and wiiw 2021). The situation is different in the informal sector, where the demand for labor does not result in a decline, as businesses increase the informality of the labor market by continuing to seek employees with lower wages (Tataj & Akbaş, 2021).

It is evident that there is a decrease in the pressure for wage increases, due to the departure of qualified labor, especially in sectors with specific job skills requirements. The lack of professionals reduces competition in the labor market, for this reason wage growth is slowed down, creating a chain effect that reduces the motivation to offer quality work (King & Gëdeshi 2023).

The structure of demand has also changed due to emigration, as the main focus is now on the services and technology sectors and no longer on agriculture and industry (Kacani et al. 2025). But the lack of skilled labor creates a gap between real demand and supply in these sectors.

So, in summary of the above analysis, the impact of emigration on labor demand is twofold: it increases labor demand through remittances and the consumption induced by them, and on the other hand it decreases it due to the decline in population and aggregate demand. This situation requires careful policies and analysis to support long-term development.

The World Bank (2022) predicts that, taking into account current emigration rates, labor demand will continue to be reduced in some sectors of the Albanian economy, with negative impacts on economic growth in the medium and long term.

4.3 Other Demographic and Structural Effects of Emigration on the Labor Market in Albania

Emigration has been a determining factor in major socio-economic developments in Albania over the past three decades. This phenomenon has affected the size of the population, transformed its demographic composition, educational structure, geographical distribution of the workforce and the very character of the labor market. The changes brought by emigration produce long-term and structural effects on the country's development.

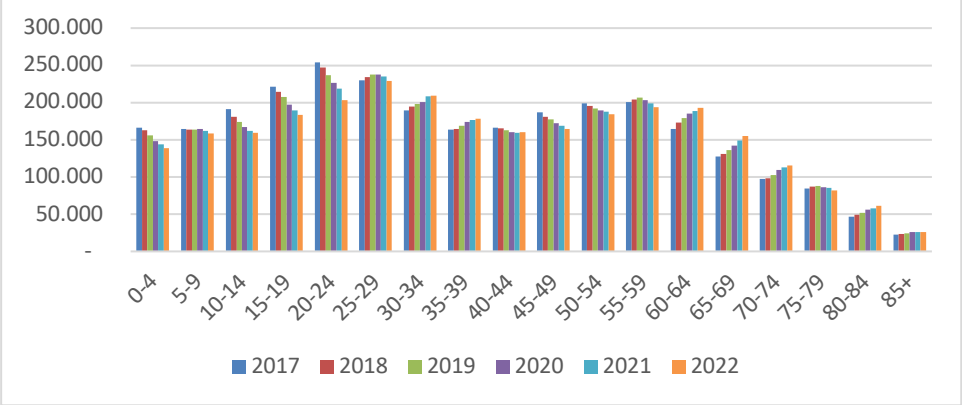

Figure 10: Population by age group over the years (January), 2017-2022

Source: INSTAT

4.3.1 Aging of the Active Population

Emigration in Albania has accelerated the process of population aging. INSTAT and the World Bank (2023) indicate that in the last two decades, more than 15% of its resident population has left Albania, especially young people and people of working age (15-44 years old). This has caused Albania to experience a structural age shift, making it one of the countries most affected by demographic aging (Figure 10, 11) in the region.

The ratio of old-age dependency to working-age dependency has increased significantly. This has increased the burden on pension and health care systems. The pace of decline in the labor force participation rate (Figure 12) is increasingly slowing. This is accompanied by an increase in beneficiaries of insurance schemes, making the social security system increasingly less sustainable (OECD 2021).

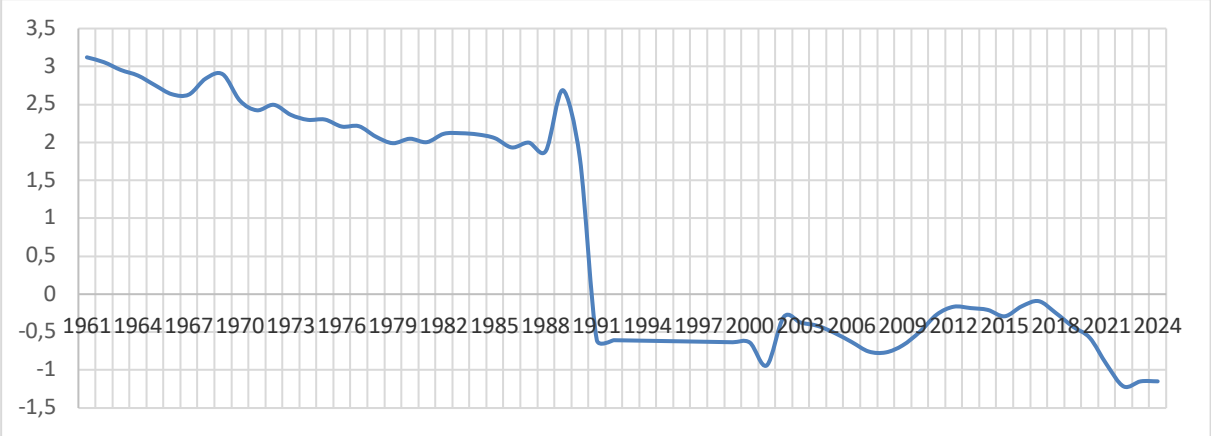

Figure 11: Albania Population Growth (annual %)

Source: World Bank, https://data.worldbank.org/indicator

4.3.2 Possible Financial Deterioration in the Pension System and Social Services

Demographic changes in recent years, related to the increase in the average age of the population and the decline in fertility, increase the pressure on pension and social service systems. The lack of contributions from young people who have chosen to emigrate and the increasing number of beneficiaries who remain in the country, are leading to a potential financial deterioration of the pension system (Avdulaj & Muço 2021).

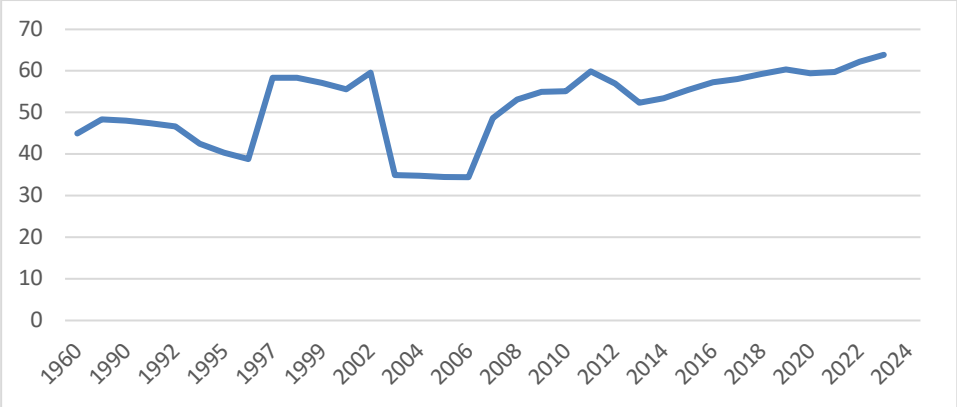

Figure 12: Albania Labor Force Participation Rate (% of total population ages 15+)

Source: World Bank, https://data.worldbank.org/indicator

The contributor-pensioner ratio has fallen significantly, from 4:1 in 1990 to only 1.5:1 in 2019 (Avdulaj & Muço 2021), and by 2030, this ratio is expected to decrease to 1.2:1. This trend reflects the risk to the financial sustainability of the pension and social services system. The trend of the dependency ratio over the years for Albania region is illustrated in Figure 13.

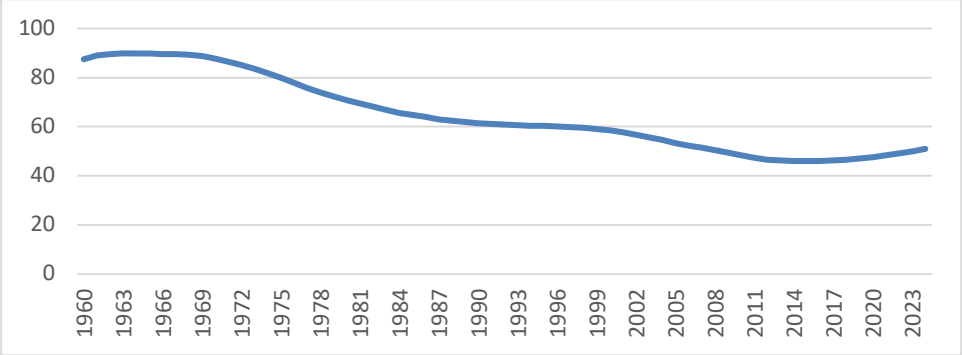

Figure 12: Albania Age Dependency Ratio (% of working-age population)

Source: World Bank, https://data.worldbank.org/indicator

On the other hand, the aging population increases the demand for specialized health and social services, in parallel with the fact that emigration has reduced the specialized staff in these fields. Thus, emigration creates a cycle of both economic and social crises, which requires a sustainable and long-term solution.

5. The perspective of sustainable development and the role of human capital

The literature review clearly indicates that human capital is one of the key elements for achieving sustainable development. In this context, authors such as Docquier & Rapoport (2012) have emphasized the importance of "brain circulation" instead of "brain drain", considering migration as an opportunity to increase global connections, to facilitate the circulation of ideas and to build innovative capacities in the country through international exchanges. Using this model, Albania can design policies that do not aim to stop emigration, which is often inevitable, but to use it for sustainable development.

5.1 Impact on Long-Term Economic Growth

Demographic and structural changes due to emigration have had a significant impact on reducing Albania's long-term economic growth potential. The lack of human capital and the aging population have hindered the development of strategic sectors, reduced the elasticity of the labor market, and hindered productivity growth (World Bank 2022). In addition, the departure of skilled labor also affects the absorption of foreign investment. When foreign investors consider investment opportunities in Albania, they see the lack of qualified staff as an obstacle to realizing their long-term projects in Albania.

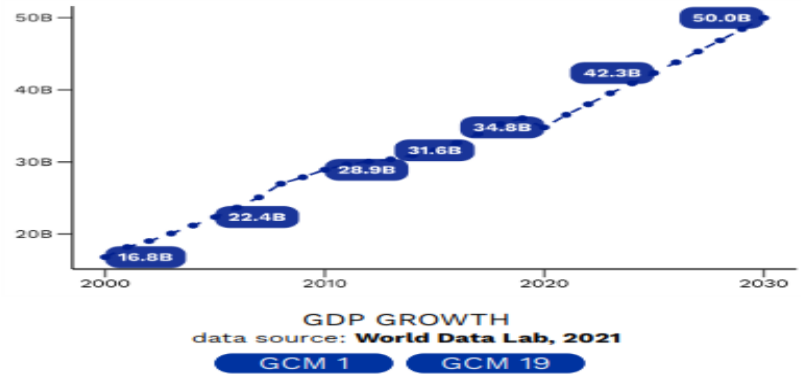

Figure 13: GDP growth in Albania

Source: IOM UN Migration in collaboration with World Data Lab. Migration Data Platform for Evidence-Based Regional Development (M-Powerd), In South-Eastern, Eastern Europe and Central Asia (Seeeca), Region of Albania.

The World Bank (2022, 2023) has identified the dual impact of emigration, firstly a positive impact related to remittances (Figure 13), as they have a direct positive impact on improving family incomes and also on economic stability, and secondly a negative impact related to the departure of skilled labor, which harms economic development and inhibits innovation.

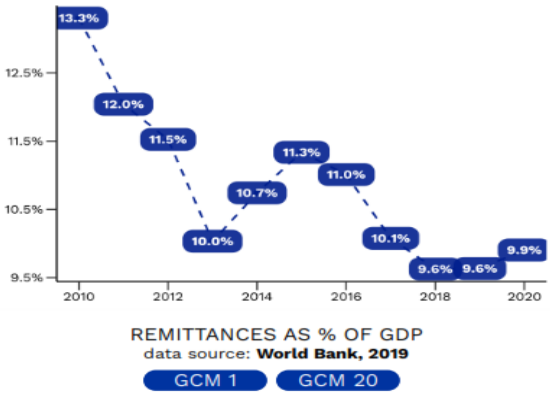

Figure 13: Remittances as percentage of GDP

Source: IOM UN Migration in collaboration with World Data Lab. Migration Data Platform for Evidence-Based Regional Development (M-Powerd), In South-Eastern, Eastern Europe and Central Asia (Seeeca), Region of Albania.

Remittances account for about 10% of Albania's GDP according to Figure 13, and with an average inflow of 1.6 million euros per year, according to Figure 14 (World Bank, 2019; Bank of Albania, 2020–2021).

However, this support fails to compensate for the loss of a productive and educated workforce, as mechanisms for economic development and domestic investment are lacking.

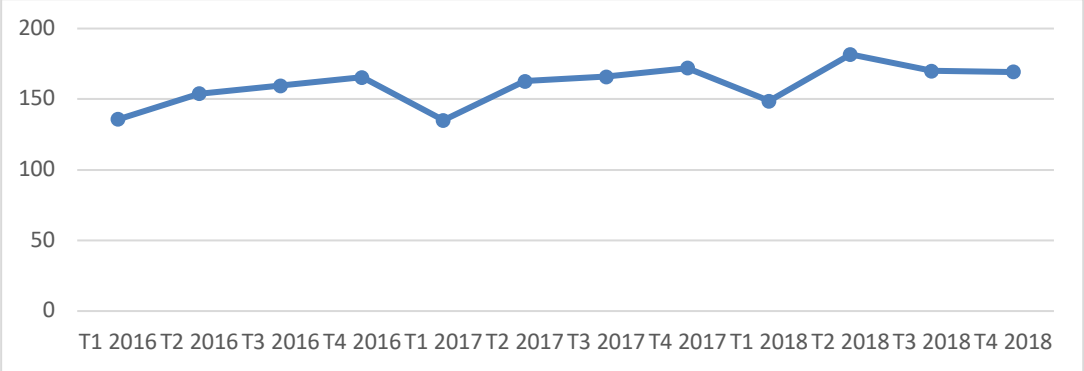

Figure 14: Remittances (million EUR)

Source: Bank of Albania

5.2 Regional Depopulation and Urban Concentration

Another significant effect of migration in Albania is the disproportionate emptying of rural areas, especially in the northern and northeastern parts of the country. The lack of economic opportunities has forced residents in these areas to move to the large cities of Albania or to international migration (King & Vullnetari 2006). This has led to a concentration of population and labor force in urban centers such as Tirana, Durrës, Vlora, etc., which often do not have sufficient infrastructural and institutional capacities to cope with these flows. As a result, an increasingly pronounced divide is created between urban and rural areas, which exacerbates regional inequalities and slows down balanced territorial development.

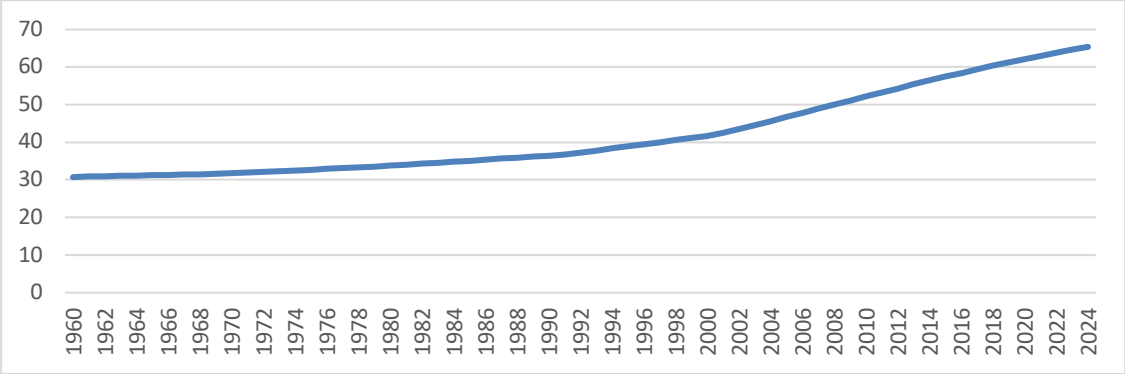

Figure 15: Albania Urban Population (% of total population)

Source: World Bank, https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=AL&view=chart

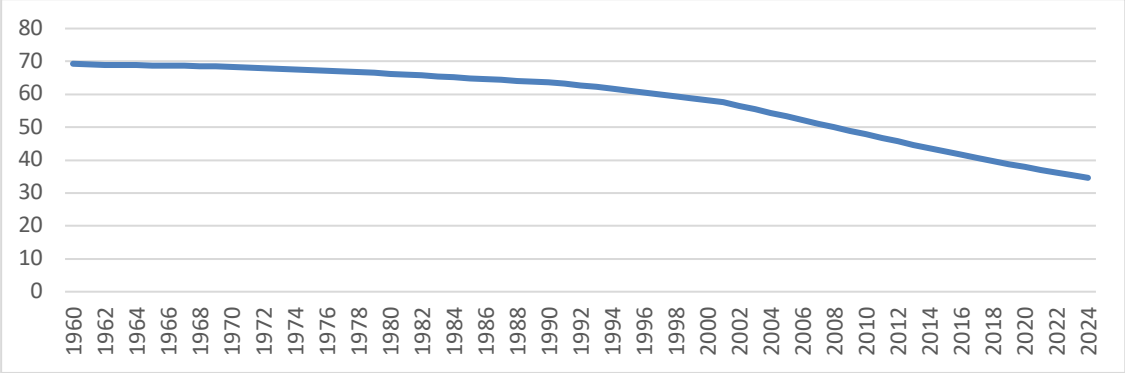

Figure 16: Rural Population of Albania (% of total population)

Source: World Bank, https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?view=chart&locations=AL

6. Migration policies and brain gain strategies

Authors in the field and national and international institutions have proposed comprehensive policies aimed at brain gain and the active involvement of emigrants in the development of the country. Gëdeshi & King (2019) propose "brain gain" policies, proposing the creation of academic infrastructures or research centers and institutional connections that attract academic and scientific emigrants.

Also, according to ETF & wiiw (2021), policies intertwined between education, the labor market and economic development are considered important, in order to create a suitable environment for professionals to stay in their country or for emigrant professionals to return. They propose to undertake investments in Albanian universities, implement appropriate administrative reforms, use fiscal incentives for emigrant investments, and also create international cooperation networks.

The World Bank (2023) also recommends policies for managing migration that last over time, through the strategic use of emigrants, in the following ways:

- By carefully considering schemes for the return of professionals.
- Stimulating cooperation between Albanian and international universities through joint research projects.
- Creating so-called "knowledge hubs" that would serve as bridges between emigrants and their home countries.

However, improving the political and institutional climate in the country is key to the success of these policies (Krasniqi et al., 2023). Unless a system based on meritocracy, transparency and stability is formalized and implemented, even the best initiatives risk failure.

6.1 Strategies for mitigating human capital loss

Studies recommend policies and approaches that aim to retain professionals in the country, encourage the return of emigrants, and use mechanisms that include Albanian expertise abroad. Thus, the policies most recommended by authors and international institutions consist of:

- Improving working conditions and safe working environments, promoting competitive salaries, and opportunities for career advancement;
- Investing in higher education and vocational training to increase the supply of human capital;
- Creating cooperation networks with emigrants, stimulating temporary return projects, research visits, and knowledge transfers;
- Policies that aim to improve living conditions in rural areas and reduce territorial inequalities.

In conclusion, the loss of human capital through emigration affects not only the labor market, but also the quality of life and the prospect of sustainable development, as well as the functioning of the state itself. This requires long-term, appropriate interventions to preserve and regenerate the human capital that is essential for Albania's future.

7. Conclusions and Recommendations

Emigration in Albania has produced demographic and structural effects on the labor market, giving significant impacts on the aging population, the reduction of human capital, the transformation of the structure of economic sectors, the worsening of social inequalities and disparities in territorial development.

Emigration has been and remains one of the greatest challenges facing the labor market in Albania. As this study highlights, the departure of young people and qualified professionals has significantly weakened the country's human capital, making sustainable development difficult. Important public and private sectors such as health, education and public administration, technology and information, construction, tourism, agriculture, are facing a significant shortage of professionals, while the increase in wage inequalities has created unfavorable conditions for workers in the less protected sectors.

In this context, emigration should be treated as an essential factor that requires strategic and coordinated policy-making interventions. The labor market cannot be improved without addressing the structural causes and consequences of migration. This requires comprehensive common policies in education, regional development, social welfare and migration management.

To meet the challenges, the following are recommended:

- Drafting a coordinated strategy for demography and human capital, with a focus on regenerating the workforce and stopping uncontrolled emigration.
- Creating fiscal and institutional facilitation policies, improving working conditions and creating attractive packages that attract the return of Albanian professionals from emigration, especially in sectors with significant shortages.
- Investing in university education and vocational training, with a focus on adapting skills to the real needs of the labor market.
- Reorganizing the pension and social security system to meet the challenges of population aging.
- Drafting appropriate policies for regional development, with the aim of reducing rural depopulation, strengthening areas affected by emigration, and increasing employment opportunities in vulnerable areas.
- Strengthening cooperation between public institutions, universities and the private sector to build a more sustainable labor market.

Implementing the above recommendations is essential to halt further loss of human capital and to restore some of it:

In conclusion, a comprehensive approach to emigration is essential to building a competitive

economy with sustainable development.

8. Study Limitations and Recommendations for Future Studies

This study aims to analyze the impact of emigration on the labor market in Albania, based mainly on secondary data and a review of existing literature. However, the methodology used in the paper imposes several limitations that affect the interpretation of the results and the recommendation of policies. One of them is the lack of primary data, which could provide a deeper understanding of the causes of emigration and obstacles to the return of emigrants. Another limitation is the inability to measure informal emigration, which is not included in the data used, thus affecting the accuracy of the analysis. Also, the lack of detailed data does not allow us to analyze more details of emigrants, in terms of education and socio-economic background. Also, delays in the publication of statistical data by the relevant domestic institutions limit the ability to reflect the latest developments in the labor market and emigration trends.

For further studies in this field, it is suggested the use of mixed methods, combining quantitative and qualitative data, including focus group interviews with emigrants or those who have returned to their home country. It is also suggested to conduct more in-depth research on return migration and its impacts on human capital and entrepreneurship.

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Human Resources and Social Responsibility as Determinants of Sustainable Hotel Performance in Vlora

Dorjana Feimi[17], Fioralba Vela[18]

Abstract
This study aims to explore the impact of Human Resources Management (HRM) and Corporate Social Responsibility (CSR) on the sustainable performance of hotels in the city of Vlora. The tourism and hospitality industry plays a key role in the global economy, significantly contributing to job creation and the GDP of many countries. Within this context, social responsibility and effective human resource management emerge as crucial factors for achieving sustainable performance in the hospitality sector. Through an integrated approach, the study examines the relationship between these elements and how they influence the success and long-term development of hotel businesses. The literature indicates that active employee involvement and alignment of policies with sustainability objectives are essential for the long-term success of organizations in the hospitality sector. The study also discusses hypotheses related to the impact of HRM and CSR on sustainable performance, which will be empirically tested. The methodology follows a quantitative approach, collecting data through structured questionnaires administered to hotel employees and managers in Vlora. Data analysis will be conducted using statistical techniques, including linear regression and correlation analysis, to measure the influence of various variables on sustainable performance. In conclusion, this study contributes to existing literature by providing a deeper understanding of how human resource management and social responsibility can be strategically employed to enhance sustainable performance in the hospitality sector in a growing tourist city like Vlora. The findings offer practical recommendations for managers and corporate policies, helping to improve practices toward more sustainable and competitive development in the local and regional market.
Key words: Human Resources Management (HRM); Corporate Social Responsibility (CSR); Sustainable Performance; Hospitality Industry, Vlore

JEL Classification: E02, E44, O16

1. Introductions

The contemporary global economy is increasingly anchored in the sustainable development of key industries—tourism chief among them. In Albania, tourism and travel contributed nearly 25% of GDP in 2023, supporting approximately 269,000 jobs and signaling a post-pandemic acceleration in sectoral growth (WTTC 2024). The city of Vlora emerges as a strategic coastal hub, benefiting from Albania's 2024–2030 National Tourism Strategy, which prioritizes regional destination management, product diversification, infrastructure investment, and workforce development (WTTC 2024). Consistent with Global Sustainable Tourism Council (GSTC) standards, Albania now emphasizes alignment with UN Sustainable Development Goals and embeds CSR into its tourism governance mechanisms (GSTC 2024).

Within this broader policy and economic framework, hotels play a pivotal role. As microcosms of the regional tourism ecosystem, their internal management systems—particularly Human Resource Management (HRM) and Corporate Social Responsibility (CSR) practices—can significantly influence sustainable performance outcomes. International studies in the hospitality sector have demonstrated that such practices are positively associated with sustainable organizational performance (Sarwar H. et.al 2022). For instance, upscale hotels in the UK, Italy, and Pakistan

[17] University "Ismail Qemali" of Vlore, Faculty of Economics, Deparment of Busines,Vlore, Albania; dorjanafeimi@yahoo.com
[18] University "Ismail Qemali" of Vlore, Faculty of Economics, Deparment of Busines Vlore, Albania; fioralba.vela@univlora.edu.al

reported that effective HRM and CSR integration enhances environmental stewardship, competitive advantage, and social responsibility (Sarwar H. et.al 2022)

However, empirical research in emerging contexts remains limited. Whereas substantial evidence exists from Western and developed countries, less is known about how these relationships function in developing tourism destinations like Vlora. Regional challenges—such as seasonal staffing shortages and limited structured professional development—further complicate strategic implementation.

This study addresses these gaps by investigating the interplay between HRM, CSR, and sustainable performance in Vlora-based hotels. Recognizing that industry-wide success depends not only on economic efficiency but also on environmental and social resilience, this research applies quantitative methods—including linear regression, correlation analysis, and scale reliability testing—to evaluate whether CSR and HRM practices enhance sustainable performance at the organizational level. This approach aligns with international calls for rigorous assessments of hospitality sector performance under sustainability frameworks (Sarwar H. et.al 2022).

By exploring these dynamics within the concrete context of Vlora's evolving tourism environment, this study aims to inform both academic discourse and managerial practice. It seeks to clarify how hotels in developing economies can balance profitability with sustainability priorities, contributing to broader efforts by Albanian policymakers and tourism stakeholders in shaping a resilient and inclusive future.

2. Literature Review

2.1 *Human Resource Management (HRM)*

In recent decades, academic literature has increasingly emphasized the importance of Human Resource Management (HRM) in promoting and integrating Corporate Social Responsibility (CSR) into organizational strategies. Scholars have consistently sought to identify the factors that influence the successful implementation of CSR, both at the micro level (within organizations) and at the macro level (within the broader institutional environment). One of these key factors is internal support for CSR, which includes employee ownership and motivation to embrace CSR initiatives (Aguinis & Glavas, 2012). Employee support is a critical element for the success of CSR strategies. As noted by González-Benito and González-Benito (2006), organizations must ensure the dissemination of accurate and up-to-date information among all internal stakeholders to effectively implement CSR policies. Without such engagement and support, CSR initiatives are likely to fail or prove ineffective.

Research by Lee et al. (2013) indicates that employees are closely linked to CSR activities, and their involvement is strongly influenced by HRM practices and organizational culture. These authors argue that moral motivation, the level of employee empowerment, and top management commitment are key factors that foster an organizational environment supportive of CSR. Similarly, De Luque et al. (2008) found that employees' perceptions of leadership—whether visionary or authoritarian—directly affect how they evaluate the organization's commitment to social and economic values.Moreover, when managers openly communicate about CSR practices, integrate them into organizational goals, and encourage employee participation in these processes, they promote positive perceptions and enhance employee engagement (Glavas & Piderit, 2009).

HRM is defined as a set of organizational activities aimed at developing, managing, and retaining the workforce to achieve organizational objectives (Armstrong & Taylor, 2020). According to

Ehnert (2009), HRM involves adapting strategies and practices that enable organizations to achieve financial, social, and ecological goals, with impact both internally and externally. HRM is also conceptualized as a collection of processes that help organizations monitor and improve employee performance effectively and sustainably (Boxall & Purcell, 2016).

In the context of CSR, HRM is essential for building sustainable relationships between employers and employees, thereby contributing to the achievement of organizational objectives in a socially responsible and efficient manner (Wright & McMahan, 2011). According to Purcell (2003), any organization that relies on labor as a fundamental resource operates on the basis of HRM structures and practices, which aim to care for employees and foster a sustainable and productive work environment. Similarly, Senyucel (2009) defines HRM as a blend of people-oriented management practices that regard employees as core assets of the organization and aim to build and maintain a skilled and committed workforce aligned with organizational goals. Boxall (1996) further suggests that the effectiveness of HRM strategies depends on various contextual factors, including the nature of the industry, organizational size and structure, the economic and social environment, and legal and cultural norms. Additionally, more recent studies by Guest (2011) and Bos-Nehles et al. (2013) emphasize that HRM should not be viewed as a practice that develops solely within the boundaries of an organization. Rather, it is a dynamic process influenced by—and also influencing—external factors such as competition, regulations, institutional pressures, and stakeholder expectations.

2.2 Corporate Social Responsibility (CSR)

Corporate Social Responsibility (CSR) is conceptualized as the manner in which organizations integrate economic, social, and environmental concerns into their organizational culture, values, decision-making processes, operations, and strategies, while acting ethically, transparently, and sustainably. This approach not only contributes to the development of responsible business practices but also enhances financial performance and the overall societal impact of the organization (Carroll & Shabana, 2010).

CSR programs typically focus on the impact of organizational activities across three key dimensions: environmental, social, and economic. These initiatives go beyond the traditional objective of profit maximization and support the long-term development of the communities and environments in which organizations operate (Elkington, 1998). Various scholars emphasize that CSR represents a moral commitment by organizations to act responsibly toward stakeholders while supporting social development and environmental protection (Moon, 2007). In this context, CSR is often defined as the voluntary integration of social and environmental concerns into business strategies, stakeholder relationships, and the values an organization promotes (European Commission, 2011). The World Business Council for Sustainable Development (WBCSD) provides a comprehensive definition, highlighting that CSR reflects a corporate commitment to contribute to economic development through ethical management practices aimed at improving the quality of life for employees, their families, and society at large (WBCSD, 1999).

The effective implementation of CSR requires the full integration of its principles into the organization's strategy, culture, and long-term objectives. As Inyang (2013) argues, CSR initiatives and strategies are brought to life through the decisions and actions of employees, who serve as the primary agents of this transformation. CSR must extend beyond philanthropic or charitable efforts to include a critical assessment of the organization's societal and environmental impact (Porter & Kramer, 2006). For this reason, CSR should be regarded as a core organizational strategy rather than an optional or peripheral activity. Employees play an indispensable role in the successful implementation of CSR, helping to embed its values into the mission, goals, and organizational culture (Aguinis & Glavas, 2012). According to Lapiņa et al. (2014), organizations that

authentically practice CSR not only comply with legal frameworks but also invest in human capital and in issues related to environmental sustainability.

On the other hand, Garavan and McGuire (2010) stress that the implementation of CSR strategies is contingent upon employees' discretionary behavior and individual commitment. Difficulties in implementing CSR often stem from employees' low perceived organizational support, lack of knowledge and understanding of CSR, and their attitudes toward such initiatives. In the same vein, Lam and Khare (2010) emphasize that for CSR initiatives to be successful and legitimate, they must be sustainably integrated into the organization's culture, structure, processes, and overarching strategy. Strategic CSR, grounded in strong management practices and the mobilization of internal resources, can positively contribute to the development of competitive advantage and the enhancement of organizational performance.

2.3 Sustainable Performance

The concept of sustainable performance is multidimensional, encompassing the economic, social, and environmental aspects of an organization. In recent decades, this concept has gained particular importance as a response to the challenges posed by rapid economic growth, climate change, and increasing pressure on natural resources. At its core, sustainable performance represents a strategic and integrated approach that requires organizations to balance economic goals with their social and environmental responsibilities.

According to Nizam et al. (2019), sustainable performance involves the effective management of resources to generate long-term benefits across the three dimensions—economic, social, and environmental—without compromising the ability of future generations to meet their own needs. This approach includes not only achieving short-term profitability objectives but also maintaining and enhancing internal organizational capacities that support long-term and inclusive development.

In the context of the hospitality sector—one of the industries most sensitive to sustainability pressures such as energy consumption, waste management, and community impact—the application of sustainable performance principles is essential. Hotels cannot operate in isolation from their surrounding environment or community; they must adopt practices that safeguard the environment, promote social inclusion, and strengthen the organization's economic stability. Industrial growth and aggressive urbanization in many regions, including Albania, have further increased the need for the implementation of sustainable management models. The Global Reporting Initiative (GRI, 2021) reports that over 70% of international companies now incorporate sustainability as an integral part of their operational strategies. This indicates a shift away from short-term profit-driven logic toward a corporate culture grounded in long-term vision. On a broader level, the 2030 Agenda for Sustainable Development, adopted by the United Nations, serves as a global framework for economic and social transformation. It comprises 17 Sustainable Development Goals (SDGs) and 169 specific targets (UN, 2015), aiming not only to improve citizens' quality of life but also to foster a sustainable workforce—focusing on quality education, safe working conditions, gender equality, and access to justice. In this regard, Kolk (2016) notes that organizations that integrate sustainability objectives into their internal strategies gain not only competitive advantage but also boost employee engagement and motivation, as employees feel part of a broader mission beyond financial profit. Similarly, Schönherr et al. (2017) argue that achieving sustainability goals requires cross-sector collaboration among public institutions, private companies, civil society, and non-governmental organizations. Within this complex system, the role of employees is twofold: they are both implementers of sustainable practices and beneficiaries through improved working conditions, development opportunities, and participation in decision-making.

Ultimately, sustainable performance should not be perceived merely as an external objective for organizations, but rather as a managerial philosophy that permeates all aspects of organizational life—from strategic decision-making to the daily behaviors of employees and communication with stakeholders.

2.4 The Hospitality Sector in the City of Vlora: Challenges and Sustainability Potentials

The city of Vlora, as one of the most significant tourist gateways in Albania, has experienced continuous growth in its hospitality sector, particularly over the past decade. This development has been driven by factors such as improved road infrastructure, private investments in coastal areas, and increased promotion of the city as a strategic tourist destination. According to data from the National Tourism Agency (AKT, 2022) and INSTAT (2023), Vlora ranks among the cities with the highest number of seasonal tourists and has seen a notable increase in accommodation capacities, including both large hotel structures and a high number of small family-run businesses.

However, this growth has brought to light several challenges related to the quality of human resource management and the lack of integration of sustainability practices into the daily operations of hotels. Common issues include a shortage of qualified staff, high employee turnover, and insufficient training—all of which negatively affect the consistency and quality of service delivery. In many cases, policies on professional development, employee well-being, and inclusion in decision-making are either lacking or underdeveloped, leading to structural gaps within organizations. Another critical issue requiring attention is the integration of Corporate Social Responsibility (CSR) into hotel management practices. Many hotels lack clear policies on community engagement, environmental protection, gender equality, and the protection of workers' rights. This deficiency not only undermines the public image of these businesses but also reduces their ability to attract international clients and establish long-term, sustainable partnerships. As highlighted in the Vlora Municipality's Local Economic Development Report (2022), the absence of coordinated strategies between the public and private sectors in tourism makes it difficult to align efforts toward sustainable development. This is consistent with findings in the international literature, which emphasize the importance of institutional cooperation and the involvement of the private sector in achieving long-term sustainability goals (UNWTO, 2018; GRI, 2021).

In this context, Human Resource Management (HRM**)** and CSR practices are no longer optional or desirable additions—they represent strategic necessities for hospitality organizations seeking longevity and competitiveness in the tourism market. For hotels in Vlora, implementing such practices could result in enhanced service quality, improved customer experience, and increased economic and social benefits at the local level.

2.5 Hypotheses

In contemporary literature, increasing attention has been given to the relationship between Human Resource Management (HRM) and Corporate Social Responsibility (CSR) in the context of enhancing organizational sustainable performance. These two fields—once frequently addressed independently—are now seen as complementary and mutually reinforcing, significantly influencing organizational culture, employee commitment, and the long-term sustainability of businesses.

According to Voegtlin and Greenwood (2016), HRM plays a key role in promoting CSR, acting as the primary intermediary between strategic CSR policies and employees' everyday experiences. HRM policies aimed at creating a fair, inclusive, and ethical work environment help institutionalize CSR as part of the organization's core identity. This, in turn, strengthens organizational commitment, employees' social awareness, and internal operational efficiency. Barrena-Martinez et

al. (2017), in an empirical study conducted in the private sector in Spain, identified eight HRM practices closely linked to CSR objectives, including: fair working conditions, gender equality, diversity, social inclusion, health care, workplace safety, and professional development training. These practices are essential for the responsible and sustainable management of human capital. Similarly, Bučiūnienė and Kazlauskaitė (2012) identified five key HRM policies with a direct impact on CSR: (1) work flexibility, (2) inclusion of marginalized groups, (3) employee well-being, (4) ethical recruitment practices, and (5) open dialogue with employees. These elements represent not only a humane approach to employee management, but also a strategic organizational method for building social capital and fostering mutual trust. Jamali et al. (2015) further argue that integrating CSR into HRM creates a work environment that encourages integrity, commitment, and a shared sense of purpose, reducing tensions between business and societal interests. This synergy contributes to building a more sustainable and ethically aware organizational culture, aligned with long-term strategic goals. Based on the theoretical review and previous empirical findings, two hypotheses have been developed within the framework of this study's conceptual model:

- Hypothesis I (H1): Human Resource Management (HRM) has a significant impact on achieving organizational sustainable performance.
- Hypothesis II (H2): Corporate Social Responsibility (CSR) positively influences the sustainable performance of organizations.

3. Data and Method

This study adopts a quantitative approach aimed at measuring and analyzing the relationships between selected variables related to the impact of Human Resource Management (HRM) and Corporate Social Responsibility (CSR) on the sustainable performance of hotels in the city of Vlora. The primary data collection tool employed was structured questionnaires, divided into sections that measure employees' and managers' perceptions of HRM practices, CSR activities, as well as the organization's sustainable outcomes. Questionnaires were used as one of the most common methods for data collection in empirical research.

The data obtained from the questionnaires to investigate the conceptual model and the proposed hypotheses were empirically tested using correlation and linear regression analysis. Linear regression is a statistical technique used to explore the relationship between an independent variable (predictor) and a dependent variable (criterion). When more than one independent variable is included in the analysis, it is referred to as multiple linear regression.

3.1 Population and Sample

The target population of this study includes employees and managers of hotels operating in the coastal city of Vlora. Purposive sampling was employed to ensure the representation of individuals directly involved in human resource management and the implementation of corporate social responsibility strategies within the hospitality sector.

3.2 Instruments and Data Collection Process

The questionnaire was designed using a five-point Likert scale (ranging from "strongly disagree" to "strongly agree") and was divided into three main sections: Human Resource Management Practices, CSR Activities, and Sustainable Organizational Performance. Questionnaires were distributed both physically and electronically, aiming to collect a sufficient amount of valid data for statistical analysis.

4. Empirical Analysis

4.1 Descriptive Analysis

The descriptive statistical analysis presents the main findings regarding the general data of the firms and the market environment, obtained from Sections I, II, III, and IV of the questionnaire. This section describes the demographic characteristics of the 159 respondents who participated in the study. The data were processed using SPSS software and are analyzed below. These findings have been categorized and analyzed to provide a clear overview of respondents' demographic characteristics, organizational structure, as well as current practices related to human resources, corporate social responsibility, and performance within the hotel sector in the city of Vlora.

4.2 Demographic Data

A total of 159 individuals working in the hotel sector in Vlora participated in this study. Regarding gender, 54.2% of participants were male and 44.1% female. Concerning age, the dominant age group was 29–39 years (52.5%), followed by 18–28 years at 27.1%, and then 40–50 years at 18.6%. The organizational positions varied as follows: 37.3% were workers, 23.7% senior managers, 15.3% middle managers, 13.6% owners, and 8.5% executive chiefs. Regarding work experience, 33.9% of participants had 5–9 years of experience, 23.7% had 0–4 years, 22% had 10–14 years, 11.9% had 15–19 years, and only 6.8% had over 20 years of experience within the organization.

Table 1: Demographic Data

Variable	Category	Frequency (N)	Percentage (%)
Gender	Female	77	44.1%
	Male	81	54.2%
	No response	1	1.7%
Age	18–28 years	45	27.1%
	29–39 years	84	52.5%
	40–50 years	29	18.6%
	No response	1	1.7%
Position in Organization	Senior Manager	39	23.7%
	Middle Manager	24	15.3%
	Owner	22	13.6%
	Worker	59	37.3%
	Executive Chief	14	8.5%
	No response	1	1.7%
Years of Work Experience	0–4 years	39	23.7%
	5–9 years	54	33.9%
	10–14 years	35	22.0%
	15–19 years	19	11.9%
	Over 20 years	11	6.8%
	No response	1	1.7%

Cronbach's Alpha and KMO Results

To assess the reliability of the measurement instrument, Cronbach's Alpha coefficient was calculated for each of the main constructs. The purpose of this coefficient is to evaluate the internal consistency reliability of the scales measuring each construct (HRM, CSR, and Sustainable Performance) using Cronbach's Alpha (α). A value above 0.7 is considered acceptable, while values exceeding 0.9 indicate excellent internal consistency reliability.

- **Sustainable Performance (SP):** α = 0.940, indicating very high reliability with 8 items. This result demonstrates excellent internal consistency, suggesting that all included items consistently measure

the same construct. Inter-item correlations are strong and contribute to the robustness of the measurement quality.

Reliability Statistics

Cronbach's Alpha	N of Items
.940	8

- Human Resource Management (HRM): α = 0.941, indicating very high reliability across 12 items. The very high alpha value shows that the HRM items are highly consistent and coherent with each other. No items need to be excluded as each contributes meaningfully to the overall construct.

Reliability Statistics

Cronbach's Alpha	N of Items
.941	12

- **Corporate Social Responsibility (CSR):** α = 0.740, considered acceptable reliability with 7 items. The alpha value suggests a satisfactory level of internal consistency. However, a review of individual items could be undertaken to check if removing any item would significantly increase overall consistency. Nonetheless, the value surpasses the minimum threshold of 0.7 and is suitable for further analysis.

Reliability Statistics

Cronbach's Alpha	N of Items
.740	7

These values indicate that the questionnaires used are reliable and stable enough for subsequent statistical analyses. All constructs meet the minimum criteria for statistical testing. HRM and Sustainable Performance show strong cohesion among items, suggesting that the questions are clearly formulated and aligned with the intended concepts. CSR demonstrates good reliability but could be further examined to determine if removing any items improves the alpha coefficient.

4.3 Correlations between Variables

The relationships among variables were analyzed using Pearson's correlation coefficient. The purpose of this correlation analysis was to determine the strength and direction of the associations between variables related to Human Resource Management (HRM), Corporate Social Responsibility (CSR), and Sustainable Performance (SP) of hotels in the city of Vlorë.

4.3.1 Correlations within the Sustainable Performance (SP) Construct

All items measuring sustainable performance exhibited strong correlations with each other. This indicates that sustainable performance is a unified and well-integrated construct. The highest correlations (e.g., SP1-SP5: r = .760) suggest that respondents perceive the different aspects of sustainability—such as environmental, economic, and social sustainability—as interconnected.

Table 2: Correlations within the Sustainable Performance (SP) Construct

Correlations

		SP1	SP2	SP3	SP4	SP5	SP6	SP7
SP1	Pearson Correlation	1	.475**	.308*	.358*	.345*	.125	.382**
	Sig. (2-tailed)		.001	.037	.014	.019	.407	.009
	N	159	159	159	159	159	159	159

SP2	Pearson Correlation		1	.243	.296*	.380**	.242	.325*
	Sig. (2-tailed)			.103	.046	.009	.105	.028
	N		159	159	159	159	159	159
SP3	Pearson Correlation			1	.348*	.207	.185	.579**
	Sig. (2-tailed)				.018	.167	.217	.000
	N			159	159	159	159	159
SP4	Pearson Correlation				1	.413**	.486**	.628**
	Sig. (2-tailed)					.004	.001	.000
	N				159	159	159	159
SP5	Pearson Correlation					1	.293*	.414**
	Sig. (2-tailed)						.048	.004
	N					159	159	159
SP6	Pearson Correlation						1	.493**
	Sig. (2-tailed)							.000
	N						159	159
SP7	Pearson Correlation							1
	Sig. (2-tailed)							
	N							159

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

4.3.2 Correlations within Human Resource Management (HRM)

The HRM items are significantly correlated with each other, indicating that the elements of human resource management (such as recruitment, training, motivation, and performance evaluation) function as a coordinated system. The higher correlation values (e.g., HRM4–HRM10: r = .743) demonstrate a strong integration among specific aspects of HRM practices.

Table 3: Correlations Among Human Resource Management (HRM) Items (N = 159)

	HRM1	HRM2	HRM3	HRM4	HRM5	HRM6	HRM7	HRM8	HRM9	HRM10	HRM11	HRM12
HRM1	1	.690**	.452**	.573**	.498**	.551**	.294*	.371*	.489**	.334*	.335*	.448**
HRM2	.690**	1	.453**	.709**	.472**	.450**	.403**	.425**	.436**	.575**	.423**	.383**
HRM3	.452**	.453**	1	.555**	.416**	.420**	.400**	.193	.561**	.252	.319*	.283
HRM4	.573**	.709**	.555**	1	.637**	.524**	.474**	.577**	.594**	.743**	.599**	.578**
HRM5	.498**	.472**	.416**	.637**	1	.470**	.220	.495**	.492**	.525**	.355*	.524**
HRM6	.551**	.450**	.420**	.524**	.470**	1	.289	.513**	.282	.379**	.211	.506**
HRM7	.294*	.403**	.400**	.474**	.220	.289	1	.212	.396**	.460**	.105	.304*
HRM8	.371*	.425**	.193	.577**	.495**	.513**	.212	1	.262	.454**	.403**	.590**
HRM9	.489**	.436**	.561**	.594**	.492**	.282	.396**	.262	1	.342*	.573**	.407**
HRM10	.334*	.575**	.252	.743**	.525**	.379**	.460**	.454**	.342*	1	.455**	.482**
HRM11	.335*	.423**	.319*	.599**	.355*	.211	.105	.403**	.573**	.455**	1	.459**
HRM12	.448**	.383**	.283	.578**	.524**	.506**	.304*	.590**	.407**	.482**	.459**	1

4.3.3. Correlations within Corporate Social Responsibility (CSR)

The correlations are generally moderate. Some items, such as CSR1–CSR7 (r = .382 – .628), show significant positive relationships, indicating that CSR is perceived as a set of interconnected actions, including environmental, ethical, and community responsibilities. Item CSR6 has a lower correlation with CSR1 (r = .125), which may suggest that involvement in certain specific social activities is perceived as more distinct.

Table 4: Correlations within Corporate Social Responsibility (CSR)

Correlations

		CSR1	CSR2	CSR3	CSR4	CSR5	CSR6	CSR7
CSR1	Pearson Correlation	1	.475**	.308*	.358*	.345*	.125	.382**
	Sig. (2-tailed)		.001	.037	.014	.019	.407	.009
	N	159	159	159	159	159	159	159
CSR2	Pearson Correlation		1	.243	.296*	.380**	.242	.325*
	Sig. (2-tailed)			103	.046	.009	.105	.028
	N		159	159	159	159	159	159
CSR3	Pearson Correlation			1	.348*	.207	.185	.579**

	Sig. (2-tailed)				.018	.167	.217	.000
	N			159	159	159	159	159
CSR4	Pearson Correlation				1	.413**	.486**	.628**
	Sig. (2-tailed)					.004	.001	.000
	N				159	159	159	159
CSR5	Pearson Correlation					1	.293*	.414**
	Sig. (2-tailed)						.048	.004
	N					159	159	159
CSR6	Pearson Correlation						1	.493**
	Sig. (2-tailed)							.000
	N						159	159
SCR7	Pearson Correlation							1
	Sig. (2-tailed)							
	N							159

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

4.3.4 Correlations between Constructs (HRM, CSR, and Sustainable Performance)

Using the respective construct indices from the regression analysis, the indirect correlations indicate that: HRM and Sustainable Performance (SP) have a positive relationship ($r \approx .24 – .29$, based on linear regression), suggesting that improvements in human resource management positively influence sustainable performance, although the effect is moderate and borderline statistically significant ($p \approx 0.053$). CSR and Sustainable Performance show a stronger and statistically significant relationship (higher r, $p = 0.014$), supporting Hypothesis 2 (H2) — that engagement in corporate social responsibility has a significant impact on improving hotel sustainable performance.

The correlation results support the internal consistency of each construct as well as the positive relationships between them, in line with Hypotheses 1 and 2. While CSR demonstrates a clearer impact on sustainable performance, the influence of HRM is positive but near the threshold of statistical significance, indicating a need for further analysis or a larger sample size.

4.5 Linear Regression Analysis and Hypothesis Testing

The purpose of this analysis is to examine the impact of Human Resource Management (HRM) and Corporate Social Responsibility (CSR) on the Sustainable Performance of hotels in the city of Vlora, using a linear regression model. This analysis supports the testing of the study's two main hypotheses. The model used is as follows:

$$\text{Sustainable Performance} = \beta_0 + \beta_1(\text{HRM}) + \beta_2(\text{CSR}) + \varepsilon$$

Parameter	Value
Sample Size	159
R (Multiple Correlation)	.441
R^2 (Coefficient of Determination) .195	
Adjusted R^2	.166
Significance F-test	.003
Dependent Variable	Sustainable Environmental Performance
Independent Variables	HRM, CSR
Standard Error	1.86058

The model is statistically significant ($p = .003$), indicating that at least one of the two predictors (HRM or CSR) has a significant effect on sustainable performance. The R^2 value of .195 means that 19.5% of the variance in sustainable environmental performance is explained by HRM and CSR combined. Although this is a modest value, it is meaningful in a real-world social context.

The coefficient for CSR ($p = .014$) is statistically significant, showing a substantial positive impact on environmental performance. The coefficient for HRM ($p = .053$) is at the borderline of statistical

significance, indicating a positive trend but not sufficient to conclusively confirm the effect at the conventional $p < .05$ threshold (table 5).

Table 5: Regression Coefficients

Variable	B Coefficient	Std. Error	Standardized Beta	t	Sig. (p)
(Constant)	25.213	1.498	-	16.826	.000
HRM	0.042	0.021	.245	1.975	.053
Corporate Social Responsibility	0.099	0.039	.315	2.533	.014

From the regression analysis, we conclude that Corporate Social Responsibility has a clear and significant impact on the sustainable performance of the hotel, implying that ethical, environmental, and social practices strengthen sustainability.

Hypothesis	Regression Result	Evaluation
H1: Human Resource Management impacts sustainable performance	B = .042, p = .053	Partially supported
H2: Corporate Social Responsibility positively influences organizational performance	B = .099, p = .014	Fully supported

Human Resource Management also demonstrates a positive impact, though further research is required to confirm the statistical strength of this relationship. The relatively low R^2 value suggests that other important factors not included in the current model may also influence sustainable performance. This statistical analysis was essential for empirically understanding the impact of Human Resource Management and Corporate Social Responsibility on the Environmental Performance of hotels in the city of Vlorë. The objective was to move beyond theoretical discussions and determine whether measurable relationships exist between these concepts in the real-world context of the hospitality sector.

Through statistical methods such as descriptive analysis, reliability testing (Cronbach's Alpha), correlation analysis, and linear regression, a clear framework was established to show how internal managerial practices and commitment to social responsibility contribute to the enhancement of organizations' environmental behavior.

5. Conclusion

The primary objective of this study was to examine the impact of Human Resource Management (HRM) and Corporate Social Responsibility (CSR) on the Sustainable Performance of hotels in the city of Vlorë. Utilizing statistical tools such as linear regression, Pearson correlation, and reliability assessment through Cronbach's Alpha, the study produced several significant findings that illuminate how organizational factors influence long-term sustainability and quality in the hospitality sector. The results revealed that:

- Corporate Social Responsibility (CSR) has a statistically significant and positive impact on enhancing the sustainable performance of hotels. This influence encompasses environmental, ethical, and social dimensions. Active engagement of businesses in addressing issues relevant to the local community and the environment contributes not only to improving corporate image but also to strengthening trust, customer loyalty, and the development of a healthy organizational culture.
- Human Resource Management (HRM), although at the threshold of statistical significance, also demonstrates a positive effect on sustainable performance. The findings suggest that practices such as careful staff selection, continuous training, capacity development, motivation, and fair performance evaluation are practically linked to improved organizational outcomes. These elements support the creation of a more engaged and productive workforce.

- All three main constructs—HRM, CSR, and Sustainable Performance—showed very high internal consistency (Cronbach's Alpha > 0.9 for HRM and Sustainable Performance), indicating a high degree of reliability in the measurement instrument. This confirms that the items within each construct are strongly aligned and effectively capture the intended concept.
- Correlation analyses between items and constructs revealed strong, positive, and statistically significant relationships, reinforcing the internal consistency of the results and the theoretical coherence of the proposed model.

In summary, the first hypothesis (H1), which proposed a relationship between HRM and sustainable performance, was partially supported, while the second hypothesis (H2), asserting that CSR positively influences organizational performance, was fully supported by empirical data. This suggests that hotels that successfully integrate advanced human resource practices and demonstrate genuine commitment to social responsibility are more likely to achieve high performance and long-term sustainability. This study highlights the importance of both the human factor and social responsibility as key pillars in building a sustainable, ethical, and competitive hospitality sector within the Albanian tourism market.

Recommendations for Enhancing Employee Engagement and Sustainable Performance

Based on the empirical findings, it is evident that both Human Resource Management (HRM) and Corporate Social Responsibility (CSR) play significant roles in shaping sustainable performance in the hotel sector. To maximize employee engagement and long-term organizational effectiveness, hotel managers should implement targeted strategies that align internal practices with broader sustainability goals.

Firstly, building an organizational culture grounded in CSR enhances employee motivation and commitment. When employees see their workplace actively contributing to social and environmental causes, they are more likely to feel connected and valued. Hotels can promote this culture through volunteer initiatives, partnerships with local NGOs, and internal environmental programs. Secondly, continuous professional development is essential. Providing staff with regular technical and soft skills training, along with clear career progression opportunities, helps improve performance and increases job satisfaction. Initiatives such as mentoring, leadership development, and internal promotions contribute to stronger workforce engagement. Transparent and fair performance evaluation systems are also key. Performance indicators, constructive feedback, and merit-based rewards (e.g., bonuses or recognition) reinforce employee motivation and align individual efforts with organizational goals. Creating an open, communicative, and psychologically safe work environment supports both well-being and retention. Regular staff meetings, accessible communication channels, and mental health initiatives are vital for a healthy organizational climate. Additionally, leveraging technology—such as digital platforms for training, performance tracking, and engagement surveys—can enhance HR efficiency and responsiveness. Finally, offering clear development paths ensures that employees remain committed and see long-term value in staying with the organization.

In summary, a holistic, values-driven HR approach—supported by CSR and continuous development—can significantly enhance employee engagement and foster sustainable organizational performance in the hospitality sector.

Limitation of the study

Despite the valuable insights offered by this study, several limitations should be acknowledged. The sample size was small (N = 159), which may reduce the statistical power of the analysis and limit the generalizability of the findings to other sectors or geographical areas. The research was geographically confined to the city of Vlorë, meaning that cultural, economic, and structural differences in other regions may yield different results. Furthermore, the use of self-reported data

through questionnaires may have introduced subjective bias in the assessment of both performance and employee engagement. Finally, other potentially influential factors such as leadership style, organizational climate, or technological integration were not included in the regression model, even though they could significantly affect sustainable organizational performance.

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