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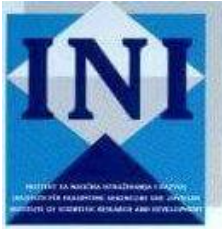
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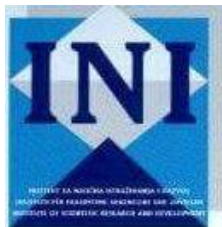
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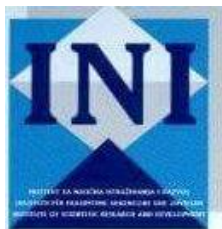


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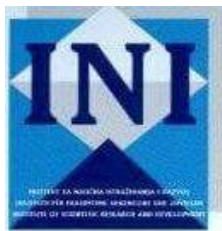
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ASSESSING THE IMPACT OF GREEN FINANCE ON SUSTAINABILITY IN EMERGING MARKETS: TRENDS, CHALLENGES, AND FUTURE PROSPECTS (2000–PRESENT)

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Abstract

Green finance has emerged as a critical mechanism for driving sustainable development, particularly in emerging markets (EMDEs), which often face unique environmental and socio-economic challenges. This research examines the evolution, impact, and future of green finance in these regions from 2000 to the present, synthesizing insights from academic research, industry reports, and policy analyses. Green finance encompasses a range of financial instruments, policies, and strategies designed to channel investments into environmentally sustainable projects and initiatives, with the overarching goal of mitigating climate change, promoting resource efficiency, and fostering inclusive growth. The historical trajectory of green finance in EMDEs is marked by significant evolution and increasing sophistication. Starting in the early 2000s with limited adoption and a focus on traditional project finance, it has progressed through the rise of green bonds and policy frameworks (2011-2015) to the era of global commitments and sustainable finance (2016-Present), driven by the Paris Agreement and Sustainable Development Goals. Despite this progress, systemic challenges persist, including data and regulatory fragmentation, significant financing gaps (particularly for nature-based solutions (NbS) and transition finance), institutional misalignment, and integrating social dimensions into green finance initiatives. To accelerate the transition to a sustainable and low-carbon economy, emerging markets must overcome these challenges and leverage emerging opportunities in green finance. This requires scaling nature-based solutions, strengthening regulatory coherence through harmonized green taxonomies and mandated climate-related financial disclosures, fostering technology and innovation, and promoting cross-border collaboration. By integrating climate considerations into all capital allocation decisions, the financial industry can play its role in the long-term process of reallocation of capital needed to support the transition.

Keywords: Green Finance; Emerging Markets; Sustainable Development; Climate Change Mitigation; NbS

1. Introduction

Green finance has emerged as a critical mechanism for driving sustainable development, particularly in emerging markets, which often face unique environmental and socio-economic challenges. This research examines the evolution, impact, and future of green finance in these regions from 2000 to the present, synthesizing insights from academic research, industry reports, and policy analyses. Green finance encompasses a range of financial instruments, policies, and strategies designed to channel investments into environmentally sustainable projects and initiatives, with the overarching goal of mitigating climate change, promoting resource efficiency, and fostering inclusive growth. The effectiveness of green finance in emerging markets is contingent upon addressing systemic challenges, leveraging innovative solutions, and fostering collaboration among stakeholders. This introduction sets the stage for a detailed exploration of historical trends, current challenges, and future prospects of green finance, emphasizing its pivotal role in achieving sustainability. (IFC, 2023; Mudalige, 2023)

2. Historical Trends in Green Finance and Sustainability

The historical trajectory of green finance in emerging markets is marked by significant evolution and increasing sophistication. Starting in the early 2000s, the concept of green finance began to gain traction, driven by growing awareness of climate change and environmental degradation. However, the initial stages were characterized by limited adoption and a focus on traditional project finance with some environmental considerations. (IFC, 2023; Tansan et al., 2023)

2.1. Early Adoption and Project Finance (2000-2010)

During the first decade of the 21st century, green finance in emerging markets was largely confined to a few pioneering initiatives, primarily centered around renewable energy projects. These projects often involved international development finance institutions (DFIs) and multilateral organizations providing concessional loans and grants to support investments in solar, wind, and hydropower. For instance, the World Bank and the Asian Development Bank played crucial roles in financing early renewable energy projects in countries like India, China, and Brazil. (IFC, 2023)

However, the scale of green finance during this period remained limited, with a lack of standardized definitions, regulatory frameworks, and market infrastructure. Environmental considerations were often integrated into project finance on an ad-hoc basis, rather than being systematically embedded into financial decision-making. Energy security also raises here as a pillar of sustainable development and is directly linked to environmental protection, employment, and social equity. Moreover, there was limited participation from domestic financial institutions and private sector investors, who often perceived green investments as risky and lacking in commercial viability. (Goel et al., 2022; Mudalige, 2023; Nešković & Bylo, 2023)

2.2. Rise of Green Bonds and Policy Frameworks (2011-2015)

Based on the reports of IFC (2023) and Perry World House (2025) the period from 2011 to 2015 witnessed a significant acceleration in the development of green finance in emerging markets, driven by the emergence of green bonds as a mainstream financial instrument and the increasing

adoption of policy frameworks to support green investments. Green bonds, which are debt instruments specifically earmarked to finance environmentally sustainable projects, gained popularity among issuers and investors seeking to align their financial activities with environmental objectives. China emerged as a key player in the green bond market, with the first Chinese green bond issued in 2014. The Chinese government also introduced a series of policy measures to promote green finance, including guidelines for green bond issuance, preferential lending rates for green projects, and environmental regulations to encourage corporate sustainability. Other emerging markets, such as India, Brazil, and South Africa, also began to develop their green bond markets and policy frameworks, albeit at a slower pace. The growth of green bonds during this period facilitated the mobilization of significant capital flows into renewable energy, energy efficiency, sustainable transportation, and other green sectors. For example, green bonds were used to finance large-scale solar power plants in India, wind farms in Brazil, and energy-efficient buildings in South Africa. The increasing availability of green finance also helped to drive down the cost of capital for green projects, making them more competitive with traditional investments.

2.3. Global Commitments and Sustainable Finance (2016-Present)

The adoption of the Paris Agreement in 2015 and the Sustainable Development Goals (SDGs) in 2016 marked a watershed moment for green finance in emerging markets, catalyzing further growth and innovation. These global commitments provided a clear framework for aligning financial flows with environmental and social objectives, and spurred governments, financial institutions, and investors to scale up their efforts in green finance. The concept of sustainable finance, which encompasses environmental, social, and governance (ESG) considerations, gained prominence during this period, reflecting a broader recognition of the interconnectedness between financial performance and sustainability outcomes. ESG integration became increasingly common among investors, who began to incorporate environmental and social factors into their investment analysis and decision-making processes. (Andreeva et al., 2018; IFC, 2023)

Emerging markets witnessed a proliferation of sustainable finance initiatives, including the development of green taxonomies, sustainable banking principles, and ESG disclosure frameworks. Green taxonomies, which define and classify environmentally sustainable activities, were developed in countries like Colombia, Mexico, and South Africa to provide clarity and guidance for green investments. Sustainable banking principles were adopted by financial institutions in countries like Nigeria and Brazil to promote responsible lending and investment practices. ESG disclosure frameworks were introduced in countries like India and China to enhance transparency and accountability in corporate sustainability reporting (IFC, 2023; Mudalige, 2023).

The increasing sophistication of green finance in emerging markets has also led to the emergence of innovative financial instruments, such as sustainability-linked loans (SLLs), which incentivize borrowers to achieve specific sustainability targets by linking the interest rate to their performance. SLLs have been used to finance a variety of green and social projects in emerging markets, including renewable energy, water management, and healthcare (Tansan et al., 2023).

2.4. Data on Green Finance Trends

To provide a clearer picture of the trends, the following table summarizes key indicators of green finance development in emerging markets from 2000 to the present.

Table 1: Key Indicators of Green Finance Development in Emerging Markets (2000-Present)

Indicator	2000-2010	2011-2015	2016-Present
Green Bond Issuance	Limited	Increasing	Significant Growth
Policy Frameworks	Ad-hoc	Developing	Comprehensive
ESG Integration	Minimal	Emerging	Mainstream
Sustainable Finance Initiatives	Few	Growing	Proliferation
Innovative Instruments	Rare	Limited	Increasing
Regional Focus	Project-Specific	China, India, Brazil	Broadening Across Regions

Source: (Andreeva et al., 2018; Franczak & Warner, 2025; Goel et al., 2022; IFC, 2023; Mudalige, 2023) information elaborated by the author

This table highlights the progressive development of green finance, moving from limited project-specific initiatives to comprehensive, mainstreamed practices.

3. Current Challenges

Despite the significant progress in green finance in emerging markets, numerous challenges persist that impede its effectiveness and scalability. These challenges span data and regulatory fragmentation, financing gaps, institutional misalignment, and social considerations. (Demekas, 2023; IFC, 2023)

Table 2: Summary of Current Challenges in Green Finance in Emerging Markets

Challenge	Description
Data Gaps	Lack of reliable data on climate risks, environmental impacts, and performance of green investments.
Regulatory Fragmentation	Varying definitions, standards, and disclosure requirements across regions.
Financing Gaps	Underinvestment in nature-based solutions (NbS) and transition finance.
Institutional Misalignment	Inconsistent climate risk management practices among central banks, regulators, and corporations.

Challenge	Description
Social Considerations	Ensuring green projects benefit local communities and promote social equity.

These challenges highlight the complexities involved in scaling up green finance and achieving meaningful sustainability outcomes.

3.1. Data and Regulatory Fragmentation

One of the most pressing challenges is the lack of comprehensive and reliable data on climate risks, environmental impacts, and the performance of green investments (see Table 2). Over 80% of financial institutions in EMDEs lack the necessary tools and expertise to assess climate-related exposures and risks accurately. This data gap hinders the ability of financial institutions to integrate climate considerations into their lending and investment decisions effectively (Goel et al., 2022). For example, in Mexico, banks struggle to quantify the benefits of nature-based solutions (NbS) such as carbon sequestration, flood prevention, and biodiversity conservation. This lack of data makes it difficult to assess the economic viability and environmental impact of NbS projects, thereby hindering investment (Mudalige, 2023).

Regulatory fragmentation is another significant challenge, with varying definitions, standards, and disclosure requirements for green finance across different regions and countries. This creates compliance burdens for financial institutions and investors operating in multiple jurisdictions and undermines the credibility and comparability of green financial products (Goel et al., 2022; Mudalige, 2023). Investment in modern energy technologies requires regulatory clarity and a stable investment environment, particularly critical in post-conflict and transitioning regions like the Western Balkans (Nešković & Bylo, 2023).

In Latin America, the absence of a unified green taxonomy forces firms to navigate conflicting standards, increasing transaction costs and discouraging cross-border investments. The lack of standardized definitions for "sustainable activities" also creates opportunities for greenwashing, where companies exaggerate or misrepresent the environmental benefits of their products or projects (Mudalige, 2023). On the other hand, the energy community provides a unified legal and regulatory framework aimed at building energy infrastructure and attracting investment in renewable energy and environmental protection (Nešković & Bylo, 2023).

3.2. Financing Gaps

Significant financing gaps persist in emerging markets, particularly for nature-based solutions (NbS) and transition finance. NbS, which involve the use of natural ecosystems to address climate change and biodiversity loss, face a \$700 billion annual funding shortfall globally. Private sector participation in NbS remains limited, especially in regions like Latin America, due to perceived risks and long gestation periods. (World Bank, 2022)

Investors often prefer cheaper, short-term alternatives like gray infrastructure (e.g., concrete dams and levees) over NbS (e.g., mangrove restoration and watershed management), even though NbS can provide more cost-effective and resilient solutions in the long run. The long-time horizons required for NbS to deliver tangible benefits (e.g., reforestation) also deter investors seeking quick returns. (UN, 2018)

Transition finance, which supports the shift from high-carbon to low-carbon activities, also faces significant financing gaps in emerging markets. Many emerging economies, such as South Africa and Indonesia, remain heavily reliant on fossil fuels, with 60-80% of their energy systems dependent on coal (Goel et al., 2022). Transitioning these economies to cleaner energy sources requires massive investments in renewable energy, energy storage, and grid infrastructure (Hoang et al., 2021).

However, as Goel et al. (2022) explain that transition finance remains limited due to misaligned incentives, weak government strategies, and the perceived risks of investing in industries that are undergoing structural change. Financial institutions are often reluctant to finance the decommissioning of coal-fired power plants or the development of alternative industries for coal-dependent communities.

3.3. Institutional Misalignment

Institutional misalignment between central banks, financial regulators, and corporate sustainability initiatives poses another challenge to green finance in emerging markets. Central banks in EMDEs often lag behind their counterparts in advanced economies in integrating climate risk management into their supervisory frameworks. Only 30% of surveyed institutions receive actionable regulatory guidance on climate risk, leading to inconsistent risk disclosure practices (Goel et al., 2022).

Financial regulators may lack the capacity or political will to enforce environmental regulations and promote sustainable finance practices. This can result in weak oversight of green investments and a lack of accountability for environmental damage (IFC, 2023).

Corporate sustainability initiatives in emerging markets often prioritize compliance with environmental regulations over systemic change. Companies may engage in symbolic gestures of sustainability, such as publishing glossy reports or participating in voluntary initiatives, without making fundamental changes to their business models or operations. For example, executives at HSBC and Banorte have highlighted the disconnect between NbS and profit motives, questioning the business case for investing in nature-based solutions. This reflects a broader challenge of aligning corporate incentives with environmental sustainability. (IFC, 2023; Mudalige, 2023) In countries in transition like there is no strategy for the development and application of knowledge in agricultural production, therefore the gap between R&D and agriculture is wide (Nešković et al., 2016).

3.4. Social Considerations

Integrating social dimensions into green finance initiatives remains a critical challenge. Ensuring that green projects benefit local communities, promote social equity, and do not exacerbate existing inequalities is essential for the long-term sustainability of green finance (IFC, 2023).

4. Future Prospects

To accelerate the transition to a sustainable and low-carbon economy, emerging markets must overcome these challenges and leverage emerging opportunities in green finance. This requires a multi-faceted approach that encompasses scaling nature-based solutions, strengthening regulatory coherence, fostering technology and innovation, and promoting cross-border collaboration, as reflected in Table 3 (Franczak & Warner, 2025).

Table 3: Future Prospects for Green Finance in Emerging Markets

Prospect	Description
Scaling NbS	Innovative financing models that combine public guarantees with private capital to enhance climate resilience and protect natural resources.
Regulatory Coherence	Harmonizing green taxonomies and mandating climate-related financial disclosures to reduce greenwashing and facilitate cross-border investments.
Technology and Innovation	Digital tools and AI-driven platforms to enhance transparency, improve climate risk modeling, and support sustainable agricultural practices.
Cross-Border Collaboration	Regional alliances and multilateral platforms to share best practices, mobilize capital, and provide financial assistance to vulnerable countries.

These prospects offer a vision for how green finance can drive sustainable development and create a more resilient and equitable future.

4.1. Scaling Nature-Based Solutions

Nature-based solutions (NbS) offer a promising pathway for addressing climate change, biodiversity loss, and sustainable development in emerging markets. NbS have the potential to generate \$10 trillion in global economic benefits by 2030, while also providing essential ecosystem services such as clean water, flood control, and carbon sequestration. (UN, 2024)

Scaling NbS requires innovative financing models that combine public guarantees with private capital. Blended finance approaches, which leverage public funds to de-risk private investments, can help to attract institutional investors and commercial banks to NbS projects. (Mudalige, 2023; UN, 2024)

For example, regenerative agriculture in Brazil, which involves restoring degraded soils and promoting biodiversity-friendly farming practices, could sequester significant amounts of carbon while also improving crop yields and farmer livelihoods. Peatland restoration in Southeast Asia, which involves rewetting drained peatlands to prevent fires and release of carbon dioxide, could reduce greenhouse gas emissions and protect biodiversity (Franczak & Warner, 2025).

The Climate Solutions Partnership aims to mobilize \$1.5 trillion for such initiatives by providing technical assistance, risk guarantees, and concessional financing. By scaling up investments in NbS, emerging markets can enhance their resilience to climate change, protect their natural resources, and create new economic opportunities. (Mudalige, 2023)

4.2. Strengthening Regulatory Coherence

Harmonizing green taxonomies and mandating climate-related financial disclosures are essential steps for strengthening regulatory coherence in green finance. Green taxonomies provide a common language and framework for identifying and classifying environmentally sustainable activities, reducing the risk of greenwashing and facilitating cross-border investments. Climate-related financial disclosures, such as those aligned with the Task Force on Climate-related Financial Disclosures (TCFD) recommendations, enhance transparency and accountability by requiring companies to report on their climate risks and opportunities. TCFD-aligned reporting can help investors to assess the climate resilience of their portfolios and make more informed investment decisions. Colombia's 2022 green taxonomy and Nigeria's sustainable banking principles offer regional blueprints for strengthening regulatory coherence in green finance 2. These initiatives demonstrate the feasibility of developing standardized frameworks that promote sustainable lending and investment practices. (IFC, 2023)

4.3. Technology and Innovation

Technology and innovation play a crucial role in accelerating the growth and effectiveness of green finance in emerging markets. Digital tools, such as blockchain, can enhance transparency and traceability in green bond markets, reducing the risk of fraud and greenwashing. AI-driven platforms can improve climate risk modeling by analyzing vast amounts of data to identify vulnerabilities and assess the potential impacts of climate change. Economic intelligence also represents a strategic tool to undermine competitors and target agricultural companies' intellectual capital (Franczak & Warner, 2025; IFC, 2023; Nešković et al., 2016).

Pilot projects in India and Kenya are testing fintech solutions for smallholder farmers adopting sustainable agricultural practices. These solutions provide farmers with access to credit, insurance, and information, enabling them to invest in climate-resilient crops, improve soil health, and reduce their environmental footprint. (Franczak & Warner, 2025)

4.4. Cross-Border Collaboration

Cross-border collaboration is essential for sharing best practices, mobilizing capital, and de-risking investments in green finance. Regional alliances, such as the ASEAN Green Finance Network,

provide platforms for countries to exchange knowledge, develop common standards, and promote cross-border green investments. (*Asean 2030*, 2016)

Multilateral platforms, such as COP28's Loss and Damage Fund, can provide financial assistance to emerging markets that are particularly vulnerable to the impacts of climate change (UN, 2023b). The Loss and Damage Fund aims to provide compensation to countries that have suffered irreparable damage from climate-related disasters, such as floods, droughts, and sea-level rise (UN, 2023a).

By fostering cross-border collaboration, emerging markets can leverage the expertise and resources of international partners to accelerate their transition to a sustainable and low-carbon economy (Franczak & Warner, 2025).

5. Conclusion

Green finance has emerged as a critical driver of sustainability in emerging markets, catalyzing incremental progress toward a low-carbon and climate-resilient economy. Despite the progress, systemic challenges—data gaps, regulatory misalignment, and financing shortfalls—require urgent attention. Future success hinges on localized policy frameworks, innovative financial instruments, and global partnerships. As one expert notes, "The goal must be to green the entire economy, not just the financial system". By 2050, integrating climate considerations into all capital allocation decisions could render "green finance" obsolete, marking a true transition to sustainability.

Recommendations for Policymakers:

1. Develop granular datasets on climate risks and NbS impacts to improve risk assessment and investment decisions.
2. Introduce tax incentives and guarantees to attract private capital to green projects, particularly NbS and transition finance.
3. Foster regional coalitions to harmonize standards, share technical expertise, and promote cross-border green investments.
4. Mandate climate-related financial disclosures to enhance transparency and accountability.
5. Support technology and innovation to improve climate risk modeling and facilitate sustainable practices.

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THE ROLE OF TECHNOLOGY AND INNOVATION IN THE DEVELOPMENT OF SUSTAINABLE TOURISM IN THE CONTEXT OF CLIMATE CHANGE AND SPATIAL PLANNING

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Abstract:

Tourism in Montenegro represents one of the key economic sectors, but it increasingly requires the application of innovative technologies that enable sustainable development, minimize negative ecological impacts, and ensure efficient spatial planning. National parks and protected areas are key resources for the development of ecologically responsible tourism, with technology and innovation being essential for their preservation and enhancement. This paper explores strategies and models of sustainable development, including the concept of carrying capacity, zoning, permitting, and visitor management, as well as the application of smart technologies in monitoring the impact of tourism on the environment. Special emphasis is placed on digitalization, the use of artificial intelligence, and Geographic Information Systems (GIS) for monitoring climate change and sustainable planning of tourist destinations. The results highlight the need for integrating technological solutions into sustainable tourism strategies to ensure long-term protection of natural resources, stimulate economic development, and preserve biodiversity.

Keywords: sustainable tourism, innovation, climate change, national parks, spatial planning, technology.

ULOGA TEHNOLOGIJE I INOVACIJA U RAZVOJU ODRŽIVOG TURIZMA U USLOVIMA KLIMATSKIH PROMJENA I PROSTORNOG PLANIRANJA

Apstrakt:

Turizam u Crnoj Gori predstavlja jednu od ključnih ekonomskih grana ali i sve više zahtijeva primjenu inovativnih tehnologija koje omogućavaju održiv razvoj, minimiziranje negativnih ekoloških uticaja i efikasno prostorno planiranje. Nacionalni parkovi i zaštićena područja predstavljaju ključne resurse za razvoj ekološki odgovornog turizma, pri čemu su tehnologija i inovacije od suštinskog značaja za njihovo očuvanje i unapređenje. Ovaj rad istražuje strategije i modele održivog razvoja, uključujući koncept nosećeg kapaciteta, zoniranje, izdavanje dozvola i menadžment posjetilaca, kao i primjenu pametnih tehnologija u praćenju uticaja turizma na životnu sredinu. Poseban fokus je na digitalizaciji, upotrebi vještačke inteligencije i GIS (geografsko informacioni sistemi) sistema za monitoring klimatskih promjena i održivo planiranje turističkih destinacija. Rezultati ukazuju na potrebu za integracijom tehnoloških rješenja u strategije održivog turizma, kako bi se obezbijedila dugoročna zaštita prirodnih resursa, podstakao ekonomski razvoj i očuvao biodiverzitet.

Ključne riječi: održivi turizam, inovacije, klimatske promjene, nacionalni parkovi, prostorno planiranje, tehnologija,

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1 Introduction

National parks are the cleanest, ecologically most valuable areas of preserved nature, with diverse functions and contents. Their establishment and protection represent the only contact between people and nature. National parks are tourist attractions, major tourist resources, and an important link in international tourism. Tourism planning and management are interconnected and conditional on the impacts of tourism on the environment. Strong control results in quality management and a positive impact of tourism on managing tourist destinations. To eliminate and mitigate the negative consequences of tourism and encourage positive effects, sustainable tourism development applies management and planning strategies.

There are several strategies and planning models, and the most commonly applied include:

- **Carrying capacity** – a concept that refers to the limitations in tourism, i.e., the maximum use of any tourist destination without causing negative consequences to resources, reducing visitor satisfaction, or causing adverse effects on the local population, society, economy, and culture of a certain area (Popesku, 2008). This concept emphasizes the importance of considering how many people can visit a certain area without affecting wildlife, the quality of water or air.

In national parks, carrying capacity refers to the survival of a particular species population within a defined habitat, without causing harm to the ecosystem on which it depends.

- **Limits to Acceptable Change (LAC model)** – relates to desirable ecological conditions.

- **Zoning** – connecting types of development or activities with specific zones as specified in plans. In Montenegro, zoning is conducted within national parks. Each zone has a specific level of protection and allowed activity levels. In Montenegro, zoning is done in three zones. Zone I - protection zone: a high level of protection, of special significance for preservation, and access to visitors is strictly prohibited. Zone II - a more liberal protection zone that allows visits to tourists but only on specific trails and under defined rules of behavior. This zone also allows the restoration of seasonal settlements, grazing, agriculture, and space arrangements aimed at improving the tourist offer. Zone III - protection zone: a more liberal zone where, in accordance with ecological standards, all tourism and recreational activities can take place. In this zone, it is possible to build tourist facilities that comply with the spatial plan.

- **Issuance of permits** – within the park, permits are issued to tourists that vary in price and the range of activities they cover, depending on the zone within the park. Permit holders are also obligated to ensure that their activities will not negatively impact the environment and must behave according to the guidelines established by the park. The revenues from permits are used by the park to restore and improve tourist facilities and maintain them.

- **Environmental quality standards** – based on legal regulations. In national parks, the use of specific building materials that do not disrupt the park's appearance is strictly defined.

- **Strategic environmental impact assessment** – integrates the goals and principles of sustainable development into spatial and sectoral planning (traffic, energy, water management, agriculture, forestry, tourism, etc.), to avoid or limit negative impacts of planning decisions on the environment (Popesku, 2008). Environmental audits address the resources used in production and waste management.

- **Visitor management** – regulates the number, movement, and activities of tourists to keep them away from sensitive areas. Visitors must be familiar with the rules of behavior within national parks, as well as the sanctions resulting from non-compliance.

- **Environmental adaptation** – in certain parts of parks, in order to protect wildlife and vegetation, concrete walls, walking paths, erosion-preventing nets, and similar measures may be installed.
- **Educational and marketing strategies** – aimed at raising tourists' awareness about environmental conservation. These strategies focus on activities that will not harm the environment. Employee education includes ethical codes for tourists concerning the environment and behavioral rules.
- **Research and control** – aim to improve the understanding of the relationship between tourism and the environment, to promptly identify factors that negatively impact the environment and prevent their further development.

Effective environmental management is essential for successful management of tourist destinations. It includes the necessary knowledge and skills to protect vegetation, air, and water.

Modern trends in tourism show an increasing role of sustainability in the industry. Sustainable development is an integral part of the concept of national parks that create a new type of tourism, which is increasingly becoming the future of all forms of business. Protected areas are sustainability moderators for development design in the areas they occupy. Montenegro's national parks, with their diversity of potentials, can fully meet the modern requirements of global tourism and, in the long term, occupy a position as a world destination by applying the concept of sustainable development (Janković, Luburić, & Šofranac, 2017).

Sustainable tourism ensures a high level of tourist satisfaction, providing them with an unforgettable experience while promoting tourist destinations. Marketing promotes tourist destinations and services, and national parks especially contribute to the positive impact of tourism on the environment. They represent aspects of tourism in line with the principle of sustainability. Sustainability is a key strategy in managing such tourist destinations, in which the principles of restoration, preservation, and protection of the physical environment are applied. Montenegro has implemented a sustainable development strategy, an important document promoting sustainable development principles.

"However, one of the main obstacles limiting faster progress relates to insufficient support for environmental protection plans and programs, limited implementation of regulations. The prolonged duration of the economic crisis significantly impacts the slower recovery of the economy, leading to budgetary constraints for addressing development issues.

Inconsistent policies are being implemented in the fight against poverty, corruption, social protection reforms, education, healthcare, and environmental policies. In protected areas, the main limitations are related to resolving potential inconsistencies in the process of designating and placing certain territories under protection through consultations with all stakeholders and securing necessary resources for proper management. Improvements in this area require substantial investments: it is estimated that the investment in infrastructural projects in relevant strategic documents is around 560 million euros for the period up to 2028 (Janković, Luburić, & Šofranac, 2017).

Sustainability is also based on the development of ecological awareness, as the greatest problem arises from unregulated waste dumps, illegal bird hunting in Ramsar areas, and deforestation in national parks. Therefore, in the future, state policy should be directed towards adequate political, financial, and human resource support for achieving the target values of sustainable development improvements. The National Sustainable Development Strategy foresees the protection of natural areas covering 10% of the national territory and protection of at least 10% of coastal areas, along with the improvement of the legal framework for biodiversity protection, strengthening human capacity building, and an efficient biodiversity monitoring system. The public company "National Parks of Montenegro" is responsible for the protection and management of Montenegro's national parks.

National parks are the result of the positive impact of tourism on the environment, based on sustainability, the most important strategy in managing such tourist destinations. Sustainability includes the restoration, preservation, and protection of the physical environment. Tourism can serve as an initiator of the restoration of culturally and historically significant sites. Thus, all activities conducted within national parks are adapted to the environment in which they are located. NP management, following market demands, views them according to the sustainable development of the destination. NP aim to protect plant and animal species in their natural habitats. They also serve as unique natural reserves for the preservation of cultural and historical heritage.

In scientific terms, national parks serve as sites for research and its application to improving sustainability in various life areas. They are important for educating tourists and staff, as well as for developing ecological awareness, which is crucial for a sensitive planet.

In tourism, preserving productive resources, especially renewable resources, is crucial for ensuring open access to the preservation of flora and fauna, sustainability of food and material sources, avoiding the use of harmful materials for the environment, reducing waste and energy consumption, as tourism expansion results in environmental degradation. Many resources, such as national parks and wildlife reserves, natural reserves, and forests, are vital for tourism. Additionally, the various landscapes that form the backdrop of tourism are also impacted by human activity. This is our assertion that the so-called Bio-economic principle of sustainable highest income, based on common economic conditions and recognizing Bio-economic processes, could be helpful. Proper resource management in tourism is key to success (Janković, Luburić, & Šofranac, 2017).

Around 7% of Montenegro's territory is protected by national parks. The main deficiencies in managing Montenegro's national parks are the lack of a national strategic approach to expanding protected areas, limited knowledge and experience in establishing and managing other categories of protected areas, less attention to sites with lower levels of protection, except for national parks, the underutilization of the northern region's tourist potential, and the need for better valorization of national parks, as well as a more comprehensive approach to cultural heritage (Janković, Luburić, & Šofranac, 2017).

It is recommended that in national parks, small, exclusive, high-quality hotels be built or integrated into the landscape – eco lodges. New funding sources (donations, international aid) should be sought. A master plan should be developed for each national park to plan future improvements and developments. The plan includes all the facilities and capacities necessary for visitors and park operations. This includes visitor centers, information desks, offices, camping areas, parking, roads, trails, utilities, and many others, as outlined in the Master Plan (2008) and Tourism Development Strategy.

In national parks, technological solutions for sustainable tourism should also be introduced, such as smart infrastructure and energy efficiency, including systems to optimize electricity consumption in tourist facilities, renewable energy sources, and solar panels in tourist complexes, as well as smart heating and cooling systems that reduce electricity consumption.

Digitalizing the tourist experience brings numerous benefits for travelers as well as for environmental protection. Virtual and augmented reality (VR/AR) allow for the exploration of destinations in an environmentally friendly way, reducing the need for physical travel and thus lowering harmful gas emissions. Digital guides and mobile applications replace printed materials, significantly reducing paper consumption and contributing to the preservation of the environment. Technologies also improve the management and monitoring of tourist behavior in real-time, ensuring compliance with environmental standards and minimizing negative impacts.

According to the experiences of countries where sustainable tourism is implemented, Montenegro's national parks should develop thematic trails focusing on cultural and historical values, offer interactive tours based on new technologies (augmented reality, VR), and encourage tourists to participate in conservation efforts like planting trees

or cleaning up natural areas. The future of national parks in Montenegro depends on the consistent implementation of sustainability strategies and creating a balance between preserving nature and benefiting from tourism.

The key goal is to educate tourists and locals on the importance of protecting natural resources while simultaneously fostering economic development. One of the strategies should be creating educational programs, lectures, and interactive activities aimed at educating the public and tourists about sustainability, climate change, wildlife conservation, and other relevant topics. It would also be essential to integrate sustainable practices into everyday life in these areas, such as encouraging the use of renewable energy, eco-friendly transportation, waste reduction, and sustainable food production. By adopting these measures, national parks can thrive as a sustainable destination, protecting both their natural and cultural heritage for future generations.

2 Field of Research

The subject of this research focuses on tourism management in the national parks of Montenegro, with an emphasis on the application of sustainable development in tourism. The study examines the role of national parks as key natural resources and tourist destinations, analyzing various strategies and tourism management models that can minimize the negative impacts of tourism on the environment while simultaneously enhancing the economic and social development of local communities.

Special attention is given to the planning and implementation of sustainable tourism practices, such as destination carrying capacity, visitor management strategies, educational programs, and ecological initiatives that enable a balance between nature conservation and tourism. The research also explores the challenges and obstacles in achieving sustainable tourism, as well as recommendations for improving the management of national parks in accordance with sustainability principles.

3 Methodology

In the preparation of this study, a combination of qualitative and quantitative research methods was used. The applied methods, i.e., the basic research procedure, consist of data collection from literature and documents using content analysis. An analysis of secondary data sources was conducted through a review of available literature and strategic documents related to tourism and nature protection in the national parks of Montenegro. Additionally, a field survey was carried out to collect relevant data. This methodology provides insight into the current state of sustainable tourism and serves as a basis for proposing concrete measures to improve sustainable tourism management in Montenegro's national parks.

4 Research Results

The study included 40 respondents and was conducted during the period of January–February 2025. The significance of this survey, as a quantitative research method, lies in supplementing existing data and providing new insights. The survey offers an understanding of attitudes and opinions regarding the application of innovations and technology in the development of sustainable tourism, with a particular emphasis on spatial planning and climate change. By analyzing the survey results, we arrive at the following conclusions. The majority of respondents believe that technology and innovations are highly important for the development of sustainable tourism. A total of 82.5% of respondents consider the impact of climate change on tourism to be significant, with rising temperatures, increasing year after year, identified as the greatest challenge. When it comes to sustainable technologies, 70% of respondents recognize solar panels as highly important for reducing negative environmental impacts, followed by waste

management systems at 55%. However, there are numerous obstacles to implementing new technologies, such as high costs and a lack of political support. A significant number of respondents see investment in new technologies as a challenge, particularly in less developed tourist destinations. Despite this, 75% of respondents are optimistic that tourism will become more sustainable in the coming years. Based on this survey, strategies and policies can be developed to further enhance sustainability in tourism and integrate technology into the development of tourist destinations.

5 Conclusion

The preservation of natural resources, economic development, and the enhancement of the tourism offer can only be achieved if sustainable tourism is established as a key strategy. National parks, as protected areas, play a crucial role in this process by balancing tourism growth with environmental protection. Minimizing the negative impacts of tourism is possible through the implementation of innovative technologies such as digitalization, GIS systems, artificial intelligence, and smart infrastructure solutions. Past experiences show that over-tourism and the unsustainable use of natural resources can lead to negative consequences, including ecosystem degradation, pollution, and the loss of the authenticity of tourist destinations. At the same time, poor infrastructure and a lack of innovative solutions further hinder the achievement of sustainable development goals. To overcome these challenges, it is necessary to introduce modern tourism management methods, including the application of digital technologies and the adoption of ecological standards in the tourism sector. The use of smart technologies such as GIS analysis, digital tracking of tourist flows, artificial intelligence, and sustainable transport can significantly contribute to optimizing tourism activities and protecting natural assets. A particularly important aspect of sustainable tourism involves raising ecological awareness among tourists and local communities, encouraging responsible use of natural resources, and preserving Montenegro's unique natural and cultural heritage. In addition to these measures, it is essential to improve the legislative framework and enforce environmental regulations to ensure that tourism development does not harm ecosystems or compromise the long-term sustainability of destinations. Diversifying the tourism offer through the promotion of rural, eco, and adventure tourism can reduce pressure on coastal regions and enable a more balanced development of tourism across the country. Sustainable tourism is not only an imperative for nature conservation but also an opportunity for Montenegro's economic progress. If appropriate strategies, digital innovations, and ecological standards are implemented, Montenegro has the potential to become a leading destination for sustainable tourism in the Balkans.

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MARKET DETERMINANTS OF SUSTAINABLE TOURISM WITH THE IMPLEMENTATION OF THE CRS AND DMS PROJECT IN THE HOTEL INDUSTRY OF THE WESTERN BALKAN COUNTRIES

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Abstract:

The implementation of information technologies, among others, represents a significant determinant in the concept of the development of tourism and the hotel industry. The wishes of tourists are changing, which has encouraged of the Western Balkan countries to create a tourist offer filled with attractive content.

Modern trends in the global tourism market are in favor of countries of subregion as a tourist destination. The tourists several short vacations during the year, excursions, return to nature and active vacation, rich cultural heritage, authentic experience and high quality products. The result is a constant increase in the number of arrivals and overnight stays of domestic and foreign tourists, as well as foreign exchange inflows. By dividing the work of the CRS and DMS system of travel agencies, tour operators and airlines, computer solutions for hotel business are also made possible. In addition to hotel companies, solutions for managing the work of tourist destinations were created as a unique extension of marketing strategies and operational business. Thanks to the adopted European development strategies, tourism attracts a large part of financial resources for new investments, training of the workforce and creating a more favorable image of our country in the world.

Key words: market determinant, tourism, CRS concept, DMS system, economy, hotel industry, Western Balkan

INTRODUCTION

Given that tourism has become a generator of the economic, social and social development of most countries in the world, including ours, it is necessary to look at its multiplier effects (effects that are reflected by the development of tourism on other economic branches such as: traffic, agriculture, trade, industry, construction, small businesses, etc.), as well as its share in the total GDP, the number of employees in tourism, etc.

The positive effects of the development of tourism are reflected in the development of underdeveloped regions (equalizes regional underdevelopment), the creation of new jobs, which is reflected in the reduction of unemployment and poverty, and the improvement of the living standards of the local population, then in the promotion of investments, development of infrastructure, etc.

Tourism, as a global socio-economic phenomenon, has recorded constant and stable growth in the last six decades. On the other hand, further stable and dynamic growth of international tourism is predicted with the achievement of stable growth of international tourist traffic and income from international tourism. Contemporary trends in the development of international tourism are based on the peculiarities of tourist demand, as well as on the appropriate adjustment of the tourist offer. Bearing that in mind, it can be assessed that tourism is in the process of constant and strong changes. Changes within tourism arise, primarily, from

changing structural elements, that is, the structural transformation of tourism as a whole. The basic changes, which make tourism extremely turbulent, concern the significant action of factors from the environment, connected with an increasingly pronounced awareness of the need to preserve the basis of its development - space, that is, the natural environment.

The aforementioned changes have caused the need for new considerations in relation to the development of tourism, which are based on two basic postulates - the protection and preservation of natural and cultural resources, on which the development of tourism is based, and highlighting the problem of the social costs of tourism development. In essence, it is about applying the concept of sustainable development of tourism, that is, about building a sustainable world through tourism.

Global requirements for business improvement, which the computer era has brought into every pore of society, must certainly be met by the tourism industry. In the classic chain, guest-agency-accommodation-entertainment, everyone has their own task and methods for its fulfillment. Within the hotel industry, information technology (IT) has gone the furthest, especially in larger and higher-quality facilities, and enabled the connection of a number of subsystems into a single system, and also a number of hotels into an organized whole. The availability and quality of the human factor are of crucial importance for exploiting the potential that information technology has in the hotel industry. Accordingly, it is of great importance to know how to work on a computer, i.e. information literacy of employees in the hotel industry, without which any information technology potential would be just an expense.

CRS (Computer Reservation System) is a computerized system used to store and manage information, as well as manage travel-related transactions. Although it was created within the airline companies, CRS later expanded to the hotel industry, car rental and other branches of tourism. Companies use this approach to better understand the wants and needs of their customers. Nowadays, tourist organizations develop tourism through destination management information systems (Destination Management System, DMS). The competitiveness of the destination largely depends on the level of development of the DMS system.

To exploit the potential of information technology, the availability of information technology infrastructure and the quality of the human factor are of crucial importance.

1. METHODOLOGY OF SCIENTIFIC RESEARCH

Determinants of tourism development represent significant elements in the modern concept of economic development of the tourism industry. They represent a framework for formulating responses to new challenges and contradictions on the market in the considered area. It is a fact that the subregion of the Western Balkans has enormous resources in all areas of public life, while innovative trends in the sphere of the market economy contribute to the prosperity of each individual state.

The subject of our research is the analysis of determinants and planning of tourism development with the use of information and communication tools in tourism and the hotel industry. Special emphasis is placed on the implementation of the CRS system and the DMS project in current market circumstances. The aim of the paper is a scientific analysis of the determinants of tourism development in a postmodern environment. In addition, the possibilities of implementing the CRS and DMS concept are analyzed in order to improve the tourist offer and hotel industry in the countries of the Western Balkans. Also, pointing out the importance of innovative trends for achieving stable economic development of countries. The basic hypothesis is: Resources and established determinants of tourism development enable complex opportunities in the tourism and hotel economy. The implementation of information and communication technologies in the considered sphere have an essential importance in the performance of subjects on the

market stage. Auxiliary hypotheses are: 1) The area of the Western Balkans has enormous resources in the field of tourism and improvement of the economic environment; 2) The available information systems, CRS, DMS and others, along with human resources, provide optimal opportunities and perspectives for the development of tourism in individual countries of the subregion.

During the research, known scientific methods and techniques will be implemented. Methods of analysis and synthesis of relevant literature content, descriptive method, comparative, specialization and generalization of selected materials will be used. The scientific justification of the work is reflected in the contribution to the social development of the country from an area that has not been sufficiently researched so far. The social justification of the scientific work means the analysis of the application of innovative postulates for the purpose of improving the tourism industry and the hotel industry for the purpose of economic prosperity, which are of first-class importance for every community, including the countries of the Western Balkans. This is particularly expressed in the current global constellation, burdened with numerous contradictions, which is reflected in all areas of human existence.

1. DISCUSSION AND RESULTS

DETERMINANTS AND PLANNING OF TOURISM DEVELOPMENT

Optimistic assessments of the volume of tourist demand, given, first of all, by the UNWTO, imply their positive influence on the overall relations in the tourist market, considering the dominant position of the demand in relation to the tourist offer. In this context, as the prevailing tendencies on the side of tourist demand, especially in Europe, we can single out:

- refreshment through contrast (tourist trips on the lowland-mountain, city-village, mainland-island, etc.)
- striving for experiences related to cultural-historical heritage and preserved nature, the "green" movement or tourism, which is also called alternative, responsible, "soft", "good" or "new" tourism - refers to tourism in the countryside, in cities, and on the coast. It implies, first of all, clean water, a clean and safe sea, healthy food and unpolluted air, i.e. tourism that is not mass but "friendly" directed towards the natural environment,
- "blue" or nautical movement, i.e. demand (sea cruise using the system of marinas, ports and anchorages),
- the search for places, events and experiences that have a pronounced identity, integrity and diversity,
- the demand for village (rural) and agrotourism - implies staying in different types of accommodation (not exclusively in rural households) and engaging in activities (sports, adventure, challenges, art, handicrafts, etc.),
- demand for health, spiritual, mental renewal and renewal of identity - refers to new forms of health or spa tourism: striving for better condition (recreational activities, sports and exercises, diet, fitness) and the desire for better health through the fight against stress. (Bogetić, Lekić, Antić, 3, 2017)

"Green" tourism, health tourism and tourism related to the natural and cultural environment can be considered, in synchronized action, the backbone of an increasingly significant form of tourism, which is called eco tourism, alternative tourism or responsible tourism. Rural tourism is an important part of this increasingly important form of tourism.

One of the sectors that will be significantly affected by the outbreak of the corona virus is certainly tourism. This refers not only to the reduction of international travel, but also of domestic travel, as well as the accompanying catering activities: restaurants, clubs and cafes. The tourism sector, together with the accompanying activities, is one of the most important sectors in the whole of Europe - at the EU level, it participates in the generation of as much as 10% of GDP. Of course, the participation of tourism is higher in Mediterranean countries due to sea tourism, but winter tourism (mountains and ski resorts) and visits to larger cities are also important. Italy is currently the most affected due to measures that have put the entire country into a kind of supervised quarantine, which can have significant knock-on effects.

A potential positive about this is that there are some indications that the virus can be affected by the sun (so not heat, but UV radiation), and that this will lead to a stabilization of the condition and the withdrawal of the virus as the weather improves, which could ease the situation until the beginning of the peak tourist season in countries that tie tourism to the period when it is possible to swim in the sea (May - October). Whether it will actually come to that is, for now, just speculation.

The complexity of tourism as an economic and social activity requires that the planning and management of tourism development be specific and require special organization at all levels. Tourism development planning is, in essence, a research-based process aimed at optimizing the potential contribution of tourism to human well-being and the quality of the natural/environmental environment. It is carried out on several levels, in accordance with the nature of tourism, where the issue of finding a balance between individual levels of organization is particularly important, especially within tourist destinations (the relationship between state and parastatal bodies at all levels, on the one hand, and on the other hand, the tourism industry).

The concept of sustainable development of tourism can become the basis of purposeful development of tourism in tourist destinations at all levels if its principles are included in the planning process of tourism development, especially strategic, and if they are expressed in strategic development goals. (Gajić, 7, 2024) The basic or priority goals of tourism development, within the planning process, can be very numerous, diverse and conflicting. They can be expressed in economic, social and environmental terms. Accepting the awareness of the need to determine the strategic goals of tourism development, which are broader than the economic ones, implies a greater influence of the public sector, that is, state and parastatal bodies.

ECONOMIC INDICATORS OF THE TOURIST ECONOMY

The direct impacts of tourism on the economy are multiple and we can single out the following: impact on social gross product, impact on the level of development of those economic activities that participate in the formation of the tourism economy, impact on the country's balance of payments with foreign countries, impact on the level of employment of the population and the appropriate level of its standard of living, impact on the socio-economic development of underdeveloped regions, impact on the protection of natural capacities and impact on the rehabilitation of damage caused by inadequate management of natural resources. (Mastilo, 8, 2005)

Tourism is also called the "invisible branch of export" because it provides income to the state and the economy, without anything being directly produced and exported. The consumption of domestic and foreign tourists affects the social product and national income, i.e. gross social product because it stimulates material production, intended for the various needs of tourists. By overflowing part of personal

consumption funds from foreign countries, tourism most directly affects the growth of the already mentioned gross social product.

If we look at some branches of tourism such as coastal, mountain, spa, rural, hunting, congress and try to determine their specificities and their impact on the development of a certain area, we will come to the conclusion that there are many more of their common needs that engage a large number of economic entities. Enhancing, promoting and including an area in the tourist flow drives the economy in order to ensure fast and quality access to that place, accommodation of people, supply of energy and goods to the place, facilities for quality use of tourists' time, maintenance and protection. Last, but not least, is the education (and upbringing) of people who will work in tourist capacities.

In order to realize the tourist offer, the economy can engage in the following projects:

- Construction and maintenance of transport infrastructure: roads for air, water, land automobile and railway traffic,
- Maintenance and construction of energy infrastructure (power plants, transmission lines, substations, energy supply),
- Maintenance and construction of communal infrastructure,
- Construction of accommodation capacities: hotels, private accommodation, camps, ethnic villages,
- Equipping accommodation facilities,
- Providing quality food products,
- Engagement of local agricultural capacities to ensure quality products of the local environment,
- Construction and maintenance of a specific tourist offer: beaches, ski slopes, cable cars, hiking trails and mountaineering routes, local trails and roads...
- Education and training of employees,
- Production of propaganda material and souvenirs,
- Promotion – advertisement of tourist offer,
- Education and organization of services for control and protection. (Bethapudi, 2, 2013)

From this review, it is obvious that there is a small number of economic activities that do not find their interest in the development of tourism. The percentage share of tourism in the gross national income is relatively small (USA - 0.65%, Spain - 4.15%, France - 1.91%, Italy - 2.06%, China - 1.23%), but its influence on the engagement of the economy is significant.

An important segment is also the influence of tourism on the engagement of local workforce in capacities for the reception of tourists and in maintenance and control of changes in the natural environment. Nature protection activities cannot be called the most important because all the previously mentioned activities are important for the development of tourism, but maintaining the attractiveness of natural and social objects and processes is crucial for the survival of tourism in a specific area. Tourism is an economic branch that can significantly affect the degradation of an area, because it is mostly related to areas that have been changed to a lesser extent or not at all. Thus, tourism can appear as a factor of negative environmental change - degradation, but also as a source of funds for its development and protection.

Tourist movements are nothing new for human civilization. The novelty is their massiveness, relatively easy accessibility of any place on Earth and, therefore, a negative impact on space that knows no borders. The number of tourists increases with the increase in standards, but also the important reason for the tourist movement is changes and changing living conditions in the place of residence. Today, tourism

is far from the concept of luxury that a small group of wealthy people can afford, and it is a necessity that is unaffordable for all residents of today's cities. Intensive urbanization leads to many unresolved problems in cities, starting from the lack of housing, employment, health care, traffic jams, noise and increasing air and water pollution. It is clear that a person living in such an environment cries out for peace, greenery and healthy food. And so we come to the problem that is reflected in the short-term stay of a large number of people on a relatively small island, an area of protected nature. (Chan, Wu, Vipulakom, 4, 2020)

Tourism is the most prevalent activity and human activity in the area of protected natural landscapes. Since it is about the mass presence of space users, tourism is a mass phenomenon, which brings with it the anthropoppression of space. The large presence of people threatens the survival of other forms of life, especially in cases where the level of environmental education and education of visitors is low. On the other hand, tourists simply scatter over the entire territory of the protected property, leaving behind a large amount of waste that is very difficult to collect. Furthermore, tourism implies the prior construction of facilities for use by tourists, which certainly disrupts not only the environment of the natural good, but also the functioning of the ecosystem. To activate tourist capacities, access traffic facilities and facilities for communication, electricity and water supply are necessary, all of which disrupt the natural ecosystems of the protected area. In particular, the problem of channeling and drainage of waste water, collection and disposal of municipal waste is raised. (Lješević, 9, 1998) Due to the carelessness of tourists, fires and illegal dumping are not uncommon. The very exploitation of the area (ski tracks, walking tracks, work of leveling machines, etc.) causes the emergence of the grass cover, accelerates erosive processes and changes ecosystems as a whole. Hotel operation, heating, burning and decomposition of waste cause air pollution.

When the tourist offer of an area is realized, it is very important to engage the appropriate local and state authorities to control pollution, protect and remediate possible damage in the environment, because if an area that was attractive in the tourist offer for a period is not protected, it will lose its attractiveness in a very short period of time and not only will lose its tourist importance, but it can be so changed that it loses its economic importance and remains a burden on future generations. This need not only for strict protection but also for the economic use of protected areas as the most attractive for tourism was defined in the 90s of the last century through an approach defined as "sustainable development" or "sustainable tourism". One satisfactory definition of sustainable development is that it is development that meets the needs of the present without putting at risk the ability of future generations to meet their own needs. There is no doubt that tourism has a great influence on the overall economy of a country, but it is also clear that we should leave the current tourist values as an inheritance to future generations in a better or at least unchanged state. (Đaković, Njeguš, Milović, 5, 2016)

In order to respect the principles and achieve the goals of sustainable tourism development, it is necessary to accept responsibility and develop awareness of the need to change the behavior of all participants in the tourist traffic, which would lead in the direction of harmonizing tourism development and environmental preservation. It is a long-term process aimed at changes in the relationships that are established between social, economic and natural systems and processes.

Therefore, the sustainable development of tourism does not negate the development of tourism, but on the contrary, it is a process that allows development to be achieved without degrading or exhausting those resources on which it is based. This way can be achieved either by managing resources in such a way that they can self-renew to the extent that they are used, or by greater representation and use of resources with a short regeneration period. With such an approach, resources can serve future generations to the same extent as current generations.

CRS AND DMS IN TOURISM

A Computer Reservation System (CRS) is a computerized system used to store and collect information and manage travel-related transactions. It originally originated within airlines (in the 1960s, American Airlines introduced SABER CRS) and later spread to travel agencies as sales channels.

In the mid-80s, CRS developed into a comprehensive global distribution system (Global Distribution System - GDS) that offers a wide range of tourist products and services and provides mechanisms for communication between airlines and travel agencies. The development of CRS in GDS integrates tourism services, uses CRS infrastructure and provides added value services. (Gajić, 6, 2024)

CRS Modules are reservations, customer database with all data, group reservations, corporate event reservations, price and inventory control, administration, report, GDS interface, PMS interface. Information that CRS contains: room types, price lists, room inventory (types, charts, etc.), client addresses, product descriptions, images, and other information, reservation information, Geocode information, IATA cities and locations.

GDS systems are enabled in the world e-tourism market today and each hotel facility is able to use only one GDS through providers that can be e-tourism agencies or e-tour operators. We pointed out that GDS works on the principle of generating data from the web (internet), and it does this through communication with all sites that have the possibility of booking hotel accommodation capacities. GDS offers information and reservations on all tourist products such as accommodation, car rental, air traffic schedule, etc.

Four leading GDSs: Amadeus, SABER, Worldspan and Galileo. There are also several smaller or regional GDSs such as SITA Sahara, Infiniti (Japan), Axess (Japan), Tapas (Korea), Fantasia (South Pacific), Abacus (Asia/Pacific), etc., which serve the interests of specific regions or countries.

The main goal of the GDS system is to incorporate the business of airlines, travel agencies and tour operators with hotel and other accommodation facilities in order to ensure a cycle of mutual business. "Destination Management Systems are systems that consolidate and distribute a comprehensive range of tourism products through a large number of channels and platforms, mainly for a specific region and support the activities of the DMS organization for that region. DMS systems try to bring consumers closer to the market of the region as a single unit, by providing timely information about that destination, timely reservations, DMS system tools and paying special attention to supporting small and medium-sized suppliers in tourism." (Frew, Horan, 10, 2007)

Destination tourism organizations use - the Internet to provide information for all stakeholders, support clients in the procurement of tourism products, enable electronic commerce (eCommerce), inform and coordinate crisis situations (e.g. avalanche in Austria, earthquake in Turkey, etc.) Extranet, to coordinate with all partners, deliver documents and other resources, develop and improve partnership. Intranet, to coordinate tourism activities, improve internal administration, carry out strategic planning and management, facilitate marketing activities.

DMS provide new tools for marketing and promotion of destinations. It is a set of interactively accessible digitized information about destinations. DMS usually includes information about attractions and facilities as well as the possibility of booking.

In addition to enabling the search and selection of individual tourism products, DMS can support travelers in creating their personalized destination. They can plan their trips, develop individual packages online or buy commercial packages from tour operators (eCommerce).

A DMS is usually managed by a Destination Management Organization (DMO), which can be either public or private organizations or a combination of both. A DMS typically includes a database of products and customers and mechanisms to connect them. Good examples from practice are Tiscover from Austria, Gulliver from Ireland, WorldNet, Integra, Infocentre and others.

Tourism Destination Management Systems (TDMS) is a network of tourist information. TDMS has three key objectives, which are to facilitate the search for information and decision-making on which destination to go, to improve the development of the tourism industry and access to the global market, and to improve the government's marketing and promotion of the region.

DMS enables information search by category, geography and keywords, then, client itinerary planning, reservations, client database management system, customer relationship management functions, market research and analysis, image libraries and press materials, publishing through electronic and traditional channels, event planning and management, marketing optimization, data entry and management, financial management, management information systems and performance evaluation, economic analysis, access to external sources such as weather, transportation schedules and travel planning, theaters, ticket reservations, etc.

6A framework for the analysis of tourist destinations includes:

- Attractions – cultural monuments, museums, sea, sand and sun, festivals, concerts, conferences, religious ceremonies, sports events...
- Accessibility – transportation system (planes, ships, buses, car/boat/bicycle rental
- Amenities (atmosphere, attractiveness) – catering, accommodation, clubs, theaters, restaurants, sports facilities, car rental, shopping...
- Available packages - ready-made tourist packages offered by tour operators, travel agencies, DICIRMS...
- Activities - all activities at the destination that the client will do during the visit (photographing, tennis tournaments, diving, hiking, professional training...
- Ancillary services – maps, email, weather forecast, international news, banks, post offices, hospitals, etc. (Ali, Woody, 1, 2018)

The advanced DMS is called DICRMS (Destination Integrated Computerized Information Reservation Management Systems) which digitizes the entire tourism industry and integrates all aspects of the value chain. It provides an info-structure for communications and business processes between all stakeholders in the value chain. The DICRMS should enable online bookings and purchases and operate in a global network (WAN) and be accessible both via the Internet and via mobile devices.

The development stages of TDMS solutions for one destination could be divided into three steps: (Chan, Wu, Vipulakom, 4, 2020)

Phase I: Reservation of services and accommodation

Currently, many travel agents manually search for specific information. In the first phase, a database should be created that will contain multimedia information about all tourist attractions and services. This information system will enable:

- Searching and obtaining information and thereby enable more efficient management of requests for specific information.

- Agents will be able to automatically search for information on a specific area of interest (eg, accommodation, food, restaurants, events, sports facilities, etc.) and have up-to-date information on prices, availability, amenities, schedules, etc.

The completion of this phase would be the linking of the Computerized Reservation Systems (CRS) to this information system. When TDMS becomes operational, a call center should be activated that will handle incoming requests and make reservations through TDMS.

Phase II: Reservation Expansion

The TDMS system will be expanded to include the possibility of booking other attractions, events, restaurants, tours, etc.

Phase III: Interactive multimedia services

Phase III of TDMS development is a longer-term vision of the system. Reservation and tourist information will be expanded to include voice, video and audio, graphics, etc., and would be distributed through voice mail, smart phones, and other Internet services.

This network of tourist information should allow a potential traveler to search and virtually visit cities, hotels, view tours, browse shops, etc. and finally book all the elements of your trip from home.

CONCLUSION

Due to the crucial changes in tourism, which occurred due to the current global economic crisis, in recent years almost a third of tourist activities take place outside of the classically understood trips due to annual vacations. Attractive ways of traveling, special tourist products and modern destinations are the new facts of the world tourism industry. The subregion of the Western Balkans can be competitive in the global tourism game if it professionally improves its attractions by following the rules and keys to the success of the modernization of tourist products and their presentation on the global market. The countries of the Western Balkans today have only comparative advantages in tourism because they have a diversified structure of attractions, because they are close to traditional and new tourist markets, because of their long history and general recognition, preserved natural resources and relatively good communication. The process of transformation of comparative into competitive advantages in the tourism of the countries of the Western Balkans is part of the overall reform process, as well as the political determination of tourism as an important generator of national well-being. Today, especially for the countries of the Western Balkans, an important priority is investment in tourist infrastructure, that is, the construction of a modern tourist system as one of the biggest investments in times of economic crisis.

Information technologies and tourism are two key catalysts that enable dynamic, innovative and educational communities and organizations to communicate and interact with the outside world. Tourism is expanding very quickly and will become one of the most dominant economies today, and as a result, better quality and more efficient access to information and services is required. On the other hand, IT offers new tools and mechanisms for information management.

The market maturation of tourist destinations takes place in an increasingly complex and competitive environment. For this reason, destinations, both those in the development phase and those that today want to reach, regain or maintain an advantage over the competition, must be provided with a whole range of instruments and functional methods for assessing the real situation and creating future scenarios.

One of the key instruments will be information technology, with a special emphasis on tourist destination management systems. In the hotel industry, an appropriate information system is necessary in order to successfully implement its operations and achieve success in the market. The advantages of the information system in the hotel company are that it provides more information per unit of time and thus increases the productivity of the respective functions in the company.

Hotel companies, tourist destinations and travel agencies have joined forces to provide functional information flows with the unique goal of enabling consumer satisfaction through CRM - Customer Relationship Management. DMS systems have two primary functions: (1) provide users with comprehensive and accurate multimedia information that is accessible at any time and from any place and (2) enable the reservation of accommodation and other tourism products or services.

In today's modern world, consumers are provided with information technology a simple, fast and efficient way of obtaining information about all elements related to vacation, business travel or any other type of information related to tourist activities.

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THE IMPACT OF SOCIAL MEDIA ON CONSUMER BEHAVIOR FOR SUSTAINABLE TOURISM

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ABSTRACT

This study aims to analyze the impact of social media marketing on consumer behavior in the tourism sector and identify opportunities for the development of sustainable strategies for promoting tourist destinations. The study is based on a review of relevant literature and the analysis of best practices in digital marketing, with a focus on how social media influences the perception and decision-making of tourists. The results show that social media plays a key role in promoting tourist destinations, enabling direct interaction between tourism businesses and customers. Visual content, influencer marketing, and personalized communication strategies significantly impact the creation of the destination's image and tourists' decision-making. Additionally, marketing strategies based on storytelling and authentic experiences help increase engagement and the credibility of tourism brands.

Keywords: *social media marketing, sustainable tourism, consumer behavior, destination promotion, digital engagement.*

INTRODUCTION

In today's world, social media has an extraordinary impact on how consumers are informed and make decisions, directly influencing their behavior and various sectors of the economy, including tourism. This influence is particularly significant in the context of sustainable tourism development and promoting the green economy, giving digital platforms a key role in educating and raising awareness among consumers about responsible travel practices (Gössling & Hall, 2019).¹

This study aims to examine how the use of social media marketing influences consumer behavior and the development of sustainable tourism, supporting the formulation of policies and strategies that promote a greener and more sustainable economy (Kaplan & Haenlein, 2010)². The increased consumer engagement through digital platforms has proven to be a decisive factor in changing

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¹ Gössling, S., & Hall, C. M. (2019). *Sustainable tourism: A global perspective*. Routledge.

² Kaplan, A. M., & Haenlein, M. (2010). *Users of the world, unite! The challenges and opportunities of social media*. Business Horizons, 53(1), 59-68.

their perceptions and behaviors, directly impacting travel choices and preferences for destinations that support sustainable practices (Bigné et al., 2019)³.

In this way, this paper provides a significant contribution to the discourse on sustainable tourism development and raising awareness of the importance of the green economy in the Balkans and beyond. Furthermore, exploring the role of social media as tools for educating and motivating tourists toward more responsible behaviors can assist in formulating more effective strategies for promoting sustainable tourism (Sigala, 2017)⁴.

1. Marketing as a Concept and Social Media Marketing for Sustainable Tourism

Marketing is the activity, a group of institutions, and processes for creating, communicating, distributing, and exchanging offers that have value for customers, partners, and society in general (American Marketing Association, 2017)⁵. When discussing sustainable tourism, marketing plays a crucial role in communicating sustainability values and helping to create a strong connection between destinations and consumers who are committed to traveling responsibly and sustainably (Gössling & Hall, 2019; Dolnicar & Ring, 2014).⁶

Two critical strategies for value creation are:

- (1) Market segmentation and targeting, and
- (2) Planning specific marketing activities to attract and retain the selected market (Silk, 2006)⁷.

For sustainable tourism, market segmentation is particularly important as it enables the identification of consumer groups interested in traveling in an environmentally and culturally responsible manner. This segmentation is essential for leveraging technology and innovation in communicating sustainable tourism messages on social media platforms (Dolnicar et al., 2008)⁸.

³ Bigné, E., Font, X., & Andreu, L. (2019). Tourism image and visitor loyalty in sustainability-themed destinations: The case of tourism in nature reserves. *Journal of Sustainable Tourism*, 27(5), 629-648.

⁴ Sigala, M. (2017). *Social media and the co-creation of tourism experiences*. *Tourism Management*, 58, 113-115.

⁵ **American Marketing Association (2017)**. Definition of Marketing. Retrieved from <https://www.ama.org>

⁶ Gössling, S., & Hall, C. M. (2019). *Sustainable Tourism: A Global Perspective*. Routledge. & Dolnicar, S., & Ring, A. (2014). *Tourism marketing research: Past, present and future*. *Annals of Tourism Research*, 47, 31-47.

⁷ Silk, A. J. (2006). *What is Marketing?*. Harvard Business Press.

⁸ Dolnicar, S., Yanamandram, V., & Cliff, K. (2008). The contribution of vacations to quality of life. *Annals of Tourism Research*, 35(3), 784-807.

Technology and innovation play a key role in enabling this segmentation, as they can use social media platforms to create campaigns targeting audiences most predisposed to support the development of sustainable tourism (Buhalis & Amaranggana, 2015)⁹. Technology and innovation, such as digital marketing tools and the use of travel planning apps, can also help communicate the importance of spatial planning and the management of natural resources, especially for tourist destinations facing environmental uncertainties (Gretzel et al., 2020)¹⁰.

1.1 The Future of Marketing for Sustainable Tourism

The future of marketing for sustainable tourism will be shaped by the use of technology and innovation to create a strong connection between destinations and travelers interested in journeys that respect the principles of sustainability (Gretzel et al., 2020)¹¹. In this context, sustainable tourism marketing must adapt to address the challenges and opportunities arising from climate change and the need for careful management of natural and cultural resources (Gössling & Hall, 2006)¹².

The use of technologies such as artificial intelligence (AI), data analytics, and virtual reality (VR) is essential for creating more efficient and personalized marketing campaigns, targeting audiences sensitive to sustainability issues and climate change (Buhalis & Amaranggana, 2015)¹³.

Platforms such as Instagram, Facebook, Twitter, TikTok, and YouTube have been utilized to create marketing campaigns that help raise awareness about sustainable tourism opportunities and disseminate information about destinations that support sustainable practices (Sigala, 2017)¹⁴.

For example, videos and images from destinations that promote sustainable tourism can be used to illustrate the benefits of such tourism for the environment and local communities (Gretzel et al., 2019)¹⁵. Posts incorporating advanced technologies such as virtual reality (VR) can provide consumers with an immersive experience, allowing them to "visit" destinations and engage in

⁹ Buhalis, D., & Amaranggana, A. (2015). Smart tourism destinations. *Information and Communication Technologies in Tourism 2015*, 377-389.

¹⁰ Gretzel, U., Fuchs, M., Baggio, R., Hoepken, W., Law, R., Neidhardt, J., & Pesonen, J. (2020). e-Tourism beyond COVID-19: A call for transformative research. *Information Technology & Tourism*, 22(2), 187-203.

¹¹ Gretzel, U., Fuchs, M., Baggio, R., Hoepken, W., Law, R., Neidhardt, J., & Pesonen, J. (2020). e-Tourism beyond COVID-19: A call for transformative research. *Information Technology & Tourism*, 22(2), 187-203.

¹² Gössling, S., & Hall, C. M. (2006). Uncertainties in predicting tourist travel. *Climatic Change*, 79(3-4), 163-173.

¹³ Buhalis, D., & Amaranggana, A. (2015). Smart tourism destinations. *Information and Communication Technologies in Tourism 2015*, 377-389.

¹⁴ Sigala, M. (2017). Social media in tourism and hospitality: A research agenda. *Journal of Hospitality & Tourism Technology*, 8(1), 11-23.

¹⁵ Gretzel, U., et al. (2019). Social media and sustainable tourism: A systematic review. *Tourism Management*, 71, 397-409.

activities that promote sustainable practices before embarking on an actual trip (Neuhofer et al., 2015)¹⁶.

Additionally, social media can serve as a tool for creating a global community of travelers committed to sustainable tourism practices, sharing experiences and ideas that support the preservation of natural and cultural resources (Munar & Jacobsen, 2014).¹⁷ Activities such as the use of dedicated hashtags (e.g., #SustainableTravel, #EcoTourism) can encourage engagement and the dissemination of content that promotes responsible and sustainable tourism.

1.2. The Role of Social Media and Technology in Consumer Behavior and the Development of Sustainable Tourism

Social media marketing has a direct impact on consumer behavior and plays a crucial role in promoting sustainable tourism by leveraging technology and innovation to reach target audiences and shape purchasing decisions (Xiang & Gretzel, 2010).¹⁸

1.2.1. Influencer Marketing – Impact on Consumer Behavior and the Development of Sustainable Tourism

Social media influencers have a powerful effect on consumer behavior. They are known for their ability to influence consumers' purchasing decisions by guiding them toward products and services that align with their values and preferences (Lou & Yuan, 2019).¹⁹ Utilizing influencers to promote sustainable tourism is an effective strategy, as these individuals possess credibility and can reach a broad audience, particularly those interested in environmental protection and climate change mitigation (Jin et al., 2019).²⁰

1.2.2. Online Reviews and Their Effect on Consumer Behavior Development

Another critical component of social media marketing is the role of online reviews. Consumers increasingly rely on the opinions of other users to shape their perception of a product or service, including tourism opportunities (Filieri, 2015).²¹

¹⁶ Neuhofer, B., et al. (2015). Virtual reality in tourism: An exploratory review. *Journal of Tourism Research & Hospitality*, 4(1), 1-9.

¹⁷ Munar, A. M., & Jacobsen, J. K. S. (2014). A dynamic framework for tourism social media behavior: A study of European travelers. *Tourism Management*, 41, 87-96.

¹⁸ Xiang, Z., & Gretzel, U. (2010). Role of social media in tourism marketing. *Tourism Management*, 31(3), 1220-1226.

¹⁹ Lou, C., & Yuan, S. (2019). The impact of social media influencers on consumer behavior. *Journal of Marketing Research*, 56(3), 444-460.

²⁰ Jin, N., et al. (2019). The role of influencers in promoting sustainable tourism: A study of Instagram. *Journal of Travel & Tourism Marketing*, 36(7), 821-832.

²¹ Filieri, R. (2015). The Impact of Online Reviews on Consumer Behavior. *Journal of Marketing Research*, 42(3), 12-21.

Online reviews can have a significant impact on consumer behavior, as they provide insights into the experiences of other users and can influence purchasing decisions (Kim et al., 2016)²².

1.2.3. Social Media Advertising – Impact on Consumer Behavior and the Development of Sustainable Tourism

Social media advertising is a powerful tool for reaching a broad audience and influencing consumer behavior. The use of targeted advertisements on platforms such as Facebook, Instagram, and YouTube enable companies to engage with different consumer segments, including those interested in sustainable tourism (Dwivedi et al., 2021)²³.

2. Consumer Behavior

(Khan, 2006)²⁴ defines consumer behavior as the decision-making process and physical activity involved in the acquisition, evaluation, use, and disposal of goods and services. This definition clearly indicates that consumer behavior is not solely focused on purchasing goods or services; rather, the process begins long before the actual purchase. A purchasing process originates in the consumer's mind, leading to an evaluation of alternatives among products that may be acquired, considering their relative advantages and disadvantages. This results in both internal and external searches for information.

According to (Kotler & Armstrong, 2011)²⁵, the typical buying process consists of five stages through which a consumer progresses:

²² Kim, J., Park, J., & Kim, M. (2016). The Influence of Online Customer Reviews on Consumer Purchase Decisions. *Journal of Internet Commerce*, 15(4), 223-240.

²³ Dwivedi, Y. K., Ismagilova, E., Hughes, L., & Reynolds, N. (2021). Social Media Marketing in the Age of Digital Transformation: A Review of Current Research and Future Directions. *Journal of Strategic Marketing*, 29(1), 1-19.

²⁴ Khan, M. T. (2006). The Consumer Behavior: A Literature Review. *Journal of Consumer Marketing*, 23(2), 109-116.

²⁵ Kotler, P., & Armstrong, G. (2011). *Principles of Marketing* (14th ed.). Pearson Education.

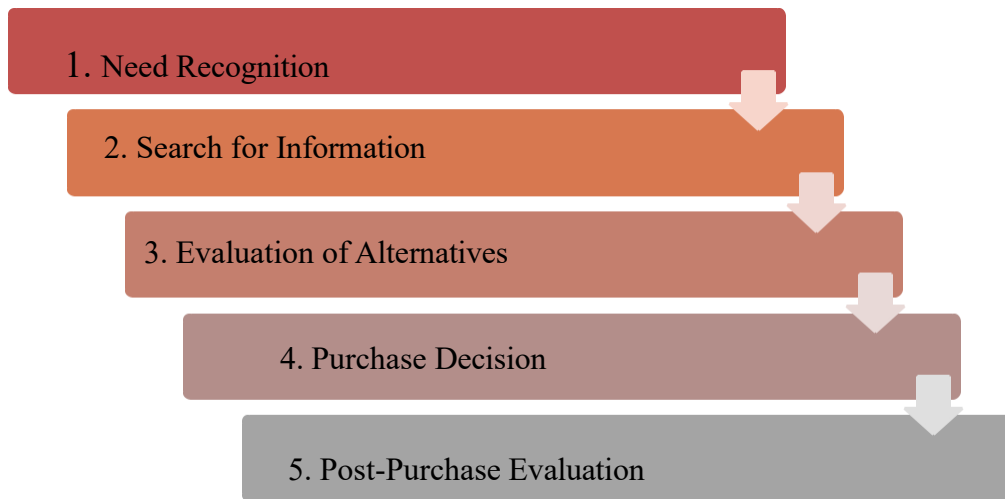


Figure 1 Consumer Decision-Making Process

Source: (Researchomatic, 2012)

3. The Interconnection Between Consumer Behavior and Technology in the Development of Sustainable Tourism

In the context of sustainable tourism and the challenges posed by climate change and spatial planning, the role of technology and innovation is crucial in influencing consumer behavior and driving sustainable transformations (Gössling & Hall, 2019)²⁶. Consumer behavior is a key factor in the success of sustainable tourism development campaigns, as consumers determine the demand for such products and services (Cohen et al., 2014).²⁷

In the digital age, consumers have fast and direct access to information about sustainable tourism opportunities.

3.1. Technology and Its Impact on Consumer Travel Decisions

Technology has transformed how consumers make travel decisions, enabling them to make more informed and environmentally responsible choices (Gretzel, 2011)²⁸. With the support of online platforms and applications that promote sustainable tourism, consumers can compare options that best align with their environmental and social values (Xiang & Gretzel, 2010)²⁹.

²⁶ Gössling, S., & Hall, C. M. (2019). *Tourism and Climate Change: Impacts, Adaptation, and Mitigation*. Routledge.

²⁷ Cohen, S. A., Prayag, G., & Moital, M. (2014). Consumer Behavior in Tourism: Insights from the Literature. *Annals of Tourism Research*, 47, 26-48.

²⁸ Gretzel, U. (2011). Consumer Behavior in Tourism: Insights from Technology and the Internet. *Tourism Management*, 32(2), 314-325.

²⁹ Xiang, Z., & Gretzel, U. (2010). Role of Social Media in Online Travel Information Search. *Tourism Management*, 31(2), 179-188.

3.2. Innovation as an Influencing Factor in Consumer Behavior Development

Innovations in technology and services create new opportunities to address climate change and spatial planning needs, including the use of renewable energy and the development of products that promote nature conservation (Gössling & Hall, 2019)³⁰.

3.3. Spatial Planning and Its Impact on Sustainable Tourism Consumers

Spatial planning plays a crucial role in the development of sustainable tourism by ensuring that locations and natural resources are managed in a way that supports sustainable development while minimizing the impact of mass tourism on the environment (Pigram & Wahab, 2005)³¹. Consumers interested in sustainable tourism are increasingly seeking travel opportunities to destinations that prioritize the planning and protection of natural and cultural spaces (Hall, 2019)³².

3.4. Climate Change and Sustainable Tourism Consumers

Climate change is becoming a significant factor influencing consumer behavior (Scott et al., 2012)³³. Consumers are becoming more aware of their environmental impact and are willing to make choices that help combat climate change (Gössling et al., 2010)³⁴. Sustainable tourism provides an opportunity for consumers to travel without harming the planet (Peeters, 2017)³⁵.

4. Recommendations

After analyzing the impact of social media marketing and the development of sustainable tourism, this study offers several recommendations for tourism companies and marketing professionals:

1. Influencers Marketing in Tourism Marketing

Tourism businesses should establish partnerships with influencers who promote sustainable and eco-friendly practices, leveraging their influence on social media.

³⁰ Gössling, S., & Hall, C. M. (2019). *Tourism and Climate Change: Impacts, Adaptation, and Mitigation*. Routledge.

³¹ Pigram, J., & Wahab, S. (2005). *Tourism and Sustainability: Development and New Tourism in the Third World*. Routledge.

³² Hall, C. M. (2019). *The Geography of Tourism and Recreation: Environment, Place and Space*. Routledge.

³³ Scott, D., Hall, C. M., & Gössling, S. (2012). Tourism and Climate Change: Implications for the Future of the Tourism Industry. *Annals of Tourism Research*, 39(2), 537-555.

³⁴ Gössling, S., Scott, D., & Hall, C. M. (2010). *Tourism and Climate Change: Impacts, Adaptation and Mitigation*. Routledge.

³⁵ Peeters, P. (2017). Tourism and the Environment: The Role of Sustainable Tourism Practices. *Tourism Management*, 62, 18-31.

2. Enhancing Transparency and Authenticity in Tourism Marketing

To build trust, the information provided on social media should be accurate and reliable, with a strong focus on transparency and authenticity.

3. Supporting Sustainable Policies by Governments and International Organizations

Governments and international organizations should develop policies that encourage sustainable tourism development and support businesses in adopting ecological practices..

4. Incorporating New Technologies to Optimize Tourist Experiences

The use of technologies such as virtual reality (VR) and augmented reality (AR) can enhance tourist experiences and promote destinations in more engaging ways..

5. Educating and Raising Consumer Awareness About Sustainable Tourism

Businesses should invest in educating consumers about the environmental and social impact of their travels, utilizing marketing platforms to increase awareness of sustainable tourism.

5. Conclusions

This study examined the impact of social media marketing on consumer behavior, focusing on tourism and the promotion of sustainable tourism. The findings indicated that social media helps shape consumer perceptions and behaviors, enhances engagement, and increases trust in tourism brands. Through the use of visual content, influencers, and storytelling, social media marketing contributes to building destination images and fostering stronger connections with tourists.

A key conclusion is that social media influences travel decisions and supports the development of sustainable tourism. Digital marketing can raise awareness of sustainable practices and provide opportunities for more responsible choices regarding destinations and tourism activities.

The study suggested a broader use of influencers in destination promotion, considering their significant impact. Ultimately, social media serves as a powerful tool in tourism marketing, and tourism businesses should develop sustainable and personalized strategies, leveraging digital technologies and platforms to create engaging and environmentally responsible experiences.

Tourism policies and marketing strategies should support sustainable development and the preservation of natural and cultural resources.

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THE IMPLICATION OF TRANSPARENCY AND ACCOUNTABILITY MANAGED BY SAI-S IN MINIMIZING CORRUPTION IN THE KLITGAARD EQUATION

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Abstract:

What is corruption??

The term corruption in legal literature, referred to the Criminal Code of the Republic of Albania, approved by Law 7895, dated 27/01/1995¹, amended, is specified as: "The promise, proposal or giving, directly or indirectly, of any benefit irregularly, to the person exercising the public function, for himself or for other persons to perform or not perform an action related to his duty or function". From the financial side, the term corruption can be defined as, The use of means in the form of a deliberate action or a misrepresentation of a material fact, with the aim of obtaining a benefit, avoiding an obligation or causing loss to another party . Above, we can say that corruption is the abuse of power for the purpose of personal gain.

Objectives:

The purpose of the current research is to explore how risk minimization can be influenced through two essential factors, namely transparency and accountability. Another equally important goal in this paper is the exploration and analysis of the moral integrity of auditors aiming at contributing to good governance. The above seen from the perspective of an essential actor in the fight against corruption, such as the Supreme Audit Institutions (KLSH/High State Control in the case of Albania).

Key words: Corruption, transparency, accountability, Supreme Audit Institution/ High State Control in the case of Albania, Klitgaard equation

Entry

When the concept of informality was first introduced in the early 70's of the last century, it was thought to be a temporary phenomenon that would disappear in developed economies. Reality proves the opposite. In parallel with the growth of the economy, informal activities continued to grow (informal employment, untaxed activity, informal enterprises, etc.). The informal sector, referred to by the professional literature as the "shadow economy" or the "underground economy" (Shnaider and Ente, 2000) or "unofficial activity" (Friedman et al., 2000) continues and continues to remain as the "electron of free" in the country's developments. But concepts must be separated, in fact the informal sector is not an enemy of society and economy, the enemy is corruption.

The precise definitions of the terms in this field affect different legal, criminalistic and political problems according to the countries² being referred to. According to the United Nations, there

¹ Kodi Penal i Republikës së Shqipërisë, Tiranë 1995 me ndryshime

² Udhëzues i Kombeve të Bashkuara mbi Masat Praktike Anti-Korrupsion për Prokurorë dhe Hetues, OKB, Vjenë, 2004, fq. 23; Z. Dobrowolski, Roli i Zyres së Auditimit Suprem në Luftën kundër Korrupsionit dhe Patologjive të Tjera Organizative" [ne:] K. Raczkowski

is no single, universally accepted definition of corruption. For example, the United Nations Convention against Corruption does not contain a single definition of corruption, but lists several specific types or acts of corruption³.

- ✓ Corruption is "abuse of entrusted power for private gain".
- ✓ Corruption is misuse of public funds and/or office for private or political gain.
- ✓ Corruption means entice or embezzle.
- ✓ Corruption is seeking, offering, giving or accepting, directly or indirectly, a bribe or any other undeserved benefit or advantage, which distorts the proper performance of any duty or behavior required of the recipient of the bribe or benefit or advantage.
- ✓ Corruption is misuse of public trust for personal gain. Public trust is essential for the efficiency of the public entity.

In a narrower sense, corruption can be defined as: *any violation of the duty of official persons or responsible persons of legal entities and any activity of the initiators or beneficiaries of this behavior, in exchange for a service that is directly or indirectly promised, offered, given, requested, accepted or expected to be received for oneself or another person*. This definition includes active and passive corruption, so how for official persons who have a public function or exercise a public service, persons responsible for the management and administration of commercial companies and for persons who are initiators of corrupt behavior. Corruption means the realization of any right or interest for which a certain person or group has no legal basis or the realization of rights and interests for which there is a legal basis, but in a way that creates a privileged position in relation to the rights and the interests of others that have the same legal basis for their realization.

We recognize two types of corruption: *Active corruption*, which means criminal offenses that are committed by promising, proposing or directly or indirectly giving any type of benefit to a public or private official to perform or not an action contrary to the duty or function of his. *Passive corruption*, which means criminal acts that are carried out by seeking, receiving any kind of irregular benefit or accepting an offer or promise from a public or private official to perform or not, an action in opposition to his duty or function. What we agree is, corruption means violation of legal rules for the purpose of personal gain.

In this paper, we will focus on the concept of the corruption phenomenon influence on the quality of state governance.

Since Albania has often been described as a country with a high potential for corruption, based on many reports and statistical analyses⁴, managing this phenomenon is a challenge very difficult. Since the first years of the economic and political transition in Albania until today, corruption and informality are present phenomena of our economy.

According to the well-known international researcher of corruption and its consequences in the public, Robert Klitgaard, corruption can be assessed as..., *Misuse of state office for unofficial purposes*.

dhe F. Schneider (eds.), Siguria Ekonomike e Menaxhimit te Transaksioneve te Biznesit ne Biznes, Shtëpia Botuese Libri Chartridge, Oksford 2013, faqe 219-243

³ Paketa Anti-korrupsion e Kombeve te Bashkuara, Edicioni i Trete, UNODC, 2004. Gjendet nw: www.undoc.org/documents/corruption/publications_toolkit_sep04.pdf, p. 10 [access; 16.02.2016].

⁴ Transparency International - Global Corruption Barometer 2017-2023 <https://www.transparency.org/en>

In corrupt acts we can cite bribery, coercion, nepotism, fraud, embezzlement and much more than that. What is essentially the phenomenon of corruption, can be defined as a breach of public trust for personal gain⁵.

The promotion of good governance in all its aspects includes, among others, ensuring the rule of law, improving the efficiency and accountability of the public sector and the fight against corruption, as essential elements of a framework within which economies can progress⁶.

Nowadays, when the phenomenon of corruption seems to be sitting cross-legged among us and willingly has become a "participant" of operational activities, the question naturally arises: Is there an institution that identifies, restrains or fights this "enemy" ?

The Fraud Triangle⁷ related to corruption:

In this paper, as mentioned above, we have focused on the phenomenon of corruption in the quality of state governance, analyzing its two types: active and passive.

Active corruption: An offense committed intentionally, of promising, offering or giving by any person, directly or indirectly, any unfair advantage to any public official, for himself or for another, to induce him to act or not to act in the exercise of his/her functions" (Article 2 of the Convention).

Passive corruption: A criminal offense committed intentionally, which consists in the solicitation or acceptance by any public official, directly or indirectly, of any improper advantage for himself or another, or the acceptance of an offer or promise of an advantage such, to act or not to act in the exercise of his/her functions. (Article 3 of the Convention).

It is generally known and accepted that, for a fraud to be committed, three conditions must be present:

- 1) The person must be motivated to commit the fraud.
- 2) The person must have the ability to commit the fraud.
- 3) The person must have the ability to justify the fraud.

On the other hand, it is precisely these three conditions that favor the development of corruption.

Let's address all three of these conditions:

1) Motivation

Motivation is the reason an individual chooses to commit corruption as corrupt or corrupt. This mostly has to do with the integrity of the person. It is an individual matter which is seen as related to his character, but not only. It operates in relation to the conditions in which this individual is or are you facing in line with point 3) Justification (financial difficulty or need for money as a result of an emergency)

2) Opportunity

⁵ Mbi bazwn e librit te Z. Dobrowolski, "Te luftosh korrupsionin dhe Patologjitë e Tjera Organizative", Shtëpia Botuese Peter Lang GmbH., Frankfurt Am Main.

⁶ Komunikate e Komisionit të Përkohshëm të Bordit të Guvernatorëve të Fondit Monetar Ndërkombëtar, Njoftim per Shtyp Nr. 96/49, 29 Shtator 1996, Fondi Monetar Nderkombetar, Washington, D.C.

⁷ 5Cressey D.R., Paraja e te Tjereve, Patterson Smith Montclair 1973, fq. 193.

Without opportunities, a person cannot commit corruption. Opportunity includes the characteristics or circumstances associated with an entity that allow corruption to be committed. Such situations can often result in deficiencies in internal control creating or increasing the possibility for the extension of this phenomenon. Some of the factors and conditions that create them are:

- Knowing the weaknesses of the internal control systems.
- Lack of division of duties.
- Access to accounting data or assets.
- Lack of proper supervision.
- Lack of ethical policies that support "Tone at the top".
- The belief that the person doing it will not be caught.

3) Justification.

The final factor that must be present in order for fraud to be committed is the person's ability to rationalize the behavior. The ability to reason includes the behavior, character, or ethical values that allow individuals to justify their reasons for doing it. The generally lower levels of wages in the public sector compared to the private sector may lead employees to believe that they can justify the phenomenon. As in finding opportunity, this may violate the principles of public trust, expectations and accountability. The individual must be able to convince themselves that committing/accepting corruption is somehow "right" or acceptable to them. Without reasoning or justification, an individual is unlikely to commit corruption even if the motivation and opportunity are present. His reasoning or justification is being convinced that there is a perfectly acceptable reason for the person himself to commit the fraud. A sense of ethics, morality, and a clear understanding of right and wrong can prevent some individuals from justifying or justifying cheating.

Looking at it from a closer perspective, we can distinguish several categories that favor this phenomenon, such as⁸:

Cultural problems

- Lack of anti-fraud and anti-corruption policies and culture.
- Management's failure to implement a sound system of internal control and/or to demonstrate commitment to it at all times.

Managerial problems

- Lack of financial expertise and management professionalism (leaders)
- A history of legal or regulatory violations within the organization and/or complaints alleging such violations.
- Strained relations within the organization between managers and employees
- Lack of staff management and supervision.
- Lack of clear control by leaders of responsibilities, authorities, power delegations, etc.
- Reward schemes (bonuses) linked to ambitious objectives or directly to financial results.
- Lack of division of duties

Employee problems

- Inadequate recruitment processes and lack of screening of candidacies.
- Unusually close relationships - internal and external

⁸ <https://panel.klsh.org.al/storage/phpIEQ14y.pdf>

- Potential or current reduction of staff or redundant positions
- Disgruntled employees who have access to desirable assets
- Unusual patterns of staff behavior
- Personal financial pressures on key (main) staff
- Low salary levels of key staff
- Weak distribution of internal controls
- Lack of willingness and willingness to share tasks

Process problems

- Lack of division of labor and independent control of key transactions
- Lack of identification of an asset (asset)
- Weak management accountability and weak reporting systems.
- Weak physical security of assets.
- Weak access controls to physical assets and IT security systems.
- Absence and/or inadequacy of internal controls.
- Poor internal control documentation.

Transaction problems

- Poor documentation support for particular transactions.
- Large cash transactions (cash, for example, in public companies)
- Exposure of assets to misappropriation

INTOSAI about SAIs role against corruption

The INTOSAI Guidelines for Corruption Prevention Audit (2016) define that SAI's fight against this phenomenon should aim at preventing corruption by analyzing the phenomena, causes, areas and mechanisms of corrupt phenomena during each audit, as well as strengthening public institutions by identifying ways to reduce arbitrariness, simplify administrative procedures and eliminate unequal access to information⁹.

Some of the measures suggested in the World Development Report (1997, 2002 and 2004) to fight corruption are: minimizing opportunities, official discretion, strengthening monitoring, increasing punishment, more effective media, civil society awareness, greater access to the general public in information etc¹⁰.

The INTOSAI Anti-Corruption Audit Guide discusses the seven components¹¹ as: (1) Anti-corruption organizational culture (2) Objectives/Strategy (3) Organizational responsibility (4) Risk management (5) Anti-corruption program such as code of ethics, internal control, e-governance tools, signaling mechanism, audit of internal, etc. (6) Communication - Reporting (7) Monitoring and modification.

Despite significant developments in terms of approach and overall methodology for combating corruption by SAIs, the duties of each supreme audit institution vary greatly according to their legal or institutional frameworks.

⁹ INTOSAI Guidelines for the Audit of Corruption Prevention (ISSAI 5700), September 2016, p/ 14

¹² Cited in Evolution of The World Bank's thinking on Governance (2018): Background Paper for World Development Report (2017): K. Sarwar Lateef, P/20 (Source: <http://pubdocs.worldbank.org/en/433301485539630301/WDR17-BP-Evolution-of-WB-Thinking-onGovernance.pdf>).

¹³ INTOSAI Guidelines for the Audit of Corruption Prevention (ISSAI 5700), September 2016, P/3-4

Audit Frameworks

The Department for International Development (DFID) has broadly identified three audit models: the Westminster model, the Anglo-Saxon or Parliamentary Model, the judicial model or the Napoleonic Model and the board or Collegial Model¹².

Under the Westminster or Anglo-Saxon or Parliamentary model, there is an Auditor General who has rights and responsibilities along with safeguards to ensure independence. SAI's ability to challenge corruption depends on its powers, authority and independence from other national institutions¹³. Under the judicial or Napoleonic model, the SAI known as the Court of Accounts is an integral part of the judicial system and normally also has a complementary system of high level parliamentary accountability regarding public expenditure. The vulnerability of such a system to political influence is quite low due to the indefinite mandate, but there are challenges in terms of transparency, lack of parliamentary involvement and implementation of recommendations. According to the collegial system model, the SAI has a number of members appointed by the parliament who form its college or governing board and take decisions jointly. The limitations of this model are, the decision-making process is slow and the system of appointment by parliament affects independence and impartiality.

Supreme Audit Institutions in the fight against corruption

Supreme Audit Institutions are one of the main players in the fight against corruption. By overseeing public finances and their role in promoting transparency and accountability in the public sector, they play an important role in creating an environment conducive to good governance. Occurring in the conditions of the inevitable confrontation with the phenomenon of corruption, as early as the 16th congress of the International Organization of Supreme Auditing Institutions, held in Montevideo, Uruguay in 1998, these institutions placed emphasis on the special importance of fraud prevention and detection and corruption.

In the case of Albania, the High State Control, as the supreme institution of public auditing in the country, tries to be a strong pillar of prevention and management of this phenomenon at all times.

These Institutions oversee the management of public finances by promoting transparency and accountability. *Their role in the fight against corruption, to hinder and prevent it, is twofold.* First by identifying the risk areas (this in cooperation with other institutions) and secondly by publishing the recommendations of the audit reports.

Supreme Audit Institutions act as 'protectors' on financial integrity, compliance with existing laws and assessment of economy, efficiency and effectiveness of their operations covered under the topics of financial audit, compliance and performance. Specialized audits covering aspects such as environment, IT and other issues related to social transformation are also becoming increasingly important for SAI's across the globe.

The audit missions carried out by the High State Control are ex-post (after the fact) highlighting those responsible and requesting compensation for damages caused or prevention of repeated violations.

¹² Characteristics of Different External Audit Systems, DFID, 2004

¹⁰ <https://www.u4.no/publications/albania-overview-of-corruption-and-anti-corruption.pdf>

Meanwhile, referring to the practices of counterpart countries, there are countries that also perform ex-ante (pre-fact) audits in order to prevent damages before they occur. Trying to balance the limitation and restraint of executive power, which is best managed through ex-ante compliance audits and ex-post audits through prevention and remediation.

However, this technique also has the disadvantage of creating an excessive volume of work and responsibility. There is also the legal basis that provides for the way of carrying out the missions, the Basic Law of the State, the Constitution of the Republic of Albania and the Organic Law of the High State Control, in our country only recognize the ex-post performance of audit missions.

In the Lima Declaration of 1977, ex-ante auditing is a task that should be performed by internal audit units, the Declaration acknowledges that SAIs can perform ex-ante audits which represent a type of review before the fact of administrative activities or financial. Pre-audit is necessary for the sound management of public finances and funds entrusted to the state by citizens. It can be performed by SAIs or other audit institutions.

Audits mission

During the performance of the audit mission, the auditors must identify the appropriate criteria to provide the database for the evaluation of the available justifying evidence and their processing in order to draw findings and conclusions from the audit.

During this process, auditors face continuous challenges due to:

- Lack of documentation or audit trail,
- Partial access to the information system,
- Lack of will to cooperate,
- Intentional giving of different evidence.

In all these moments, the risk of the presence of fraud is taken into consideration, which can lead to corruption.

In order to obtain information from the audited entities, strategic behavior should be used, cooperating within the limits of moral integrity and keeping in consideration the obligations to the general public of each party.

The external auditor is not responsible for detecting the phenomenon of corruption, and this is related to the limitations of controls, which cannot provide absolute certainty. Like any other control policy, the preventive policy is always more effective than the detection policies after it has been committed.

At the end of the audit process, after the audit evidence was collected and processed, which was sufficient and appropriate to identify the appropriate criteria, the conclusion is reached:

Findings, conclusions and recommendations = Criteria + Evidence

Through the findings, conclusions and recommendations given, external auditors enable the increase of accountability of public institutions for the implementation of the law, the strengthening of the fight against corruption and the increase of transparency.

2. Purpose

The purpose of this article is to provide a rationale that corruption can follow Klitgaard's formula by rewriting Accountability as a variable of transparency and accountability.

KLITGAARD's equation

Metaphorically, corruption can follow Klitgaard's formula: $K = M + D - A$ where K is corruption, M is monopoly, D is discretion or the amount that can be profited from corruption and A is accountability which is seen directly related to accountability.

The interpretation of this formula can be treated as, corruption will be possible, when someone (eg a citizen) has monopoly power over a good or service, has the power to decide whether you will benefit from it and how much benefit as well as is not responsible.

Corruption in itself contains calculations, the greater the value of the bribe, the smaller the chances of being discovered and the lower the punishment received, the higher the temptation to be corrupt. And in order to avoid this logical implication, we must work with the base, the foundation where accountability can be increased by eradicating the culture of impunity.

How can we affect the Klitgaard equation?

As we mentioned above, in the composition of this equation in order to minimize K (corruption) we must increase P (responsibility) and for this purpose we will use two of the powers at our disposal, accountability and transparency.

Both of these phenomena are seen as "enemies" of corruption and two necessary pillars of good governance, which go hand in hand. Without strengthening one, the other cannot stand. And for this the whole equation can be rewritten as a consequence of T (transparency) and LL (calculation) in the form $K = M + D - (A + LL)$

When it comes to Supreme Audit Institutions (SAIs), the application of the Klitgaard equation is crucial to understanding and addressing corruption in the management of public finances. SAIs play a key role in reducing corruption by promoting transparency, accountability and integrity in the use of public funds. By effectively monitoring the audit process and ensuring proper oversight of government finances, SAIs can help reduce opportunities for corrupt practices to occur. By identifying and 'investigating' cases of mismanagement, fraud or embezzlement, giving recommendations for improvements and reporting the findings to the relevant authorities, as well as identifying the persons responsible for such actions, it is possible to keep the "P" factor - Accountability under control.

In addition, SAIs can help reduce the potential for corruption related to monopolies by promoting competition and transparency in public procurement processes, awarding contracts and other transactions involving public funds. This could help address the "M" factor in the Klitgaard equation.

The role of SAI in minimizing corruption by influencing these key factors

Transparency and Accountability as Mechanisms to Combat Corruption

Transparency: Transparency involves making the operations, decisions, and financial dealings of public institutions accessible to the public. When government processes and financial records are open to scrutiny, the opportunities for corruption decrease. Transparency limits the ability of public officials to act with impunity, particularly in sectors prone to corruption, such as public procurement and resource allocation.

Accountability: Accountability is the requirement for public officials and institutions to answer for their actions and decisions. This means that they must justify how they allocate resources, make decisions, and deliver public services. Strong accountability mechanisms involve effective oversight, legal accountability, and independent audits that ensure officials are responsible for their conduct.

SAIs work impacts the factors in the Klitgaard equation as follows:

1. Reducing Monopoly (M)

Monopoly power is the ability of a person or group to control resources or decision-making without effective competition. In Albania, as in many other countries, the government controls substantial resources, such as public contracts, procurements, and the allocation of public funds. This creates opportunities for corrupt practices, as officials may use their monopoly power to divert resources for personal gain.

SAI's Role: By conducting regular audits, SAI ensures that public resources are allocated fairly and according to legal frameworks. Through audit reports, SAI provides transparency in public procurement and expenditure, thus reducing the ability of public officials to exercise unchecked monopoly over public funds. The institution's ability to monitor large-scale public contracts, such as infrastructure projects and procurement, diminishes the opportunities for monopolistic practices that fuel corruption.

2. Limiting is the amount that can be profited from corruption (S)

The amount that can be profited from corruption that can be called also Discretion, refers to the freedom that officials have to make decisions without being subject to formal rules, procedures, or oversight. In Albania, public officials often have significant discretion over budgetary decisions, project approvals, and the awarding of government contracts. This discretion, if left unchecked, can easily lead to corrupt practices.

SAI's Role: SAI audits and oversight limit the discretion of public officials by making their actions subject to review. The institution evaluates whether decisions are made based on established rules, laws, and guidelines. For example, SAI scrutinizes the decision-making processes behind public investments, procurement procedures, and financial management. By identifying instances where discretion has been abused or where actions lack transparency, SAI effectively reduces the space in which corruption can occur. The more a public official's decisions are monitored, the less room there is for arbitrary or corrupt choices.

3. Strengthening Accountability (A)

Accountability ensures that public officials and institutions are held responsible for their actions. A lack of accountability is a key driver of corruption, as it allows individuals to act with impunity, knowing that there will be no consequences for their actions.

SAI's Role: SAI strengthens accountability by conducting independent audits and publishing its findings. These audits provide evidence of how public funds are being used, whether public policies are being implemented effectively, and if public services are being delivered as promised. In cases where audits reveal mismanagement or corruption, SAI holds public institutions accountable by providing recommendations for corrective actions and urging the government to take steps to address the issues. Furthermore, its work is made public, which allows for external pressure from the media, civil society, and the general public to ensure that the government acts on these recommendations.

The Impact on Corruption in Albania: A Closer Look through the Klitgaard Equation

In the Albanian context, the role of **KLSH** (Albanian SAI) in promoting *transparency* and *accountability* is crucial in minimizing corruption as per the Klitgaard equation. By reducing the monopoly power (M) and the level of discretion (D), while strengthening accountability (A), Albania will improve several key areas as:

- Public sector transparency, where opportunities for corrupt activities such as embezzlement, bribery, and nepotism are bigger;
- The accountability framework in the public sector, making it more difficult for public officials to act without facing consequences.
- Discretionary decision-making in public procurement and allocation of funds will be more regulated and subject of oversight, by reducing this way opportunities for corruption.

Broader Impacts of Monitoring Based on the Klitgaard Formula

When corruption is actively monitored using the Klitgaard formula, the following broader impacts are likely to occur:

1. Increased Transparency

- Regular monitoring of monopoly, discretion, and accountability leads to more transparent governance. When institutions and officials know that their actions are being scrutinized, they are less likely to engage in corrupt practices.
- Transparency increases public trust and participation, as citizens can see how decisions are made and resources are allocated. This reduces the opacity that often breeds corruption.

2. Strengthening Rule of Law

- Monitoring corruption based on the Klitgaard formula helps strengthen the rule of law. It ensures that laws and regulations are followed, and any deviations are detected and addressed.
- This reinforces legal and regulatory frameworks that protect against corruption, making it harder for individuals to exploit gaps or loopholes in the system.

3. Empowering Civil Society

- As corruption is monitored more systematically, civil society organizations, the media, and the public are empowered to act as watchdogs. They can demand accountability from government officials and institutions based on the findings from monitoring reports.
- This increases the pressure on public officials to behave ethically and discourages corrupt practices by making it more difficult to act without facing scrutiny or consequence.

4. Institutional Strengthening

- Continuous monitoring based on the Klitgaard formula helps identify institutional weaknesses. It can highlight gaps in governance, areas where accountability mechanisms are lacking, or sectors where discretion is too high.
- This drives reforms aimed at strengthening institutions, enhancing governance, and creating stronger checks and balances. It can lead to better-designed public policies and improved administrative structures, all of which reduce the opportunities for corruption.

Conclusion

Corruption is a pernicious challenge affecting modern day governance and development. The increase in publicity and awareness of corruption cases has brought the issue of accountability and transparency into focus. It also challenges the notions of independence and professionalism

of public auditors who should perform their role more impartially and objectively. Regardless of the variety of frameworks, global commitments as well as the increase of cooperation at the end of the day we have to accept that this phenomenon is and will continue to be present, it remains the duty of each of us to have a part of our integrity in terms of promoting transparency and accountability.

The Klitgaard equation remains a valuable framework for understanding the dynamics of corruption, and Albania's experience shows how systematic efforts to enhance transparency and accountability can lead to tangible improvements in governance and the reduction of corruption.

The monitoring of corruption through the lens of the Klitgaard equation brings several significant benefits to the fight against corruption. By focusing on monopoly, discretion, and accountability, monitoring can identify critical areas where corruption is likely to occur and implement reforms that reduce opportunities for corrupt behavior.

- Reducing monopoly and discretion limits the opportunities for corrupt actions, while enhancing accountability ensures that those who engage in corrupt behavior are held responsible.
- Furthermore, monitoring increases transparency, strengthens the rule of law, empowers civil society, and helps strengthen institutions.

Ultimately, such monitoring creates a more transparent, accountable, and fair system of governance, reducing the incentives for corruption and improving overall public sector performance.

What impact does the monitoring of this phenomenon bring:

1. Increased transparency: By closely monitoring the audit process, Supreme Audit Institutions (SAIs) can be influenced by increasing transparency in the management of public finances. This can help identify and prevent corrupt practices such as embezzlement, mismanagement of funds and fraud.
2. Accountability: Monitoring the audit process can hold government officials and public servants accountable for their actions. SAIs can ensure that public funds are used for their intended purposes and that appropriate oversight is in place to prevent corruption.
3. Prevention of corruption: The fact that the audit process is closely monitored by SAIs can act as a deterrent to those who may be tempted to engage in corrupt activities. The fear of being "caught" and facing the consequences can discourage individuals from engaging in corrupt practices.
4. Identifying problem areas: SAIs can identify "red flags" and potential areas of concern through their monitoring process. This can help them focus their audits on areas that are at higher risk of corruption and ensure that appropriate measures are taken to address any issues that are uncovered.
5. Building public trust: SAI's role as a watchdog of public finances, actively monitoring the audit process and taking action to fight corruption, helps build public trust in government institutions. This can foster a culture of accountability and integrity within the public sector and help promote good governance practices.

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CLIMATE CHANGES AND THEIR IMPACT ON THE SECURITY OF GLOBAL SOCIETY

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Abstract

Global society is exposed to a variety of security risks. One of the key security challenges of today should be found in the negative climate changes, which have been very intense in the last few decades, and the consequences of the changes are increasingly drastic. Due to the permanent pollution of the planet and the creation of the "greenhouse" effect, there is an increase in temperatures and the creation of worse conditions for life. The glaciers of the South and North Poles are melting, the ocean and sea levels are rising, the level of ocean acidity is increasing, precipitation patterns are changing, certain mutations and changes in plant and animal life are occurring, and the safety of global society is threatened by drastic natural disasters, extremely high temperatures, strong winds, extremely heavy precipitation and other phenomena that are harmful to people and their property.

Keywords: climate, changes, natural disasters, security, risks.

INTRODUCTION

Climate changes represent a statistical distribution of weather patterns and changes last for a long period of time. Climate changes usually last several decades. They are caused by various factors such as biotic processes, variations in solar radiation, tectonic plate movements, volcanic eruptions and global warming.

Biotic processes are divided into three groups based on environmental factors. Environmental factors act in a complex manner, they continuously change in space and time and are mutually conditioned. Environmental factors are divided into abiotic, which represent the physical and chemical conditions of the environment, and biotic, which include the influence of other living beings on the organism.

Abiotic factors are determined in mutual relationships that can be very diverse. They come from living beings and are an environmental factor. Abiotic factors are divided into mutual influences between organisms, human influences and the influences of living organisms on the external environment.

The impacts can be reflected in the impact on plants, animals, the impact of plants on animals, animals on plants, as well as mutual impacts of plants and animals. Relationships are best demonstrated through the example of a food chain. These are actually the most important

mutual relationships that rule in the ecosystem. Also, relationships are observed through the process of biocenosis, specific relationships that are related to housing, reproduction, dispersion or displacement of members of a community. Human influence is the strongest and is considered a special anthropogenic environmental factor (Muir, 2000: 250).

The influence of living beings on the external inanimate environment should be emphasized. Oxygen, as well as a good part of the carbon monoxide in the atmosphere and water, comes from living organisms, which develop food chains and develop relationships between producers, consumers and decomposers. Limestone rocks are formed as a result of centuries of deposition of the shells of sea and ocean organisms. Green woody plants that existed in the distant past were formed from deposits of needles, oil and natural gases.

The mutual influence of plants in the same habitat can be indirect or direct. The immediate impact is manifested through symbiosis and parasitism. In symbiosis, one organism is the host, while the other is a parasite. However, in symbiosis both organisms benefit from each other. Parasitism, commensalism and mutatism arise from the relationship of symbiosis (Hilje, 1984: 58).

1. METHODOLOGY

Climate change is a challenge for the whole world today. The consequences of climate change are manifested through drastic and very extreme weather patterns. The melting of the North and South Poles, rising ocean and sea levels, extreme droughts, precipitation, strong winds and similar phenomena have caused numerous difficulties in the everyday life of ordinary people.

The aim of this paper is to consider the potential possibilities of suppressing and preventing the harmful consequences caused by climate change at the global level. Also, the work indicates the measures that must be taken in order to protect the global population from extreme weather conditions.

The basic hypothesis of the work is: The action of the human factor on nature has caused numerous climate changes, which today threaten the life of humanity on a global level. Auxiliary hypotheses are: Reducing the use of fossil fuels and the use of fuels from alternative sources can contribute to the reduction of global warming, as the most harmful consequence of climate change. The most developed countries of the world must work on raising preventive and expeditious measures in case of extreme climatic conditions, such as large fires, floods, earthquakes, storms and similar natural disasters.

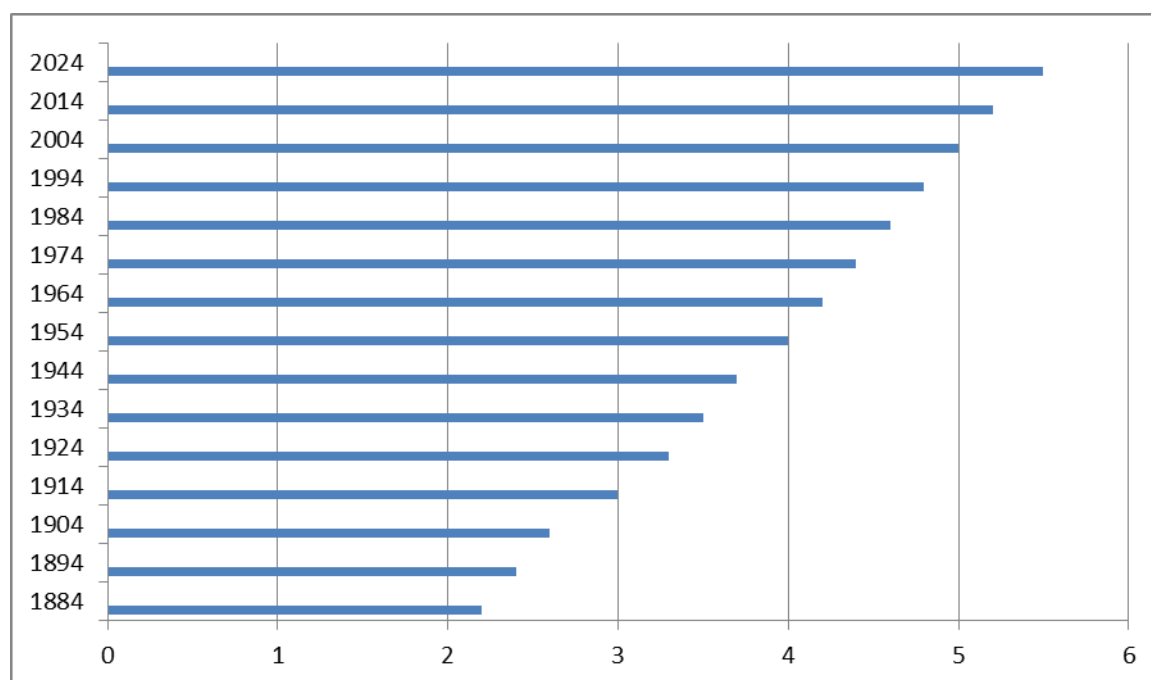
In the work itself, well-known scientific techniques and methods are used. Methods of analysis and synthesis of relevant literature content, methods of description, comparison, specialization and generalization are used. The scientific justification of the work is reflected in the contribution to the academic community in solving a significant problem that is becoming more and more relevant from year to year. The social justification of the work is manifested through

the analysis of the significant topic of climate change, as well as the consequences of climate change, which significantly threaten the population of planet Earth. The topicality of the topic is best seen through extreme climate changes that cause extremely strong droughts, rains, extremely strong storms followed by strong winds and other phenomena, which were not so frequent and prevalent before.

2. DISCUSSION AND RESULTS

In the observed time period of 140 years, the planet Earth warmed by one degree on average. Although at first glance it seems that this is not a drastic increase in temperature, it is actually an increase that causes numerous climatic changes (Dubak, 2017: 19). Table 1 shows the rise in temperature on Earth during the observed time period:

Table 1: Temporal averages of temperature:



In the observed period of time, a constant increase in average temperatures is clearly observed. Temperatures have been increasing progressively in the last three to four decades, which is associated with the creation of damage to the ozone layer, but also with the increasing use of fossil fuels and other harmful gases and pollutants.

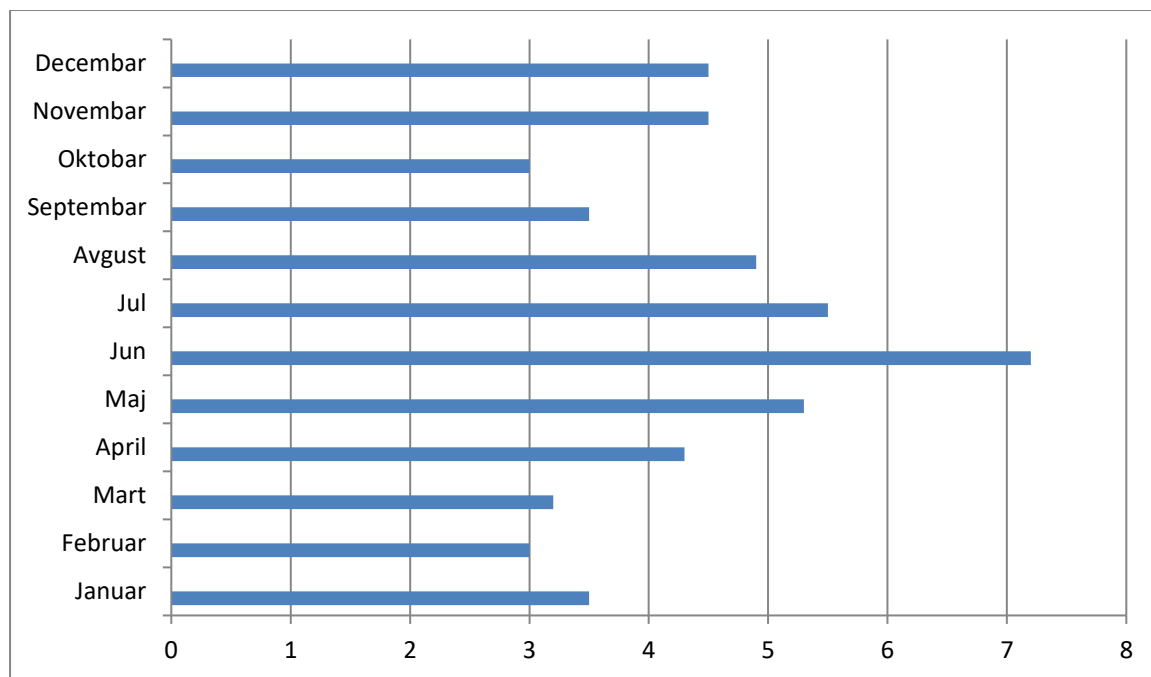
As a problem, the so-called the greenhouse effect, which occurs due to enormously high concentrations of carbon monoxide, as well as other gases whose concentration is high in the Earth's atmosphere. Gases of different structures and origins contribute to the greenhouse effect, and harmful gases are released into the atmosphere to a large extent by human activity (Belić, 2006: 45).

The recommendation of experts is to stop the further increase in temperature at 1.5 degrees if possible. The biggest problem is the melting of the glaciers at the North and South Poles, which is a direct danger for a large part of the populated areas that gravitate to the coastal region. Oceans and seas rise, which intensifies the problem of flooding. The water in the oceans becomes more acidic, leading to acidification. Atmospheric precipitation changes its established patterns, and longer dry and longer rain waves occur, which threatens the usual rhythm in the biosphere and agricultural activity. This leads to difficulty in life and survival conditions for numerous plant and animal species, which are more difficult to adapt to the changes that have occurred.

The established rainfall regime in the Republic of Serbia has been drastically disrupted in the last few decades. The summers are extremely dry, with increasingly high average temperatures, while the problem of increasingly intense and abundant precipitation in the spring and autumn months occurs. Winters are mild, without low temperatures and without snowfall.

Graph 2 shows the level of precipitation per month on average over the past three decades:

Graph 2: Precipitation level by month for the period 1994-2024. years:



Among the driest years in the past three decades was the year 2000, when only 223.1 millimeters of precipitation was measured in the territory of the city of Kikinda. The rainiest year was 2014, when 1515.5 millimeters of precipitation was measured on the territory of Zlatibor. Precipitation is one of the most important climatic elements. Due to the atmospheric processes and features of the relief, precipitation is irregularly distributed in time and space on the territory of Serbia. The normal annual rainfall for the whole country is 896 millimeters. Annual amounts of precipitation on average increase with altitude. Drier areas, with

precipitation below 600 millimeters, are located in the northeast of the country, as well as in the South Morava valley and part of Kosovo. The area consisting of the Danube, the valley of the great Morava and its continuation towards Vranje and Dimitrovgrad, have up to 650 millimeters of precipitation during the year. Going east, in the area of the Homoljske Mountains, the annual precipitation amounts reach values close to 800 millimeters. It is similar in the mountainous areas in the southeast of Serbia. The larger and more compact area towards the west and southwest represents the rainiest regions of Serbia. According to the Pešter Plateau and Kopaonik, the values increase up to 1000 millimeters per year, and some mountain peaks in the southwest of Serbia have more abundant precipitation and over 1000 millimeters.

EXTREME WEATHER CONDITIONS

In the spring of 2014, the Balkan region was affected by an extremely strong flood, which was the result of the action of the cyclone "Tamara". The entire Balkan peninsula was affected by this severe weather event, as well as a good part of Central and Southeastern Europe. The effect of the cyclone was on an extremely large area, vertically up to 10 kilometers through the toposphere. The air mass was 100% saturated with a constant increase in humidity with the help of warm air coming from the south and east. This was greatly favored by the geographical and physical specificity of the Balkans. The epicenter of the cyclone was over Serbia and Bosnia and Herzegovina, where the heaviest rainfall occurred in the period from May 13 to 15, 2014. The weakening of precipitation occurs only on May 16 of the same year.

In the entire region, as a result of devastating floods, 86 people lost their lives, 57 in the Republic of Serbia, 27 in Bosnia and Herzegovina, three in Croatia, two in Romania and one in Slovakia (Babić - Mladenović, Kolarov, 2014: 21). In the Republic of Serbia, the most severely affected area is the area of Obrenovac, a populated part of the city of Belgrade, where 8,700 residents had to be evacuated. In addition to Obrenovac, Paraćin, Petrovac na Mlavi, Svilajnac, Smederevo, Smederevska Palanka, Krupanj, Šabac, the towns of Jamena, Morović and Višnjićevo, Sremska Mitrovica, Šid, Trstenik, Kosjerić, Bajina Bašta, Mali Zvornik, Koceljeva and Mali Zvornik were hit by devastating floods.

On the territory of Bosnia and Herzegovina, the Bosna, Drina, Sana, Sava and Vrbasa rivers overflowed, and the worst affected cities were Brčko, Šamac, Maglaj, Doboj, Derventa, Tuzla, Prijedor, Travnik, Janja, Bijeljina, Zenica, Živinice, Vareš. Zavidovići, Ključ, Banja Luka and Čelinac.

In Croatia, it was more critical in the Posavina region and in the towns of Gunja, Račanovac, Rajevo Selo, Bošnjaci, Vrbanja, Drenovica, Strošinci, Đurići, Posavski Podgajci and Soljani. A complete evacuation of the population took place in the towns of Županja, Cerni and Gradište.

CONCLUSION

Climate change contributes to the creation of extreme weather conditions, which threaten people's safety. The paper proved the basic hypothesis that human action contributed to the greatest extent to the occurrence of climate change, and that man's nihilistic attitude towards nature, careless attitude and effort only to satisfy personal egoistic needs is the main cause of climate change, as well as all the accompanying harmful consequences.

The use of fossil fuels is considered one of the biggest problems in environmental pollution and the creation of the greenhouse effect. Although alternative sources of energy are available to man, embodied in bioenergetics, solar energy, energy from wind generators, fossil fuels still have a dominant representation.

It is up to the most developed countries in the world to develop and encourage preventive measures aimed at protecting the environment and reducing the constant increase in temperature to a maximum of 1.5 degrees. The Paris agreement, which established interstate cooperation on a global level in the fight against climate change, the Kyoto Protocol, which sought to reduce greenhouse gas emissions with the aim of reducing them to five percent less than in 1990, should be cited as a positive development. Unfortunately, the Kyoto agreement was not successful and was officially repealed in 2012. The reason should certainly be sought in the economic interests of the great powers, which prevailed over the interests of a healthy and clean environment.

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THE CONTEXT OF FINTECH AND ITS IMPACT ON FINANCIAL SERVICES AND MANAGEMENT

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Abstract

Over the past decade, the financial industry has undergone a significant transformation through technological innovations in fintech, which have reshaped the delivery of financial services. This study provides a detailed analysis of the various roles fintech plays in enhancing financial services and management. Several key issues are of importance, particularly its efficiency, user experience, risk management, and regulatory challenges. This study explores the impact of fintech companies and technological innovations on traditional financial institutions, utilizing a literature review, multiple case studies, and an analysis of each key trend in the industry. The study offers an informative overview of the financial services industry's adaptation to digital transformation, alongside the significant challenges posed by fintech.

Keywords include fintech, innovations, financial services, regulatory challenges, and management.

KONTEKST FINTECHA I NJEGOV UTICAJ NA FINANSIJSKE USLUGE I MENADŽMENT

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Abstrakt

Tokom poslednjih deset godina, finansijska industrija je prošla kroz značajnu transformaciju putem tehnoloških inovacija u fintech-u koje su preoblikovale pružanje finansijskih usluga. Ova studija detaljno analizira brojne uloge fintech-a u poboljšanju finansijskih usluga i upravljanja. Postoji nekoliko pitanja od značaja, posebno njegova efikasnost, korisničko iskustvo, upravljanje rizicima i regulatorni izazovi. Ova studija istražuje uticaj koji fintech kompanije i tehnološke inovacije imaju na tradicionalne finansijske institucije, koristeći pregled literature, brojne studije slučaja i analizu svakog ključnog trenda u industriji. Ova studija pruža informativni pregled o prilagođavanju industrije finansijskih usluga digitalnoj transformaciji, zajedno sa njenim suočavanjem sa mnogim značajnim izazovima koje donosi fintech.

Ključne reči su fintech, inovacije i finansijske usluge, kao i regulatorni izazovi i menadžment.

Uvod

Uvođenje finansijske tehnologije (fintech) je važan razvoj u finansijskoj industriji zato što omogućava brzo, bezbedno i efikasno pružanje finansijskih usluga. Fintek obuhvata digitalna plaćanja, mobilno bankarstvo, blokčejn tehnologije i robo-savete, što su sve inovacije koje korisnicima omogućavaju brži pristup uslugama i veći stepen personalizacije. Od samog svog nastanka, Fintech je mnogim pojedincima omogućio pristup finansijskim uslugama, dok je onima koji su ih ranije koristili dodatno olakšao pristup. Bilo je izvodljivo od samog početka, kao i od tada. PayPal, koji je bio jedan od pionira, danas razvija kriptovalute i veštačku inteligenciju, što su ključni faktori. Takođe, tradicionalne finansijske institucije se suočavaju sa stalnim izazovom da ostanu konkurentne, nastojeći da budu u toku sa brzim promenama. Ispitivanje kako se sve finansijske institucije prilagođavaju digitalnoj transformaciji zahteva razumevanje uticaja fintecha na operativnu efikasnost kao i na korisničko iskustvo i upravljanje, kao i na neke regulatorne izazove. U ovom radu detaljno ćemo analizirati efekte ovih promena i predstaviti ključna istraživačka pitanja.

Metodologija istraživanja ove studije kombinuje kvalitativne i kvantitativne metode istraživanja. Analiza sekundarnih podataka obuhvata pregled naučnih radova, industrijskih izveštaja i regulatornih dokumenata, dok je empirijski deo istraživanja zasnovan na anketama i studijama slučaja fintech kompanija. Korišćeni su deskriptivna statistika i komparativna analiza za prikaz trendova i efekata fintech inovacija na finansijski sektor. Jedna od ključnih teza ovog istraživanja je efikasnost fintecha, odnosno kako fintech utiče na operativnu efikasnost finansijskih institucija, kroz primenu automatizacije i smanjenje operativnih troškova. Takođe, istraži će se kako fintech utiče na korisničko iskustvo, s posebnim fokusom na to kako omogućava personalizovane usluge i povećava dostupnost finansijskih usluga za širu populaciju. Druga važna teza odnosi se na upravljanje rizicima, gde će biti razmotreno kako fintech alati kao što su veštačka inteligencija i blockchain omogućavaju efikasnije upravljanje finansijskim rizicima. Na kraju, razmotreni su regulatorni izazovi s kojima se fintech kompanija i tradicionalna finansijska institucija suočavaju, kao i strategije koje se primenjuju za prevazilaženje tih izazova. Ovaj rad je strukturiran kako bi se detaljno analizirali uticaj fintecha na finansijske usluge i menadžment. Prvo, biće predstavljen kontekst razvoja fintecha, kako bi se omogućila jasna slika njegovog razvoja. Zatim će biti analizirani ključni faktori koji utiču na finansijske usluge i menadžment, sa posebnim osvrtom na tehnološke inovacije. Nakon toga, biće prikazani relevantni slučajevi iz prakse i trendovi u fintech industriji, uz pregled literature. Na kraju, rad će sadržati zaključke i preporuke za buduća istraživanja u ovom sektoru.

Pregled literature

Bwalya i Paulov rad (2024) primjećuju da je utjecaj finansijskih tehnologija izuzetno bitan za sve tradicionalne finansijske institucije jer im se otvaraju nove poslovne mogućnosti, ali i dolaze u rizik. Ove transakcije čine mnogo složenijim dobivanje i izvođenje različitih operacija, a također otežavaju dostupnost usluga, povećavaju vrijeme obrade transakcija i čine ih skupljim u odnosu na postojeće sustave. Fintech napreduje i istovremeno smanjuje limitacije ulaska u razne poslovne sfere, dok za tradicionalne institucije oni predstavljaju novu konkurenciju i priliku koju ne oklijevaju iskoristiti. Kao što istražuju Lu, Wang, Wu i Ye (2020) kako finansijske tehnologije utječu na preko 300 milijardi dolara infrastrukturnih investicija u razvoju nasljednika Nonotak

sastava u algoritamskom trgovanju, blockchain tehnologijama i kriptovalutama. Ove transakcije će uspostaviti mnogo efikasnije, sigurnije i novije metode, ali postavljaju mnogo teža pitanja u regulaciji i sigurnosti. Kao i svi drugi biznisi, i ove kriptovalute i olakšavanje pravnih procesa poslovanja trebaju biti opskrbljene regulativnim uvjetima, kao što je olakšano Butters i Lance (2020). Catuogni i Rajapathirana (2023) donose nove dimenzije financijske pismenosti naglašavajući pritužbe i zamolbe banaka gdje mnogi vlasnici neobičnih tehničkih ugovora sudjeluju, sviđa se posebno mladima.

Nadalje, Guillén i Rubio (2022) tvrde da je natjecanje za tržišni udio među bankama značajno poboljšano usvajanjem digitalnih tehnologija. Korištenjem umjetne inteligencije, napredne analize podataka i čak tehnologije blockchain, banke su u mogućnosti učinkovito odgovarati na fluktuacije na tržištu ili zahtjeve korisnika, što njihove usluge čini učinkovitijima i fleksibilnijima. Digitalna transformacija omogućava bankama da stvaraju nove proizvode koji zadovoljavaju potrebe modernih potrošača, povećavajući njihovu konkurentnost na globalnoj razini. S obzirom na to da potrošači sada zahtijevaju brzinu, sigurnost i personalizaciju, banke mogu zadovoljiti ovaj visok nivo očekivanja i pružiti izvanredno iskustvo svojim kupcima (Kadir i Sarfraz, 2021). Također, Kadir i Sarfraz (2021) proučavaju utjecaje tehnologije blockchain na transparentnost i učinkovitost tradicionalnih financijskih procesa. Odlaskom od centralizacije podataka smanjuje se potreba za posrednicima, čineći transakcije jeftinijima, bržima i sigurnijima nego ikad prije. Ova tehnologija je posebno korisna u industrijama poput sustava plaćanja, obrade osjetljivih podataka i verifikacije transakcija. Blockchain olakšava formiranje pametnih ugovora koji autonomno izvršavaju uvjete sporazuma nakon što su svi uvjeti ispunjeni, čime minimiziraju ljudske pogreške i troškove posrednika trećih strana. U tim istraživanjima, rad drugih istraživača dodatno ukazuje na dubok utjecaj koji fintech inovacije imaju na tradicionalnu financijsku industriju. Na primjer, Zhang, Li i Wang (2022) proučavaju učinak umjetne inteligencije za prepoznavanje obrazaca na financijskim tržištima, što pomaže u preciznijem predviđanju i upravljanju rizicima. Slična istraživanja uključuju korištenje blockchaine u automatizaciji i verifikaciji transakcija, što značajno smanjuje greške dok povećava sigurnost, kako je primijetio Lee (2021).

Nadalje, fintech omogućava bankama da koriste složene analitičke alate za poboljšanje upravljanja rizicima. Na primjer, otkrivanje prijevara u stvarnom vremenu i financijskog kriminala postalo je lakše korištenjem strojnog učenja (Zhang, 2021). U tom kontekstu, blockchain tehnologija se pozicionira za poboljšanje sigurnosti i privatnosti u sustavima koji se bave obradom osjetljivih informacija, čineći ih stoga manje ranjivima na hakiranje i druge oblike napada. Ipak, prednosti koje fintech ima, poput povećane učinkovitosti i sigurnosti transakcija, brzih procesa i smanjenih troškova su brojne, a postoje i mnoga pitanja koja se odnose na regulatornu usklađenost, zaštitu podataka i informacija i sigurnost. Za ove tehnologije, inovacije kriptovaluta, pametnih ugovora i čak decentraliziranih autonomnih organizacija (DAO) zahtijevaju nove pravne i regulatorne okvire.

Analiza fintecha i njegov uticaj na finansijske usluge i menadžment

Fintech je doveo do velikih promjena u načinu na koji obavljamo finansijske transakcije. Procesi koji su nekada zahtijevali mnogo vremena sada su automatizirani, što omogućava brže i sigurnije obavljanje transakcija. Uz digitalizaciju finansijskih usluga smanjila se potreba za fizičkim poslovnica, a internet i mobilne aplikacije postali su ključni alati za obavljanje tih transakcija (Vives, 2017). Pametni ugovori temeljeni na blockchain tehnologiji omogućuju automatsko izvršenje ugovornih obveza, što smanjuje pravne i operativne troškove. Takođe, digitalne valute i decentralizirani finansijski sistemi otvaraju nove mogućnosti za međunarodne transakcije, bez potrebe za tradicionalnim posrednicima. Ako uporedimo razvoj fintech sektora u razvijenim zemljama i na tržištima u razvoju, vidimo značajne razlike u načinu implementacije i njegovom uticaju. U razvijenim ekonomijama, fintech je uglavnom usmjeren na poboljšanje korisničkog iskustva i efikasnosti plaćanja, dok u tržištima u razvoju igra ključnu ulogu u omogućavanju finansijske inkluzije i širenju dostupnosti kredita (Demirgüç-Kunt et al., 2018).

Kineske kompanije poput Ant Group i WeChat Pay prednjače u globalnoj ekspanziji fintech sektora, dok američke firme poput Stripe i Square fokusiraju svoje napore na digitalna plaćanja i analizu podataka. Brzi razvoj fintech industrije donosi brojne regulatorne izazove, jer tradicionalni zakonski okviri često ne uspevaju da isprate brzinu tehnološkog napretka, što stvara potrebu za novim zakonodavnim rešenjima. Ključni izazovi uključuju zaštitu privatnosti korisničkih podataka, sprečavanje finansijskih prevara, kao i usklađenost sa zakonima o sprečavanju pranja novca (AML) i finansiranju terorizma (CFT) (Zetzsche et al., 2017). Takođe, kriptovalute i decentralizovani finansijski sistemi otvaraju dodatna regulatorna pitanja, jer ove tehnologije ne podležu centralizovanoj kontroli. Vlade i međunarodne organizacije nastoje da pronađu rešenja koja će omogućiti balans između inovacija i zaštite korisnika (Arner et al., 2016). Fintech predstavlja značajan pomak u načinu obavljanja finansijskih transakcija, donoseći inovacije koje su poboljšale efikasnost i sigurnost finansijskih usluga, kao i omogućile širu dostupnost. Ovaj sektor smanjuje zavisnost od tradicionalnih bankarskih modela, jer je mnoge finansijske procese učinio bržim, jeftinijim i jednostavnijim. Pre nego što je fintech postao dominantan, mnogi procesi u finansijskom sektoru bili su spori, skupi i zahtevali mnogo ljudskog angažovanja. Automatska obrada transakcija, integrisani sistemi za digitalna plaćanja i napredne tehnologije kao što su blockchain i veštačka inteligencija učinili su ove procese daleko efikasnijim i bržim (Vives, 2017).

Jedan od glavnih tehnoloških pomaka u finansijskom sektoru je digitalizacija usluga, koja je drastično smanjila potrebu za fizičkim bankama. Internet i mobilne aplikacije postali su ključni alati za obavljanje transakcija, omogućavajući korisnicima da pristupe finansijskim uslugama u bilo kojem trenutku i s bilo kog mesta. Na primer, mobilno bankarstvo korisnicima omogućava jednostavno upravljanje finansijama putem mobilnih uređaja, dok online platforme za plaćanje, poput PayPala ili Venmo-a, omogućavaju međunarodna plaćanja u stvarnom vremenu, bez potrebe za tradicionalnim bankama ili posrednicima (Vives, 2017). Jedan od najvažnijih aspekata fintecha je upotreba blockchain tehnologije, koja omogućava kreiranje decentralizovanih sistema i povećanje transparentnosti transakcija. Blockchain se koristi za razvoj pametnih ugovora (smart contracts), koji automatski izvršavaju ugovorne obaveze bez potrebe za posrednicima.

Pametni ugovori značajno smanjuju operativne i pravne troškove, kao i vreme potrebno za realizaciju ugovora, jer omogućavaju direktnu interakciju između strana u transakciji. Korišćenjem blockchain tehnologije, svi podaci o transakcijama postaju trajno zabeleženi u blokovima, čime se povećava sigurnost i smanjuje rizik od prevara ili grešaka u obradi podataka (Arner, Barberis, & Buckley, 2016). Digitalne valute i decentralizovani finansijski sistemi takođe predstavljaju važnu komponentu fintecha. Korišćenjem kriptovaluta poput Bitcoina, Ethereum i drugih, korisnici mogu obavljati međunarodne transakcije direktno među sobom, bez potrebe za tradicionalnim finansijskim posrednicima poput banaka. Ova tehnologija otvara mogućnosti za brze i jeftine transfere novca širom sveta, smanjujući zavisnost od nacionalnih valuta i centralizovanih sistema. Dodatno, decentralizovani sistemi omogućavaju korisnicima veću autonomiju, čineći transakcije bržim i transparentnijim (Zetzsche et al., 2017).

Kako fintech sektor nastavlja da raste, tako se javljaju i značajni regulatorni izazovi. Tradicionalni pravni okviri koji su nekada regulisali finansijski sektor ne uspevaju u potpunosti da prate brzinu tehnološkog razvoja, što stvara potrebu za novim zakonodavnim pristupima. Regulacija fintech industrije postaje složenija zbog tehnologija poput kriptovaluta i decentralizovanih finansijskih sistema, koje često ne podrazumevaju centralizovanu kontrolu i mogu omogućiti korisnicima anonimnost, što otežava praćenje i regulisanje transakcija. Kroz analizu regulatornih okvira postavlja se pitanje kako uskladiti brzo napredovanje inovacija sa zaštitom privatnosti korisnika, kao i sprečavanjem prevara i usklađivanjem sa zakonima o sprečavanju pranja novca (AML) i finansiranju terorizma (CFT) (Zetzsche et al., 2017). Na tržištima u razvoju, fintech igra ključnu ulogu u finansijskoj inkluziji. Mnogi ljudi koji su prethodno bili isključeni iz finansijskog sistema sada imaju pristup osnovnim uslugama poput štednje, kredita i osiguranja. Dok je u razvijenim zemljama fintech više usmeren na poboljšanje korisničkog iskustva i smanjenje troškova transakcija, u zemljama u razvoju pruža pristup kreditima i omogućava transfer novca, čak i u regionima gde fizičke banke nisu prisutne. Platforme kao što je M-Pesa u Keniji omogućile su široku upotrebu mobilnih plaćanja i digitalnih novčanika, što je omogućilo ljudima u ruralnim područjima da obavljaju finansijske transakcije putem mobilnih telefona (Demirgüç-Kunt et al., 2018).

Kineske kompanije poput Ant Group i WeChat Pay prednjače u globalnoj fintech ekspanziji, značajno menjajući način na koji ljudi u Aziji obavljaju svakodnevne finansijske transakcije. Fokusiraju se na digitalna plaćanja koja su usko povezana s dnevnim životom korisnika, čineći ih jednostavnijim i dostupnijim. S druge strane, američke fintech firme kao što su Stripe i Square usmerene su na poboljšanje sistema plaćanja i analizu podataka, često u saradnji sa malim preduzećima kako bi pojednostavile plaćanje i poboljšale korisničku uslugu. Ovi različiti pristupi pokazuju kako fintech sektor postavlja nove globalne standarde, stvarajući konkurenciju tradicionalnim bankama i finansijskim institucijama. Iako fintech donosi mnoge prednosti, sektor se suočava sa značajnim izazovima u pogledu sigurnosti i zaštite podataka. Iako tehnologije poput blockchaine i decentralizovanih finansijskih sistema mogu pojednostaviti transakcije, one takođe postavljaju pitanja u vezi sa privatnošću korisnika i mogućnostima praćenja nelegalnih aktivnosti. Zbog toga postaje sve važnija adekvatna regulacija. Vlade i međunarodne organizacije rade na tome da balansiraju inovacije sa potrebom za sigurnošću i zaštitom korisničkih podataka, istovremeno nastojeći da održe transparentnost i odgovornost u finansijskom sektoru (Arner et al., 2016).

U zaključku, fintech je značajno transformisao način na koji funkcionišu finansijske usluge, postavljajući temelje za dalji razvoj globalnog finansijskog sistema. Od revolucije u digitalnom plaćanju do mogućnosti koje pružaju decentralizovani finansijski sistemi, fintech nudi brojne prednosti u pogledu efikasnosti, pristupačnosti i sigurnosti. Ipak, da bi se obezbedila dugoročna održivost i zaštita korisnika, neophodno je da regulatorna tela nastave s razvojem zakonskih okvira koji balansiraju inovacije s potrebama zaštite privatnosti i sigurnosti podataka. U tom procesu, ključna je saradnja između kreatora inovacija u fintech sektoru i vladinih institucija, kako bi se obezbedio dugoročan i održiv razvoj ovog sektora.

Fintech i njegov uticaj na finansijske usluge i menadžment

Fintech je doveo do drastičnih promena u načinu obavljanja finansijskih usluga, uvodeći tehnologije koje omogućavaju brže, efikasnije i jeftinije transakcije. Tradicionalni procesi, koji su ranije zahtevali mnogo vremena za obradu i izvršenje, sada su delimično ili u potpunosti automatizovani, što smanjuje potrebu za ljudskim radom i omogućava lakši pristup uslugama. Digitalizacija finansijskih usluga omogućava korisnicima da obavljaju transakcije u bilo kom trenutku i sa bilo kog mesta putem interneta i mobilnih aplikacija, smanjujući potrebu za fizičkim prisustvom u bankama (Vives, 2017). U tom smislu, fintech nije samo inovacija u tehnologiji, već duboka promena u načinu na koji korisnici percipiraju i pristupaju finansijskim uslugama, kreirajući novi pristup upravljanju finansijama. Jedna od ključnih tehnologija koje je fintech omogućio je blockchain, koji ne samo da podržava kriptovalute, već i omogućava kreiranje pametnih ugovora. Ovi ugovori automatski izvršavaju ugovorne obaveze kada su ispunjeni unapred definisani uslovi, što rezultira značajnim smanjenjem operativnih i pravnih troškova. Kao decentralizovana tehnologija, blockchain omogućava transakcije koje ne zavise od tradicionalnih finansijskih posrednika, što je posebno korisno u međunarodnim transakcijama. Ovaj pristup ne samo da olakšava plaćanja, već i povećava sigurnost, jer sve transakcije ostaju zabeležene u nepromenljivim blokovima, čineći ih manje podložnim manipulacijama i prevarama (Arner, Barberis, & Buckley, 2016).

S obzirom na brzinu svog razvoja, fintech omogućava i rast digitalnih valuta, koje postaju alternativa tradicionalnim novčanim sredstvima. Valute poput Bitcoina, Etheruma, kao i digitalni juan u Kini, izazivaju promene u globalnom finansijskom sistemu, jer omogućavaju brže i jeftinije transakcije bez potrebe za posrednicima kao što su banke. Ove digitalne valute se oslanjaju na blockchain tehnologiju, koja doprinosi decentralizaciji finansijskih usluga i smanjuje rizik od korupcije. Međutim, one donose i brojna regulatorna pitanja, uključujući zaštitu korisničkih podataka, praćenje porekla sredstava i sprečavanje pranja novca (Zetzsche et al., 2017).

Za predstavljanje uticaja fintecha na finansijske usluge i menadžment, možemo koristiti tabelu koja sumira ključne aspekte, kao što su tehnološke inovacije, primene, izazovi i koristi. Ova tabela može prikazati kako fintech utiče na različite segmente finansijske industrije, kao i razlike koje se uoče između razvijenih tržišta i onih u razvoju. (Vidi tabelu ispod).

Tabelarni prikaz uticaja Fintecha na finansijske usluge

Aspekt	Tehnološke inovacije	Primeri primene	Koristi	Izazovi
Brzina i efikasnost transakcija	Automatizacija, digitalizacija, mobilna plaćanja	PayPal, Venmo, Apple Pay	Brže obavljanje transakcija, smanjenje operativnih troškova	Sigurnost i zaštita podataka u mobilnim platnim sistemima
Finansijska inkluzija	Digitalni novčanici, mikrofinansiranje, mobilno bankarstvo	M-Pesa (Kenija), Alipay (Kina)	Pristup finansijskim uslugama za nebankirane i nedovoljno bankirane osobe	Razlike u pristupu infrastrukturi u ruralnim i urbanim područjima
Regulatorni izazovi	Blockchain, kriptovalute, decentralizovani sistemi	Bitcoin, Ethereum, smart contracts	Brža i transparentnija transakcija bez posrednika	Nedostatak regulatornih okvira za decentralizovane sisteme
Korisničko iskustvo	Personalizacija, analiza podataka, automatizovani saveti	Robo-saveti, predlozi na osnovu podataka (kreditne kartice, banke)	Povećana personalizacija usluga, bolja korisnička podrška	Regulisanje zaštite privatnosti korisnika i podataka
Upravljanje rizicima	Veštačka inteligencija, automatizovani sistemi za nadzor	Upotreba AI u kreditiranju, blockchain u prevenciji prevara	Efikasnije upravljanje finansijskim rizicima, smanjenje prevara	Tehnička složenost i neadekvatna zaštita u decentralizovanim sistemima
Pristup tržištima u razvoju	Mobilne aplikacije, P2P lending, mikroplaćanja	Kineske aplikacije (Ant Group, WeChat Pay),	Uključivanje velikog broja ljudi u	Neadekvatna regulacija u mnogim

		PayPal u Latinskoj Americi	finansijski sistem	zemljama u razvoju
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Tabela prikazuje uticaj fintech-a na ključne aspekte finansijskog sektora, uključujući efikasnost i brzinu transakcija, kao i širenje pristupa finansijskim uslugama. Osim koristi, sektor se suočava sa izazovima koji zahtevaju pažnju, naročito u pogledu regulacije, zaštite privatnosti korisnika i smanjenja tehničkih i sigurnosnih rizika. Fintech omogućava bolji pristup finansijama u zemljama u razvoju putem mobilnih aplikacija i platformi za peer-to-peer lending (P2P). Na primer, Alipay i WeChat Pay su značajno poboljšali pristup finansijskim uslugama u Kini, dok je PayPal u Latinskoj Americi pomogao preduzetnicima da lakše uđu na globalna tržišta.

Kada uporedimo fintech u razvijenim i tržištima u razvoju, vidi se jasna razlika u primeni i implementaciji tehnologija. U razvijenim zemljama, fintech se uglavnom fokusira na poboljšanje korisničkog iskustva i efikasnost plaćanja, dok na tržištima u razvoju veći akcenat postoji na omogućavanju pristupa finansijskim uslugama široj populaciji. U razvijenim tržištima, kao što su Sjedinjene Američke Države i zemlje Evropske unije, fintech inovacije se uglavnom fokusiraju na unapređenje mobilnog bankarstva, digitalnih plaćanja i analitike podataka koja omogućava personalizovane usluge. Kompanije poput Stripe-a i Square-a prednjače u industriji digitalnih plaćanja, dok PayPal nastavlja da proširuje svoje platforme za međunarodne transakcije (Vives, 2017). S druge strane, u zemljama u razvoju, fintech ima značajan uticaj na finansijsku inkluziju, olakšavajući pristup uslugama kao što su krediti, osiguranje i štednja. U mnogim delovima Afrike, Azije i Latinske Amerike, gde je pristup tradicionalnim bankama ograničen, fintech je omogućio pristup osnovnim finansijskim uslugama. Na primer, M-Pesa u Keniji omogućava korisnicima da obavljaju mobilna plaćanja i šalju novac, čak i u ruralnim područjima bez prisustva fizičkih banaka (Demirgüç-Kunt et al., 2018). Takođe, fintech olakšava pristup malim i srednjim preduzećima kreditima, što doprinosi bržem ekonomskom razvoju u ovim regionima. Kako fintech sektor brzo raste, tako se i izazovi u regulaciji postepeno povećavaju. Tradicionalni pravni okviri, koji su godinama razvijani, često ne mogu da prate brzinu tehnološkog napretka, što stvara nesigurnost u primeni postojećih zakona na nove oblike finansijskih usluga. Ključna pitanja koja se postavljaju u regulaciji uključuju zaštitu privatnosti podataka korisnika, sprečavanje finansijskih prevara i usklađenost sa zakonima o sprečavanju pranja novca (AML) i finansiranja terorizma (CFT). Iako upotreba velikih količina podataka u fintech industriji omogućava preciznije analize i personalizovane usluge, ona takođe donosi izazove u vezi sa zaštitom tih podataka i sigurnošću korisnika (Zetzsche et al., 2017).

Kriptovalute i decentralizovane finansije (DeFi) donose dodatne izazove jer ove tehnologije ne funkcionišu kroz centralizovane sisteme, već se oslanjaju na decentralizovane platforme koje nisu podložne nadzoru nacionalnih ili međunarodnih regulatora. Iako kriptovalute omogućavaju veću slobodu u transakcijama, one takođe povećavaju rizik od nezakonitih aktivnosti, poput pranja novca i finansiranja terorizma, jer ne postoji centralizovana kontrola. U tom smislu, vlade i međunarodne organizacije rade na razvoju regulatornih okvira koji će balansirati podsticanje inovacija i očuvanje sigurnosti finansijskog sistema (Arner et al., 2016). Zaključno, fintech ne samo da pruža značajna poboljšanja u pogledu brzine, efikasnosti i dostupnosti finansijskih usluga, već takođe postavlja pitanja koja se odnose na zaštitu podataka, sigurnost transakcija i potrebne

regulatorne okvire. Kako fintech nastavlja da se razvija, biće ključno da zakonodavne i regulatorne institucije prepoznaju te izazove i brzo reaguju, kako bi omogućile dalji razvoj inovacija, a istovremeno obezbedile zaštitu korisnika i integritet finansijskog sistema.

Zaključak

Fintech industrija predstavlja ključni faktor u savremenoj ekonomskoj transformaciji. Njene inovacije, koje obuhvataju digitalna plaćanja, mobilno bankarstvo, blockchain, veštačku inteligenciju i kriptovalute, drastično su promenile način na koji se finansijske usluge pružaju korisnicima. Fintech nije samo doprineo smanjenju troškova i poboljšanju efikasnosti, već je i otvorio vrata finansijskih usluga široj javnosti, omogućavajući pristup onima koji su ranije bili isključeni iz tradicionalnog bankarskog sistema. Ovaj sektor tako pomaže u smanjenju finansijske isključenosti, naročito u zemljama u razvoju gde tradicionalne banke nemaju snažnu prisutnost (Demirgüç-Kunt et al., 2018).

Takođe, fintech je unapredio korisničko iskustvo, nudeći usluge koje se brzo prilagođavaju potrebama korisnika i omogućavaju personalizovanu podršku (Chen, Wu, & Yang, 2019). Uspom fintech industrije donosi značajne izazove, kako za tehnološke firme, tako i za tradicionalne finansijske institucije. Jedan od glavnih problema je regulacija, jer s obzirom na brzinu uvođenja novih tehnologija, postojeći zakoni i pravni okviri često ne mogu pratiti tempo inovacija. Istraživanja Zetzsch, Buckleya, Arnera i Barberisa (2017) naglašavaju potrebu za usvajanjem novih regulatornih pristupa koji će omogućiti sigurnost tržišta, dok istovremeno podstiču dalji tehnološki napredak. Ključno je postići ravnotežu između zaštite privatnosti korisnika, prevencije prevara i očuvanja stabilnosti finansijskog sistema, uz istovremeno stvaranje prostora za konkurenciju i inovacije. Jedan od ključnih faktora za dalji razvoj fintecha biće napredak blockchain tehnologije, koja omogućava veću transparentnost, decentralizaciju i poboljšanu sigurnost u transakcijama (Philippon, 2016). Pored blockchain-a, druge tehnologije, poput biometrijske autentifikacije i veštačke inteligencije, mogu igrati važnu ulogu u smanjenju rizika od prevara i optimizaciji upravljanja finansijskim procesima. Na primer, blockchain omogućava brže i sigurnije transakcije, eliminirajući potrebu za posrednicima i smanjujući tako troškove, dok veštačka inteligencija u analizi podataka u realnom vremenu može doprineti tačnijim prognozama, boljim procenama rizika i bržem donošenju odluka, čineći čitav sistem efikasnijim (Gomber, Kauffman, Parker, & Weber, 2018).

Iako ove tehnologije donose brojne prednosti, one takođe otvaraju nove izazove u pogledu zaštite podataka i privatnosti. Budući da fintech usluge često zavise od obrade velikih količina ličnih informacija, ključno je razviti odgovarajuće regulative koje će garantovati sigurnost tih podataka. Regulatori širom sveta suočavaju se sa zadatkom da pronađu balans između zaštite korisničkih podataka i omogućavanja napretka tehnologije (Arner, Barberis, & Buckley, 2016). Posebno se postavlja pitanje kako stvoriti globalni regulatorni okvir koji bi mogao da se primeni na sve fintech inovacije, bez obzira na geografsku lokaciju ili vrstu pruženih usluga. Fintech stvara značajan pritisak na tradicionalne finansijske institucije, kao što su banke, osiguravajuće kompanije i druge finansijske organizacije, koje se moraju brzo prilagoditi novim tehnološkim izazovima kako bi održale konkurentnost. Mnoge banke već ulažu u digitalizaciju, automatizaciju i pružanje personalizovanih usluga, uključujući robo-advisore, mobilno bankarstvo i digitalna plaćanja. Ove promene nisu samo tehnološke prirode, već i organizacijske, jer banke moraju uskladiti svoje

poslovne modele sa novim zahtevima korisnika koji traže brže, fleksibilnije i efikasnije finansijske usluge (Vives, 2017).

Budućnost fintech industrije leži u dubloj integraciji tehnologije u sve oblasti finansijskih usluga, uključujući nove aspekte kao što su digitalne valute i decentralizovani finansijski sistemi (DeFi). Uspon ovih tehnologija može značajno transformisati globalnu ekonomiju, omogućavajući transakcije koje su brže, jeftinije i efikasnije, bez potrebe za posrednicima. Takođe, biometrijske tehnologije, poput prepoznavanja lica i otisaka prstiju, očekuje se da će igrati ključnu ulogu u poboljšanju sigurnosti, smanjujući rizik od krađe identiteta i zloupotrebe podataka (Chen et al., 2019).

U zaključku, fintech donosi revoluciju u finansijskom sektoru, nudeći mnoge prednosti u pogledu efikasnosti, inkluzije i konkurentnosti. Ipak, kako bi se u potpunosti iskoristile ove prednosti, potrebno je razviti odgovarajuće regulatorne okvire koji će biti usklađeni sa postojećim zakonodavstvom, što će omogućiti siguran i održiv rast ovog sektora. Takođe, neophodno je sprovesti dodatna istraživanja kako bi se unapredila sigurnost podataka, rešavali regulatorni izazovi i razvijali dugoročni poslovni modeli koji će doprineti daljem rastu fintech industrije.

Inovacije kao što su blockchain, veštačka inteligencija i decentralizovani finansijski sistemi, u kombinaciji sa odgovarajućim regulativama i zaštitom interesa korisnika, mogu oblikovati budućnost globalnog finansijskog sektora.

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DIGITALIZATION OF THE TOURISM ECONOMY AND SPATIAL PLANNING IN THE ENVIRONMENT OF CLIMATE GOALS WITH THE APPROACH OF THE REPUBLIC OF SERBIA, MONTENEGRO AND CROATIA

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Abstract:

This paper aims to explore the interaction between modern tourism, climate change, and spatial planning, with a particular focus on the application of digitalization and innovations in the tourism economy. The main goal is reviewing the key elements of the system of contemporary climate change and climate goals, politics and law in modern ambiances. The paper uses a methodological approach to consider digitalization phenomena in tourism and spatial planning in achieving existential climate goals. An overview is also given of the way of implementing global international obligations through the national regulations of Serbia, Montenegro and Croatia. The concepts of these countries are basically based on international regulation in this sphere with certain national specificities. We conclude that emphasizing the need for an integrated approach that combines digitalization, adaptation to climate change, and effective spatial planning to ensure the sustainable and prosperous development of modern tourism.

Key words: digitalization, tourism economy, innovations, climate change, spatial planning, climate goals, Serbia, Montenegro, Croatia;

Introduction

Contradictions in the living environment are essential challenges for all actors of modern society, so their legitimacy is striking through the constant engagement of competent international institutions. Industrialization and uncontrolled economic development have led to global challenges such as climate change, the depletion of the ozone layer, and growing economic inequality. These problems point to the need for urgent action, which is also recognized through international agreements such as the Paris Agreement, which aims to limit global warming and transition to sustainable development models.

Climate change is a long-term change in the Earth's temperature and weather patterns. Although natural variations in climate have existed throughout history, modern climate change is largely due to human activities, especially greenhouse gas (GHG) emissions such as carbon dioxide (CO₂) and methane (CH₄). The main cause of modern climate change is the burning of fossil fuels (coal, oil and gas) for energy production, transport, industry, and warming the planet. Additional factors include deforestation, which reduces CO₂ absorption capacity, and certain agricultural practices that increase methane emissions. Therefore, all segments of the global community have an imperative to formulate an adequate concept of climate goals. In this context, Serbia, Montenegro and Croatia are undertaking certain concepts towards improving the medium and long-term planning of objectives for the purpose of effective adaptation to current climatic conditions, in accordance with international legislation.

Modern tourism is facing the challenges of climate change, which creates the need for the application of new technologies and innovations. Digitalization plays a key role in this context, enabling

better monitoring and management of tourism's environmental impact. The use of smart technologies makes it possible to reduce carbon dioxide emissions, while innovations in ecotourism help to protect natural resources. The integration of digital platforms enables better planning of tourist destinations, optimization of traffic, and improvement of energy efficiency, therefore contributing to the sustainability of tourism in the face of climate change.

Tourism is one of the fastest growing sectors of the global and national economy today, but at the same time it contributes significantly to climate change in a negative constellation. The main sources of greenhouse gas emissions in tourism include transport, especially air transport, as well as energy consumption in accommodation facilities from spatial planning. According to research by relevant world actors, the carbon product of tourism accounts for about 8% of global greenhouse gas emissions as a repercussion of the greenhouse gas phenomenon.

Spatial planning plays a crucial role in the development of tourism, especially in the context of climate change. By using strategies that take into account key environmental aspects, such as biodiversity conservation and natural resource management, it is possible to create sustainable tourist destinations. In this context, compatible spatial planning inaugurates human resources, innovative trends, postmodern information and communication technologies and possible climate change in its plans, in order to minimize negative consequences for tourism and ensure long-term sustainable development goals. The digitalization of the tourism economy in correlation with effective spatial planning of tourist facilities within which climate goals are conceived, among other domains, provide objective circumstances for the progress of each individual country, including Serbia, Montenegro and Croatia.

1. Methodology of scientific research

The postmodern international community, as well as all individual states, realistically exist in an environment of drastic threat to the environment, i.e. the endangered future of the human population. Climate change is exacerbating the current anomalies with incalculable repercussions. Therefore, we insist on an innovative approach to creating a tourism economy on the platform of digitalization and spatial planning, adapted to the climate goals defined in the Introduction section. The current state of the planetary configuration and all its segments points to an increased responsibility of the relevant international entities and the responsible factors of the nation states. Such a shape of affairs imperatively requires taking adequate strategic solutions in the context of climate change design, competent formulation of climate goals and elimination of observed controversies, in order to ensure a prosperous future. These arguments imply an adequate approach of the relevant subjects of each separate entity, such as Serbia, Montenegro and Croatia.

The subject of our research is a scientific consideration of the digital transformation of the tourism economy and the projection of spatial planning in the context of the realization of proclaimed climate goals. The priority is to eliminate the anomalies, improve the existing situation and create conditions for successful convergence towards the European Union. This means the conception and implementation of appropriate standards in a given area, in accordance with Community law and international legislation.

The main goal of our work is scientific research of the substantive aspects of digitalization in the tourism economy and spatial planning of tourist destinations in order to eliminate pronounced retrograde trends in the field of the environment, according to the formulated climate goals of Serbia, Montenegro and Croatia. The responsible subjects of each state are imperatively required to eliminate environmental anomalies with the adoption of lucrative concepts, which has not been sufficiently implemented so far. We will try to use established academic procedures to look at the most important postulates of the observed topic, as a first-class threat to the survival of the human civilization. A particular challenge in the implementation of the set tasks is the adoption of certain legal and by-law documents, in line with the positive experiences of progressive countries and international regulations. In the paper, we especially point out the importance of digitalization in tourism activities, proper spatial positioning of tourist destinations, their adaptation to environmental changes and proclaimed climate goals, from the point of view of the observed repercussions, with possible recommendations for the elimination of manifested social controversies.

Research hypotheses are defined according to the problem, the subject, and the goals formulated, following traditional academic principles.

The basic hypothesis:

The digitalization of the tourism economy and adequate spatial planning of resources are essential segments of the social development, which needs to be competently incorporated in the implementation of defined national climate goals. The existing institutional capacities of the Republic of Serbia, Montenegro and Croatia represent a satisfactory framework for the implementation of the strategic projects of environmental protection and improvement in the conditions of pronounced climate change. Adequate conception of environmental standards and legislative documents, harmonized with the legislation of EU Community law, initiates the elimination of anomalies and ensures the implementation of the doctrine of sustainable development. These postulates create conditions for the implementation of the existential requirements of the population, as well as the criteria for successful convergence into the European Union and the group of developed countries, with the provision of a prosperous existence of the population.

Special hypotheses:

H1: Objective indicators stipulate that there are numerous contradictions in the functioning of institutions in the spheres of digitalization, i.e. the application of information and communication technologies in the tourism economy, resource and destination planning, and the treatment of environmental anomalies. Especially climate change. It is evident that all relevant subjects of society must constantly consider the influential postulates in the implementation of the competencies of institutions and the coordination of the activities of the subjects of the incorporated departments of the state in order to achieve the adopted solutions.

H2: The defined climate goals of Serbia, Montenegro and Croatia in the form of adopted legislative documents represent the starting point for the implementation of the conceived measures. The envisaged normative acts are harmonized with the provisions of European law, the United Nations Framework Convention and other international regulations. Successful implementation of the innovative approach ensures the improvement of the quality of tourism services, improvement of business competitiveness, satisfaction with the provision of services and sustainable existence of citizens.

In our work, all the essential methods of scientific knowledge will be applied, with an emphasis on analysis, synthesis, description, classification, systematization and generalization. The use of the given methods will ensure a logical and clear path that will result in the knowledge of the observed object of research and the achievement of the projected goals. From the general scientific methods, the hypothetical method of induction and deduction, the statistical and comparative methods will be applied. Consequently, we will use appropriate academic procedures, instruments and techniques of the research process.

The importance and justification of the current research is reflected in the scientific and social aspects of looking at the topic of digital transformation of the tourism industry, adequate spatial planning and the competent achievement of climate goals. Such an approach is relevant in the current conditions of the endangered human perspective, the planet Earth, as well as Serbia, Montenegro and Croatia. The scientific contribution is manifested in the systematization of existing and the acquisition of new knowledge in the fields of law, ecology, economics, informatics, tourism, politics and other social disciplines, providing a detailed insight into the engagement of the institution in the considered sphere. Proper engagement of given capacities eliminates the interweaving of competencies of certain government bodies involved in projects, problems in the coordination of state institutions and other contradictions. Our research fosters debate and social dialogue, from the position of the broadest identification and consideration of acute difficulties. The need to formulate real challenges and potential solutions in the human environment is initiated by implementing digital technologies and innovations in practice with the definition of optimal concepts in order to improve the situation and ensure the existence of the human population.

The social importance and justification is reflected through the competent positioning of the institutions of the Republic of Serbia, Montenegro and Croatia in the field of expansion of the tourism economy, creative spatial planning and the achievement of climate goals and sustainable environmental development of the observed countries and the wider community. It is necessary to achieve the trust of the

population in the observed state government bodies, to improve the level of awareness of citizens in ecology and natural resources, as well as the engagement of all national institutions. Establish cooperation between public institutions and non-governmental organizations, indigenous associations, media and other community actors is a must. A relevant interpretation of the necessity for an innovative reform approach to this topic will imply a deep understanding and creative relationship of all official factors of society in the context of eliminating negative repercussions and ensuring the progress of the state creation. The attitudes and perceptions of different social groups will contribute to the containment of existential anomalies in the analyzed areas and the wider development of society. It also implies the satisfaction of citizens with the treatment and services of public service broadcasters, in the context of the implementation of the process of convergence towards the European Union and other nationally determined lucrative international groupings.

2. Discussion and Results

Digital transformation and innovation in the tourism conglomerate are playing a first-class role in reducing depressive trends and adapting this industry to climate challenges. The energy conversion and the transition to renewable energy sources are becoming necessary in the tourism industry, especially in the infrastructure of hotels, transport and tourist destinations. Digital technologies enable smart management of energy consumption through automated systems that optimize heating, air conditioning and lighting in buildings, thereby reducing unnecessary consumption and contributing to environmental protection. A key role in effective digitalization is played by sustainable energy solutions and the reduction of negative repercussions of the tourism economy. (Nešković, p. 11, 25)

Given the intense demands to reduce greenhouse gas emissions and increase energy efficiency, digitalization enables the development of smart tourism destinations that use renewable energy sources, advanced waste management systems and environmentally friendly transport options. The use of IoT (Internet of Things) devices, sensors and artificial intelligence enables more accurate monitoring and reduction of greenhouse gas emissions. Smart hotels use systems that automatically regulate temperature and lighting depending on the presence of guests, which significantly saves energy. In addition, the application of electric vehicles and modern transport networks in the field of transport make it possible to reduce the devastating consequences of the impact of harmful substances in the human environment.

A significant aspect of digitalization in tourism is the development of digital platforms that enable more sustainable travel planning. Mobile apps and online tools are increasingly integrating features to calculate the environmental footprint of travel, offering tourists the opportunity to choose more environmentally friendly transport and accommodation options. Virtual (VR) and augmented reality (AR) are also playing an increasingly important role in reducing the negative impact of tourism – instead of traveling to distant destinations, tourists can experience cultural and natural sights through VR technology, thus reducing mass tourism and pressure on natural resources. Modern technologies not only improve the tourist experience, but also encourage environmental awareness, which is crucial for the sustainable development of tourism in the conditions of climate change. Their wide application in energy, infrastructure and planning enables more efficient use of resources, reduction of waste and adaptation of destinations to modern environmental standards.

In the conglomerate of climate goals proclaimed in the European Union's 2030 energy strategies, tourist destinations are expected to increase the use of renewable energy sources and integrate digital solutions into the management of tourism activities. The introduction of smart energy supply networks and digital waste recycling systems not only improves the environmental sustainability of tourism, but also contributes to greater competitiveness of destinations in the global market. In addition, digitalization enables the development of virtual tourism experiences, thereby reducing the need for travel and CO₂ emissions. Virtual reality and augmented reality are becoming increasingly important tools in the promotion of destinations and allow tourists to explore sites before visiting them, which can optimize tourism pressure

on ecosystems. All of these innovations are a key part of the strategy to reduce the environmental footprint of tourism in the face of climate change.

Modern technologies and digitalization play a key role in the modernization of the tourism economy, especially in the context of climate change and spatial planning. The European Union, in its quest to become climate neutral by 2050, fosters innovation and digital solutions in various sectors, including tourism, through legal and strategic frameworks. The National Energy and Climate Plans (NECPs) lay the foundations for a sustainable energy transition, with an increasing emphasis on smart energy grids and renewable energy sources, such as photovoltaic technologies, whose cost is declining and whose integration can contribute to the sustainable development of tourist destinations.

At the local level, digital solutions can improve climate and energy planning through the use of advanced analytical tools, sensor networks and predictive models to assess the impact of climate change on tourism flows. Smart cities, as part of a broader sustainable development strategy, apply IoT technologies to optimize energy efficiency, while digital platforms enable more transparent planning and public involvement in decision-making. In the context of tourism, the development of digital guides, interactive maps and applications that inform visitors about environmental initiatives and sustainable practices further contributes to environmental awareness and reducing the negative impact of tourism on the environment.

Despite technological progress, there is a noticeable delay in the implementation of modern strategies in the Balkan countries, which still rely heavily on outdated planning methods and international expertise instead of national capacities, which applies mostly to Serbia and Montenegro, and partly to Croatia. Digitalization and the implementation of innovations in the tourism industry, with competent spatial planning of tourist destinations, represent a necessary step towards sustainable development, but require systemic support and active involvement of local communities in order to ensure the effective implementation of climate adaptation strategies, with the implementation of objectively based climate goals in the tourism economy (Ibidem, p. 7). Moreover, financial sector development, including banking systems, is vital for supporting the economic growth that underpins sustainable tourism initiatives in these regions (Bylo & Memushaj, 2024). In the following text, we give an overview of the modalities of digital transformation and the application of artificial intelligence in the tourism industry.

Blockchain technology is an innovative paradigm of digitalization in the tourism sector. This system ensures much greater business compatibility, security and efficiency at all stages of planned activities. This technology works as a decentralized database, where information is stored in encrypted blocks that are connected in a chain. Its application in tourism brings many advantages, especially in terms of bookings, payments, loyalty programs and data protection.

Traditional booking systems often depend on intermediaries, such as agencies and OTAs (Online Travel Agencies), which can increase costs and the risk of fraud. Blockchain enables direct and more secure transactions between travelers and service providers, eliminating the need for third parties. Smart contracts automatically process reservations and payments without the ability to manipulate data, reducing false bookings and double charges. Travel companies are increasingly accepting cryptocurrencies as a form of payment, allowing for faster and more secure transactions without high bank fees and currency conversions. Cryptocurrencies, such as Bitcoin and Ethereum, allow travelers to pay for accommodation, airfare, and other services without the need for traditional banking systems, increasing financial flexibility and reducing costs.

Blockchain can significantly improve security and efficiency when tracking luggage and verifying passenger identities. By using this technology, airports and airlines can track luggage in real-time, reducing the possibility of loss and theft. Also, blockchain enables digital identity verification using decentralized databases, reducing the need for multiple checks on passports and identification documents at different points of travel. Travel companies offer loyalty programs in which travelers collect points for certain services. However, these programs often have complex usage conditions and limitations. Blockchain enables more transparent and efficient management of loyalty programs, where users can easily transfer or use their points with different travel partners, without the need for intermediaries (Farias Deborah, 2, 31).

One of the biggest problems in digital tourism is fake reviews that can mislead tourists. By using blockchain technology, reviews can be verified and permanently recorded, guaranteeing their authenticity. This allows for greater reliability in the selection of destinations, hotels and travel agencies. Blockchain represents the future of the digitalization of tourism, enabling safer, more efficient and more transparent operations. Although its implementation is still in its early stages, a growing number of travel companies are exploring ways to use this technology to improve the user experience and optimize their services.

The implementation of blockchain technology in tourism is not only theoretical; There are already concrete examples of its applications. For example, certain airlines and hotel chains are already accepting cryptocurrencies as a means of payment, allowing travelers to use digital currencies to make reservations. Decentralized platforms for sharing travel experiences have also been developed, where users can communicate directly and exchange services without the need for centralized intermediaries. These examples point to the growing trend of integrating blockchain into various segments of the tourism industry, which contributes to its efficiency, transparency and adaptation to modern technological trends.

Artificial Intelligence and Climate Change in Tourism

Artificial intelligence (AI) and automation are significantly transforming the tourism industry, improving the efficiency of operations and the quality of services. The integration of these technologies allows for personalization of passenger experiences, optimization of business processes and improvement of customer support.

Artificial intelligence entities analyze large amounts of data to understand travelers' preferences and behavior, allowing travel companies to provide customized recommendations and content. This personalization contributes to greater customer satisfaction and brand loyalty. For example, the KAYAK search engine integrates ChatGPT, allowing users to ask questions like, „Where can I fly from London for less than £300 in April?“ and get recommendations based on a large database. Chatbots and virtual assistants with AI capabilities enable 24/7 interaction with users, efficiently processing queries and reservations without the need for human intervention. This reduces operating costs and improves service speed. Artificial intelligence also helps analyze tourist flows, which allows for better planning and allocation of resources (Nešković, 9, 35).

This postmodern phenomenon enables faster and more accurate responses to user queries, analyzing previous interactions and providing relevant information. This increases customer satisfaction and reduces the workload on human agents. For example, AI can offer alternatives in the case of an overbooked hotel, but it can't negotiate or provide comfort like a human agent can. By analyzing user data, AI helps create targeted marketing campaigns, increasing the effectiveness of promotions. This allows tourism companies to better understand the needs of the market and adapt their offers. AI also helps analyze competition and current market trends, allowing strategies to be adjusted more quickly. By introducing artificial intelligence and automation, the travel industry can provide more efficient, personalized and high-quality experiences to travelers, which contributes to a competitive advantage in the market.

The first-rate challenge of artificial intelligence is the process of security and data protection as key aspects in the digital part of tourism. Given the extensive exchange of personal and financial information between travelers and tourism workers, this area is gaining crucial importance. Travel platforms often collect users' personal information, including first name, last name, address, email address, and payment information. This information must be protected from unauthorized access, loss or misuse. A lack of adequate security concepts can lead to serious consequences, such as identity theft or financial losses for users. In the European Union, the protection of personal data is regulated by the General Data Protection Regulation (GDPR), which sets strict guidelines for the collection, processing and storage of personal data. Tourism companies are obliged to implement appropriate technical and organizational measures to ensure the security of their users' data (Green, 3, 17).

Climate change has a significant impact on various types of tourism, especially winter tourism, where the disappearance of snow and ski resorts is becoming a serious problem. Similarly, coastal

destinations are facing coastal erosion and rising sea levels, which reduces tourist attractiveness. In addition, tourism itself contributes to climate change through greenhouse gas emissions, especially in transport and energy consumption for accommodation. Sustainable tourism, which respects climate policies such as the Paris Agreement, can help reduce the negative consequences for tourism and the environment. The Paris Agreement is important not only because of the global agreement, but also because of the challenges of its implementation. Many countries have adopted targets, but they are not ambitious enough, and industrial lobbies often slow down progress. There is also inequality, as poorer countries suffer the brunt of climate change, even though they contribute the least to emissions.

Tourism and climate change are deeply linked through the impact of tourism activities on the environment and, conversely, the impact of climate change on the tourism economy. Coastal tourism is facing rising sea levels and coastal erosion. On the other hand, tourism contributes to environmental degradation through energy consumption, water and air pollution, as well as excessive infrastructure construction. Tourism is subject to change caused by global warming, which is reflected in the shift of tourist destinations to more northern areas. European tourism is forecast to shift more and more towards Scandinavia and the Baltics, while more southern destinations, such as the Mediterranean, will suffer losses due to extreme temperatures and the disappearance of coastlines. However, there is a lack of institutional capacity and methodological tools for the effective implementation of these strategies, especially at the local level in the Western Balkans.

One of the key aspects of spatial planning in rural tourism is the harmonization of environmental, economic and social factors. Increased tourism pressure can contribute to the degradation of natural resources, while inadequate planning can cause conflicts among different interest groups. In this context, spatial planning must ensure the sustainable development of rural areas through the regulation of tourist activities, the protection of natural landscapes and the creation of policies that will enable a balance between the preservation of the identity of the village and economic development. Development planners will face the challenges of integrating tourism into rural areas in a way that will be sustainable and environmentally friendly, which will enable the long-term valorization of these areas in accordance with modern needs and the challenges of climate change.

The planned development of tourist destinations requires the construction of adequate infrastructure, including roads, airports, water supply and sewage systems, as well as facilities intended for tourists such as hotels, restaurants and agencies. This process changes the natural environment in the initial stages, but its long-term impact also depends on the way tourism is organized and how tourists behave at the destination. The environmental impacts of tourism are particularly pronounced in coastal and mountainous areas, which remain among the most visited destinations, but are also the most vulnerable to degradation. Excessive urbanization, pollution and changing natural cycles are just some of the challenges that arise due to intensive tourism development. At the same time, with proper spatial planning and sustainable strategies, tourism can contribute to the protection of natural and cultural heritage through controlled visitor management and investments in environmental conservation.

Sustainable tourism planning involves several steps: defining the system and the market, setting clear goals, collecting and analyzing data, developing a preliminary and final plan, approval by all relevant stakeholders, and its implementation through infrastructure development and environmentally friendly strategies. Historically, tourism has often exploited certain destinations, depleting their resources before the focus shifts to new exciting locations. This approach is harmful in the long run and does not contribute to the sustainability of tourist destinations. Key elements that should be part of any sustainable tourism plan include determining the carrying capacity, setting boundaries for acceptable changes, environmental impact assessments, zoning of tourism activities, and the application of ethical standards. Long-term planning is necessary to ensure a balance between tourism development and the conservation of natural resources.

Spatial planning of the tourist economy

Sustainable spatial planning plays a decisive role in shaping the successful development of tourist destinations, taking into account the challenges posed by climate change and other social contradictions. Inadequate spatial planning can lead to an increase in the environmental burden, especially in regions where energy policy has neglected the impact on the environment. The example of Serbia shows how low compliance with EU environmental standards can have a negative impact on the development of tourism, given that air quality, waste management and energy efficiency directly affect the attractiveness of destinations. Reducing greenhouse gas emissions and increasing the share of renewable energy sources, as envisaged by the EU's 2030 policy, could contribute to the creation of environmentally friendly tourist zones that would be sustainable in the long term. This includes improving infrastructure for sustainable tourism, such as energy-efficient hotels, the use of solar energy and the development of green transport networks. The implementation of these measures requires an integrated approach, in which spatial planning would be aimed at protecting natural resources, adapting to climate change and fostering a competitive tourism sector based on the principles of environmental sustainability.

Climate and energy plans represent a essential framework for the sustainable transformation of tourist destinations. The European Union has recognized the importance of a strategic approach to the fight against climate change, setting ambitious targets to reduce greenhouse gas emissions and increase energy efficiency. Lack of capacity, both at the national and local levels, makes it difficult to form effective working groups to address the integration of climate policies into spatial planning. The dependence of local self-governments on the decisions of the home country is particularly pronounced, which leads to problems in the implementation of climate change adaptation and mitigation measures. Some progress is visible, as local communities increasingly recognize the importance of adapting to climate conditions, especially in terms of energy efficiency and the use of renewable energy sources in tourism infrastructure. An affirmative example in this context is the involvement of the Municipal Administration of Ulcinj in Montenegro.

A significant challenge in the planning process is also the lack of involvement of citizens in the adoption of sustainable energy policies. Climate and energy planning and tourism development strategies must be based on the principle of participatory decision-making, as the long-term sustainability and success of these policies are directly linked to the level of information and engagement of the local population. In this context, spatial planning in tourism should be aligned with the concepts of green infrastructure, energy sustainability and climate resilience, in order to develop destinations in accordance with the principles of sustainable development. (Nešković, 4, 57)

In modern tourism, the landscape is a key factor in attracting tourists, since tourist destinations are often chosen on the basis of the natural and cultural characteristics of the area. However, the intensive development of tourism and the construction of infrastructure can undermine the basic values of the landscape, leading to the degradation of tourist resources. Therefore, it is important to approach spatial planning in a way that ensures the sustainable use of space, preserving its authenticity and ecological balance.

The 2000 European Landscape Convention emphasizes the importance of landscape protection, management and planning, defining a landscape as an area that is experienced by people and whose character is shaped by natural and human influences. In this context, the policy of geographical space should direct the development of destinations towards sustainable models, where the degree of urbanization will be in accordance with the natural and cultural values of the area. Spatial planning is of fundamental importance in the sustainable development of tourism, as it enables a balanced growth of tourism activities while preserving natural and cultural resources. Also, spatial measures include the development of guidelines for the preservation of water, air and soil quality, as well as the regulation of construction and traffic density.

One of the key challenges of spatial planning in tourism is the management of seasonal loads, in order to reduce the pressure on infrastructure and the ecosystem during periods of high tourist traffic. Decisions on tourism development must be made on the basis of comprehensive information on the environmental impact of tourism, considering alternative solutions and local capacities. In particularly sensitive areas, it is possible to impose access restrictions or place certain areas under legal protection.

It is also important to continuously monitor the state of the environment in tourist regions in order to react to negative changes in a timely manner. The role of the authorities is essential in identifying areas suitable for further tourism development, as well as those that require restoration measures. In addition, informing and educating the public about the importance of nature conservation is an important segment of sustainable tourism, because the awareness of the local population and tourists directly affects the long-term preservation of tourist destinations. The financial aspects of environmental protection are also significant, as revenues from tourism are often not enough to cover the costs of environmental measures. Therefore, various financing models are resorted to, including tourist taxes, taxes on tourist activities and entrance fees to nature reserves. Bylo and Gürbüz (2023) found that taxes have a positive impact on the financial performance of companies in the emerging markets, serving as a business incentive. Preserving the quality of tourist resources is necessary for destinations to remain attractive and promising, with a special role played by the local population in the sphere of responsible use of available natural resources.

Concepts of Serbia, Montenegro and Croatia in the Domain of Climate Goals

The Global Climate Policy Strategy implies that the agreement reached obliges all signatory states to act in accordance with normative regulations. In the concept of implementation of the given international agreements, it is possible to adopt new regulations, which determine the platform for the implementation of measures in achieving the projected goals. This applies to all areas of public life within the framework of sectoral concepts. The key issue is the manner of assuming obligations under international treaties, i.e. the official procedures from the conclusion of the contract to their implementation. The process of achieving climate goals is a complex process because it means a multi-criteria approach to measures of current issues. A systemic concept is needed in the analysis of all aspects of the relationship between international and national regulations from the position of constitutional provisions and concrete practice of individual states.

Considering the conglomerate of climate change and the relationship of regional entities to the established global policy, we note that Serbia, Montenegro and Croatia are members of the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Climate Agreement. In the face of climate change, all three countries have adopted certain laws over the past few years. It is estimated that around 140 countries around the world have adopted their own Framework Climate Legislation, with the United Kingdom, France, Denmark, Sweden, Norway and Mexico being considered the best.

The normative documents formulated as a whole must define short-term and long-term goals, deadlines for the execution of actions, financial framework and responsibility of incorporated actors in all segments of indigenous projects. At all stages, relevant factors should be engaged, with possible corrections during the implementation of the formulated goals. A number of bylaws are also envisaged, which each country shows in the list of regulations. The Republic of Serbia officially presents its regulations in the document „Climate Change“, Montenegro in the title „Legislation“, while Croatia has grouped this area into the group „Laws and regulations within the scope of the Directorate for Climate Action“. There are some noticeable differences in the subject matter of the regulation of the basic legal contents, which also reflects conceptual differences in the treatment of the phenomenon of climate change.

Serbia has given its normative concept in the field of climate goals through the „Law on Climate Change“, presented in an official state document. The following issues are regulated here: (1) A system for limiting greenhouse gas (GHG) emissions and for adapting to changed climatic conditions; (2) Monitoring and reporting on the low-carbon development strategy and its improvement; (3) Adaptation to the changed climatic conditions; (4) Adoption of a low-carbon development strategy and adaptation program to changed climate conditions, etc. In further examination, comparative similarities and differences with Montenegrin and Croatian legal provisions will be noticed.

Montenegro regulates the current issue through the „Law on Protection from the Negative Impacts of Climate Change“, which was announced in the Official Gazette of the country. This includes: (1) protection from the adverse impacts of climate change; (2) reducing greenhouse gas emissions; (3) the protection of the ozone layer and other phenomena as repercussions of retrograde reflections of climate

change. The conglomerate of a country's climate goals derives from pre-formulated elements, aligned with the preconceived measures and actions of developed countries.

It is believed that the current topic, compared to previous countries, is the most complex in Croatia. The national nomenclature is contained in the Law on Climate Change and Protection of the Ozone Layer, proclaimed in the official state material. It covers the following areas: (1) competence and responsibility for climate change mitigation, climate change adaptation and ozone layer protection; (2) documents on climate change and the ozone layer; monitoring and reporting of GHG emissions (i.e. greenhouse gases); (3) Emissions Trading System, aviation, sectors outside the GHG Emissions Trading System, and others.

It can be said that the minimum common elements incorporated by the laws of the three countries include measures related to two areas: Limiting GHG emissions of greenhouse gases and Adaptation to climate change. Looking at the essence of the documentation, it can be stated that all three countries have formulated their established national postulates in different ways in terms of obligations for the issue of GHG emission reduction. In the following, we will present the officially established autochthonous parameters in the sphere of projected goals for each individual country in question.

The Republic of Serbia has set its climate goals in this segment as follows: reduction of GHG emissions by 13.2% by 2030 compared to 2010, i.e. 33.3% compared to the base year 1990. Montenegro has planned to reduce total national GHG emissions (excluding in the land change and forestry sectors) by at least 35% by 2030, compared to the base year 1990. Croatia's GHG emission reduction targets are framed within the framework of the European Union's regulations, which stipulate the following: Reduction of net domestic greenhouse gas emissions in the entire economy by at least 55% by 2030 according to the level of the 1990 baseline. In addition to the above, reductions are also implemented in accordance with special regulations of the European Union, such as: Regulation (EU) 2018/841, Regulation (EU) 2918/842 and Directive (EU) 2018/410 (Todić, 17, 21).

It is recognizable that the parts that deal with adaptation to the phenomenon of climate change, all three countries have adopted special regulations regulating measures and procedures in the event of emergency situations. (Nešković, 12, 31) At this point, we believe that the situation of climate change and emergencies should be substantively differentiated and competently analyzed. It can be confirmed that in the field of climate change, none of the mentioned countries specifically defines the principles of the United Nations Framework Convention on Climate Change in their laws. However, here the Croatian law explicitly refers to the principles of „environmental protection“ related to the law governing the area in question, the requirements of international law and the „acquis communautaire“. These topics are directly related to each other, unless otherwise provided by law. In essence, the principles of contemporary environmental policy and law are relevantly projected in all three presented legal documents.

Conclusion

Today, the tourism economy is an essential economic area with numerous challenges of climate change and the need for sustainable spatial planning. Digitalization and the application of modern technologies provide significant opportunities for improving the tourism sector, enabling more efficient resource management, reducing the ecological footprint and adapting to global environmental standards. In doing so, spatial planning and tourism development must be aligned with the adopted climate goals for the purpose of sustainability. It is necessary to create relevant program documents that will enable the adaptation of tourist destinations to new climate challenges, while preserving natural resources.

Climate change and the energy crisis require the adaptation of infrastructure and the creation of institutional mechanisms that will allow for more efficient spatial planning. Without adequate involvement of local communities and citizens, the implementation of energy policies can remain limited to a declarative level. It is obvious that the transition to renewable energy sources and the reduction of greenhouse gas emissions are not only a global, but above all a local challenge. In this regard, the Western Balkans face serious difficulties, including a lack of science-based real-time data, weak institutional capacity and the

absence of a long-term strategy at the local level. It follows that it is the obligation of the relevant state entities to imperatively resolve the controversies and projected environmental goals.

We believe that Serbia, Montenegro and especially Croatia are treating their own national issues of climate change, through adopted laws and bylaws, with the formulation of authentic goals. The official documents as a whole are in line with the traditional legal political acts of the international community, the United Nations Framework Convention and the climate goals of the European Union. The specifics of individual creations, crisis trends in the world and permanent conflicts, indicate that constant national development is necessary with adequate implementation of universally proclaimed values in the essential spheres of climate goals and environmental protection.

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THE IMPACT OF AI IN TOURISM – RESEARCH ANALYSIS

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ABSTRACT

It is becoming increasingly apparent that the tourist industry is fast adopting artificial intelligence, as it recognizes its potential to revolutionize conventional procedures and improve overall efficiency. From customer service to operational management, numerous aspects of the industry are currently undergoing the implementation of solutions that are powered by artificial intelligence. The application of artificial intelligence (AI) in tourism is bringing about a change in the way we experience travel by making it more personalized, efficient, and pleasurable. The application of artificial intelligence technologies is currently being utilized in the tourist industry to improve the quality of client experiences, streamline operations, and bring innovative services that were once considered to be the stuff of science fiction. Multiple studies have shown that artificial intelligence-driven predictive analytics improve destination marketing and the experiences that tourists have by allowing for more accurate forecasting, more personalized recommendations, and a better knowledge of how tourists feel about their experiences.

Keywords: *artificial intelligence, tourism, management, customer service, competitiveness.*

INTRODUCTION

Predictive analytics powered by artificial intelligence not only enhance destination marketing tactics but also tailor tourist experiences across a variety of tourism situations. The combination of artificial intelligence and big data has been shown to improve demand forecasting and tourist flow management, according to Bairachna and Krupitsa (2024). On the other hand, Farahat et al. (2022) highlight that forecasting tools and immersive technologies like virtual reality and augmented reality raise the efficacy of marketing and the competitiveness of destinations. It has been demonstrated by Christodoulou et al. (2020) that predictive analytics and sentiment models are able to effectively capture the aspects that contribute to tourist satisfaction.

In addition, a number of research provide evidence that real-time customization and enhanced decision-making are possible. Arora et al. (2023) describe AI-powered trip planning as boosting cultural immersion and overall tourist experience. Chen and Wei (2024) argue that intelligent recommendations greatly affect travel decisions. Both of these perspectives are supported by the findings of Arora et al. Furthermore, the utilization of clustering approaches (Cunha et al., 2024) and automated marketing procedures (Bulchand- Gidumal et al., 2023; Florido-Benítez and del

Alcázar Martínez, 2024) has been demonstrated to result in enhancements in strategic targeting and operational efficiency. The complexity of data and system integration, as well as the expensive initial investments, are among the challenges that have been reported. In general, the articles suggest that artificial intelligence-driven predictive analytics provide significant support for improved destination marketing and individualized tourism experiences.

OVERALL ANALYSIS

Numerous studies in our review indicated that AI-driven predictive analytics can improve destination marketing strategies:

Bairachna and Krupitsa (2024) discovered that artificial intelligence and big data analytics can enhance the management of visitor flow and demand forecasts.

Farahat et al. (2022) indicated that AI-driven forecasting systems enhance marketing efficacy and destination competitiveness.

Christodoulou et al. (2020) illustrated the efficacy of AI in forecasting tourist sentiment and pinpointing critical aspects that affect satisfaction.

The role of AI in sophisticated customer behavior modeling was a prevalent topic.

Cunha et al. (2024) employed k-means clustering to elucidate unique customer behavior patterns.

Chen and Wei (2024) documented a substantial impact of AI-generated informativeness and recommendations on travel decision-making.

Numerous studies emphasized the significance of AI in automating and enhancing marketing processes:

Bulchand-Gidumal et al. (2023) examined the influence of AI on: – Internal processes – Stakeholder interactions – Organizational networks in hotel marketing

Florido-Benítez and del Alcázar Martínez (2024) underscored the significance of AI in: – Enhancing economic resource efficiency – Minimizing marketing expenditures in intelligent tourism locations

TOURIST EXPERIENCE ANALYSIS

Research indicates AI's ability to customize tourist experiences in real-time.

Arora et al. (2023) illustrated how AI-driven tailored travel planning improved tourist experiences and cultural immersion in Uzbekistan.

Bairachna and Krupitsa (2024) emphasized the significance of AI and Big Data in customizing offerings for tourists during their travel.

Numerous studies examined the role of AI in learning and adjusting to tourist preferences.

Calderón-Fajardo et al. (2024) employed artificial intelligence methodologies to enhance the assessment and analysis of Destination Brand Experience.

Chen and Wei (2024) discovered that AI-generated recommendations substantially impact travel

decision-making.

The enhancement of tourist experiences using AI was a prevalent theme.

Lalicic et al. (2021) shown that AI-driven analytics of Airbnb evaluations might yield recommendations for the reconfiguration of destination experiences.

Farahat et al. (2022) examined the application of virtual reality and augmented reality in augmenting visitor experiences.

The effective incorporation of AI technologies into current marketing and tourism frameworks has become a vital element.

Bulchand-Gidumal et al. (2023) emphasized the manner in which AI transforms internal processes and influences organizational networks.

Florido-Benítez and del Alcázar Martínez (2024) examined the function of AI in the management, monitoring, and analysis of sales data.

Although the research predominantly indicated favorable results, certain problems in the implementation of AI for destination marketing and customisation were identified:

Bairachna and Krupitsa (2024) stated:

– Requirement for substantial investments in AI technology – Difficulty in combining heterogeneous data sources

The research utilized many criteria to evaluate AI efficacy in destination marketing and customisation.

Farahat et al. (2022): The efficacy of marketing and the competitiveness of destinations

- Chen and Wei (2024): Impact on travel decision-making

- Christodoulou et al. (2020): Accuracy of sentiment prediction

- Identified Advantages:

- Advantages of the Marketing Strategy included:

- Augmented demand forecasting – Refined targeting – Cost optimization • Advantages for Customer Experience included:

- Tailored suggestions

- Augmented cultural immersion

- Immediate personalization

- Benefits of Operational Efficiency included:

- Optimized internal procedures – Automated client support

- Advantages of Destination Competitiveness included:

- Enhanced brand experience evaluation

- Improved destination perception

Execution Obstacles:

- Technical obstacles comprised:

- Integration of data – Complexities of system integration

- Keeping abreast of technical breakthroughs
- Human-centric challenges comprised:
 - Employee training – Harmonizing automation with personal interaction
- Additional challenges encompassed:
 - Substantial initial capital outlay
 - Privacy concerns (although explicit discussions were not identified in all research)

Determinants of Success:

- Factors relating to technology included:
 - Comprehensive AI integration – Incorporation of VR/AR technologies
 - Effective assimilation with current systems
- Factors pertaining to data included:
 - Continuous data analysis – Efficient preference learning systems
- Included strategic factors:
 - Utilizing distinctive destination characteristics
 - Ongoing advancement in artificial intelligence applications
 - Explicit performance indicators

CONCLUSION

The application of artificial intelligence in the tourism industry is dramatically improving the quality of the consumer experience by making interactions more individualized, productive, and interesting. Artificial intelligence is able to predict and fulfill the requirements of travelers in ways that were before imagined. This is made possible by the utilization of sophisticated algorithms and machine learning. Through the use of this revolutionary technology, passengers are redefining the ways in which they plan, book, and enjoy their rides. The rising use of artificial intelligence (AI) to create hyper-personalized travel experiences is a noteworthy trend. AI will continue to evaluate large amounts of data in order to provide recommendations that are even more specific to the individual, thereby generating individualized travel itineraries that are tailored to the preferences of the traveler in real time. A number of potential advances include advancements in artificial intelligence-driven predictive analytics, which will enable businesses to more accurately anticipate the requirements and preferences of travelling customers. This could result in more seamless travel experiences, including the ability to anticipate and resolve difficulties before they arise, as well as the provision of personalized services throughout the trip route.

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KOSOVO COUNTRY DIAGNOSTIC: PRIVATE INVESTMENT CHALLENGES AND OPPORTUNITIES

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Abstract

The internationalization of businesses, particularly for small and medium-sized enterprises (SMEs), presents both significant challenges and promising opportunities. In the context of Kosovo, where SMEs form a substantial portion of the business landscape, understanding the dynamics of international expansion is crucial for sustainable economic growth. This study comprehensively examines the obstacles faced by SMEs in Kosovo as they navigate the complex process of internationalization, while also shedding light on the factors that drive their success in foreign markets.

The journey towards internationalization begins with recognizing the limitations of operating solely within the domestic market. While the expansion beyond national borders holds the promise of increased profitability and competitive advantage, SMEs encounter numerous hurdles along the way. These obstacles include financial constraints, cultural differences, regulatory complexities, and limited access to information and resources. Overcoming these challenges requires meticulous planning, strategic decision-making, and a proactive approach to identifying and addressing barriers.

Market selection emerges as a critical step in the internationalization process, with business managers playing a pivotal role in identifying the most favorable markets for expansion. However, the lack of a one-size-fits-all model underscores the need for adaptability and flexibility in decision-making. Timely entry into foreign markets is essential to capitalize on opportunities while minimizing risks.

Introduction

Kosovo, a small economy in the Western Balkans, has faced significant challenges due to complex political realities and uncertainties. These factors have hindered its economic development, making Kosovo one of the poorest economies in the region, with a GDP per capita of approximately €4,250 as of 2021. Weaknesses common to the Western Balkans, such as weak rule of law, low public administration capacity, complex inter-ethnic relations, and a fragile political dialogue, are further pronounced in Kosovo. Despite being landlocked, Kosovo benefits from its strategic location at the crossroads of the Western Balkans and Europe, as well as its natural and mineral resources.

The economy of Kosovo is primarily composed of family-owned micro companies, mainly in the services sector. Although mining historically played a significant role, underinvestment over the past three decades has reduced its contribution to GDP. The manufacturing base is also narrow. High unemployment, a youthful population, and relatively high poverty rates have led a substantial portion of the population to live and work abroad. Remittance inflows and services revenue help alleviate poverty and finance a sizable trade deficit. Despite facing a recession induced by the Covid-19 pandemic in 2020, the economy is rebounding, supported by external factors.

Key issues constraining the private sector in Kosovo include:

1. Widespread informality: The large informal economy reduces budget revenues, impedes investment and business development, and creates unfair competition. Efforts to formalize businesses have shown some positive signs, but systemic solutions and improvements in public governance are needed.
2. Low external competitiveness: Kosovo has limited integration into global value chains, with exports mostly comprising low-value-added products. Foreign direct investment has been limited, primarily going into non-tradeable sectors like real estate.
3. Poorly functioning labor market: Low participation and high unemployment rates, particularly among women and youth, contribute to high emigration and remittance inflows. Weak labor market outcomes exacerbate structural rigidities.
4. Public infrastructure gaps and the green transition: Kosovo faces significant gaps in public infrastructure, hindering integration into European supply chains. Urgent replacement of outdated and polluting energy generation infrastructure is needed to accelerate the green transition.

5. Weak governance of state-owned enterprises (SOEs): Financial performance of SOEs is poor, with inadequate reporting and monitoring contributing to fiscal risks. SOE governance and resolution processes need improvement.

Addressing these challenges is crucial for Kosovo's sustainable economic development and integration into the global economy.

1. Economic background and outlook

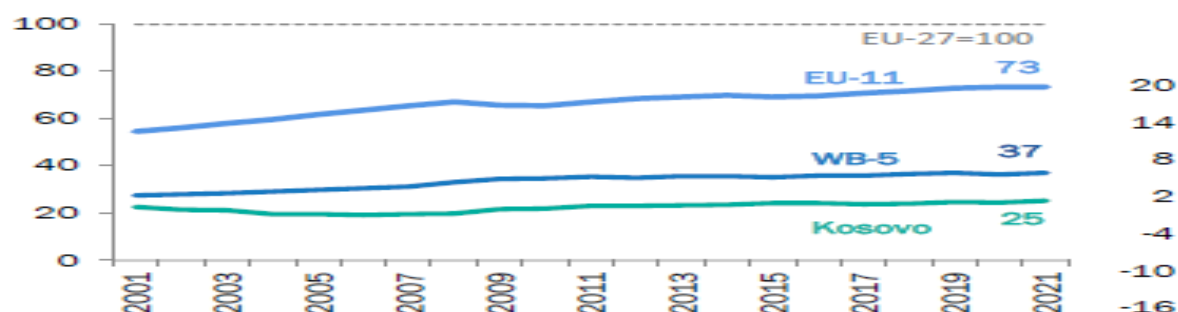
Kosovo possesses abundant natural resources, including the second-largest lignite reserves in Europe and the fifth-largest globally, estimated at 12.5 billion tonnes (Ministry of Economic Development, 2017a). Additionally, it boasts a variety of minerals such as lead, zinc, silver, nickel, cobalt, copper, chrome, magnesium, iron, and bauxite (Ministry of Economic Development, 2020). However, the decline of the mining sector in the 1990s, coupled with weak governance and Kosovo's unresolved status, has hindered the sector from significantly contributing to the country's economic development.

Despite its resource wealth, Kosovo remains one of Europe's poorest and least developed countries. Historically the most disadvantaged region of the former Yugoslavia, Kosovo faced further economic setbacks during the 1990s due to Yugoslavia's disintegration and ensuing conflicts. While the economy has been gradually converging with EU income levels over the past two decades, progress has been slow. Real GDP per capita in Kosovo is less than 30% of the EU-28 average and less than 40% of that of the new EU member states (EU-11), trailing behind other Western Balkans countries as well. Although poverty rates have declined in recent years, with 18% of the population living below the poverty line (€1.85 per day) in 2017, (World Bank and Kosovo Agency of Statistics, 2019) and 15% of employees at risk of poverty, mainly self-employed and less educated individuals (Haxhikadrija et al., 2019) both rates were lower compared to 2012 by 6-7 percentage points.

The economy of Kosovo is primarily dominated by services, accounting for close to half of GDP as of 2021, followed by industry and construction (19% and 8% respectively). The structure of GDP has remained largely unchanged from 2009 to 2021, except for agriculture, whose share of GDP halved over the decade to 7% in 2021. Agriculture in Kosovo is characterized by small plots of land, hindering economies of scale, and high levels of informality. The sector employed 3.4% of the workforce in Q1 2021, similar to the EU-28 level (Kosovo Agency of

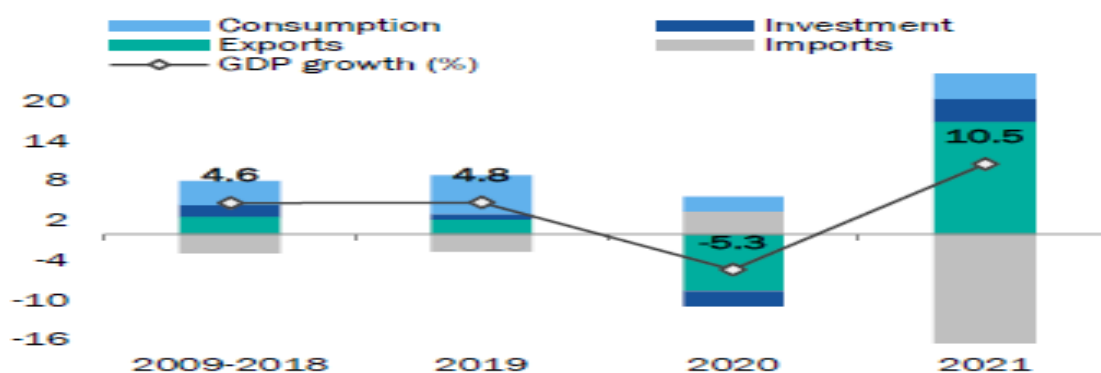
Statistics, 2022). Services engage nearly 70% of the workforce, while industry employs 17.4%. The construction sector, a significant employer, provided jobs for around 9.4% of the labor force in Q1 2021, although this figure decreased from 13% in 2017, still higher than in other Western Balkans countries or the EU-28.

Figure 1: Living standards lag those of the EU *GDP per capita, US\$ purchasing power parity (PPP)*



Source: IMF (2022b)

Figure 2. Contribution to GDP growth (pp), 2009-18 simple average



Source: Eurostat, Kosovo Agency of Statistics

The manufacturing sector in Kosovo is primarily focused on low-value-added industries, contributing 16% to gross value added (GVA) in 2021, which is similar to the Western Balkans-5 average but considerably smaller than that of the EU-11. The sector lacks diversification, with notable industries including processed food and beverages and metals, while furniture production has emerged as a growing driver of manufacturing output and exports. However, wages in the

manufacturing sector are among the lowest in the economy, with the average monthly gross wage in 2020 standing at €335 (World Development Indicators), ranking higher only than wages in accommodation and food services, agriculture, forestry, fishing, and other services.

Prior to the Covid-19 pandemic, economic growth in Kosovo was primarily consumption-driven, mirroring trends in other Western Balkans countries. GDP growth slowed post-financial crisis, averaging 3.6% annually from 2009 to 2021, down from close to 5% in 2001-08. Consumption, particularly, contributed around 4 percentage points annually to growth, while investment played a smaller role, adding around 1.5 percentage points. Net exports negatively impacted growth due to rising imports. On the production side, services, particularly trade and tourism-related services, drove growth by around 2 percentage points.

However, the robust growth trajectory was disrupted by the Covid-19 pandemic, resulting in a recession in 2020. GDP contracted by 5.3% primarily due to a sharp decline in service exports resulting from international travel restrictions and domestic containment measures, as well as reduced investment, especially in the construction sector. In response, the government implemented measures to support the population and economy, including regulatory forbearance to maintain credit flows. Total mitigation and recovery measures amounted to 4.3% of GDP in 2020 and 5.6% in 2021 (IMF, 2022a).

In 2021, Kosovo experienced a robust economic rebound, with GDP growing by an impressive 10.5%, according to initial estimates from the Kosovan Agency of Statistics. This resurgence was largely driven by strong support from the external sector, particularly from the diaspora. Remittances, tourism, compensation for seasonal migrants, and real estate investment provided significant boosts to economic activity. Household consumption benefited from a surge in remittances, which grew by 17% year-on-year in 2021, alongside credit growth (IMF, 2022a). Exports of services nearly doubled in 2021 compared to 2020, driven by visits from the diaspora. Although still relatively small at 9.6% of GDP, goods exports showed remarkable growth rates of 24% in 2020 and 58% in 2021, indicating initial signs of diversification both in products and markets.

Despite the strong rebound in 2021, it is expected that the growth rate will moderate in 2022 and align closer to its long-term potential rate. The first few months of 2022 continued to witness strong credit growth and remittances, albeit against the backdrop of significant inflationary pressures heightened by the economic fallout of the Ukraine conflict. Geopolitical uncertainties,

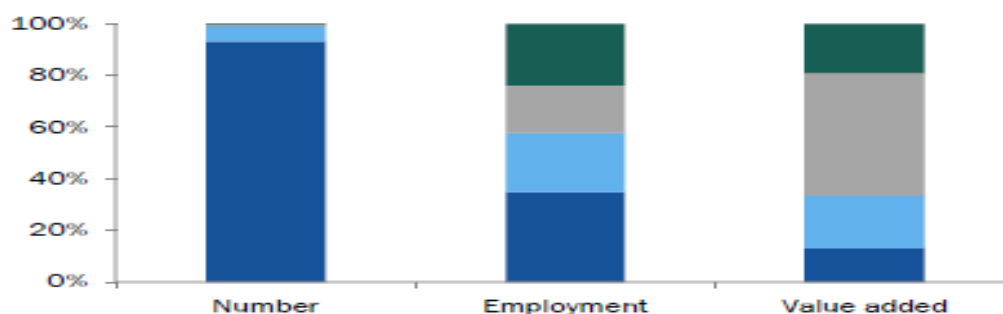
rising commodity prices, persistent weaknesses in public investment management, and potential vulnerabilities in the external sector pose notable risks to the outlook.

Kosovo's progress in climate action is hindered by its unresolved status. As Kosovo is not a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), there is no legal basis for drafting Nationally Determined Contributions or setting targets for 2030, and regular reporting on climate efforts is lacking. However, Kosovo has developed a greenhouse gas (GHG) inventory and made efforts to align legislation and policy with the EU climate acquis, despite these limitations.

2. Private-sector and business environment

The economy of Kosovo is predominantly composed of small and medium-sized enterprises (SMEs), with micro-enterprises being the most common. SMEs make up 99.9% of businesses in Kosovo, employing 76% of the total business-sector workforce and contributing 81% of the total value added (OECD, 2019a). However, despite their large numbers, micro-enterprises, which constitute 93% of SMEs and typically have fewer than 10 employees, contribute only 13% to value creation. In contrast, medium-sized enterprises, although they represent less than 1% of the business population and less than one-fifth of total business-sector employment, make the most significant contribution to value creation, accounting for 48%. Interestingly, large companies in Kosovo contribute a relatively smaller share of total value added (19%) compared to their counterparts in other Western Balkans countries, despite similar levels of employment (around 25%) (EBRD, 2019). This discrepancy suggests that while large companies employ a significant portion of the workforce, they do not contribute as much to value creation as in other countries in the region.

Figure 3. Business demography indicators



The trade sector holds significant importance in Kosovo's business landscape, with almost half of all active enterprises operating within it. In 2020, out of 40,056 active enterprises, 42% were engaged in trade, while 13% were involved in manufacturing (Kosovo Agency of Statistics, 2021a). However, despite its presence, the manufacturing sector in Kosovo remains weakly integrated into global value chains (European Commission, 2019c). These two sectors also account for the largest shares of employment, with trade employing 37% and manufacturing employing 18%.

Challenges persist in Kosovo's private sector due to various governance issues, including widespread informality, corruption, inefficient judiciary, weak rule of law, and inadequate institutional strength. According to the BEEPS VI survey, competition from the informal sector and electricity supply were cited as major constraints by 25% and 15% of respondents, respectively (World Bank and EIB, 2018). While business registration is relatively simple and fast, businesses grapple with numerous licenses, permits, administrative hurdles, and costly inspections. Efforts to reform the inspection regime are underway, with a plan to streamline inspections from 36 to 15 under the new Law on Inspections approved by the Kosovan assembly in December 2021.

Access to finance remains a critical issue for SMEs in Kosovo. According to the BEEPS VI survey, accessing finance is perceived as the most challenging in Kosovo among all Western Balkans countries, with around half of Kosovan firms citing it as a major constraint (World Bank and EIB, 2018). The ECB's SAFE survey also highlighted access to finance as a significant issue, particularly in Kosovo compared to other regions (World Bank and EIB, 2018). This difficulty may stem from high loan costs and stringent collateral requirements, especially exacerbated by the pandemic. Additionally, access to finance varies by company size, with small firms facing more

challenges compared to medium and large enterprises. As a result, Kosovan firms tend to rely more on bank overdrafts for credit, indicating the importance of addressing these finance-related hurdles to foster business growth and development.

Private-sector development in Kosovo faces additional constraints due to the country's relatively low entrepreneurial capacity and financial literacy. Kosovo's entrepreneurial culture is still in its early stages of development, leading to weaker entrepreneurial intentions and early-stage entrepreneurial activity compared to regional and global averages. SMEs in Kosovo tend to be risk-averse and lack proactiveness, innovation, and customer orientation (Sadiku-Dush, Dana and Ramadani, 2019).

Moreover, levels of financial literacy and inclusion are low in Kosovo. Despite progress in the legal framework, the use of electronic payments, cards, and mobile payments remains limited, hindering financial inclusion (IMF, 2020).

3. Inclusion of companies in Kosovo to international business trends

Understanding the marketing specifics of SME exporters in Kosovo requires delving into empirical data gathered through surveys conducted with exporting companies. While the general economic situation and limited volume of exports provide some insight, a deeper understanding can be gained by analyzing survey data from exporting firms.

One notable characteristic is that most companies in Kosovo are small-sized in terms of both employee count and available resources. This presents a dual challenge for developing and implementing effective export marketing strategies. These companies typically focus on regional markets, particularly emerging economies with similar challenges, such as a significant informal sector, high levels of corruption, widespread poverty, and limited purchasing power, as well as fragile political and institutional stability.

While many Kosovo companies and entrepreneurs have gained exposure to marketing practices abroad, it's essential not to simply replicate foreign behaviors but rather adapt strategies to the specific conditions of Kosovo. Strategic decisions should be informed by local realities, with operational decisions made on a case-by-case basis within the overarching strategic framework.

Kosovo, being a small and underdeveloped country, particularly faces a shortage of high-caliber marketing experts, as many have either migrated for better opportunities or are engaged in

governmental, public, or international organizations within Kosovo. Consequently, expertise within the private sector is lacking, leading to low levels of creativity and innovation. Marketing efforts often focus on immediate survival needs, with strategic planning taking a backseat. Additionally, the limited physical space in Kosovo poses further challenges for businesses to operate and expand.

Overall, the unique circumstances of Kosovo necessitate a nuanced approach to export marketing, incorporating local realities and strategic adaptation to overcome inherent challenges.

The case studies provided offer insights into the profiles of various companies in Kosovo, including Devolli, Stone Castle, Elkos, Pestova, Water Rugova, BirraPeja, NZB Union, and Janina. Each of these companies has distinct characteristics and operations within the Kosovo market:

Devolli

Devolli, established in 1990, is a significant player in the food industry in Kosovo. With approximately 900 employees, it engages in both production and trade, focusing on a diverse range of products. Among its notable offerings are the popular juices "Tango," the "Vita" milk line, and Turkish coffee. The company boasts impressive production capabilities, including an installed capacity of 50,000 liters of juice per day and 12,000 liters of UHT milk per hour. Partnering with Tetrapak, a renowned Swedish company, has enabled Devolli to integrate advanced technology and adhere to international standards like those set by the FDA.

Devolli has strategically invested in expanding its sales network, establishing one of the largest distribution networks in Kosovo and the surrounding region. Managed as a partnership with five founders, two of whom are owners, the company operates under joint management by the owners and a manager, emphasizing leadership through customer relations. While trade constitutes its primary activity and production serves as a secondary focus, Devolli also offers services.

Despite achieving relatively positive business outcomes, Devolli faces several challenges. Taxation and customs procedures, inadequate infrastructure (such as roads, electricity, and telecommunications), and competition from the informal sector, smuggling, and tax evasion hinder its operations. While Devolli acknowledges the importance of export marketing strategy, detailed planning remains elusive due to economic uncertainties in Kosovo and the region.

Devolli's resilience is evident in its ability to maintain sales amidst rising food prices. As imported goods become costlier, consumers increasingly turn to Devolli's products, a trend that offsets the impact of price hikes. However, the company expresses concerns about the potential consequences of declining purchasing power on its future plans for product diversification and quality enhancement, which require substantial investments. Despite these challenges, Devolli's commitment to innovation and quality remains steadfast as it navigates the complexities of the regional market.

Stone Castle

Stone Castle, formerly known as NBI "Orahovac," has a rich history in the international wine market, having exported 32 million liters of wine to Germany during the 1980s. The company operated one of the largest wineries in the Balkans, with a wine cellar capable of processing approximately 70,000 barrels annually and storing up to 500,000 hectoliters. In 2006, the Kosovo Trust Agency finalized the sale of NBI "Orahovac" to new owners, transforming it into New Co StoneCastle Vineyards and Winery L.L.C.

Specializing in red and white wines, Stone Castle offers a variety of high-quality products, including Cabernet Sauvignon, Merlot, Pinot Noir, Amphora, Vranac, Rhine Riesling, Chardonnay, Elena, and White. The company employs wholesale distribution through representatives like El-Kos and ETC and utilizes various authorized distributors for regional distribution, including Rack, Ivena Commerce, and Karanta. Despite limited marketing resources, Stone Castle aims to expand into international markets, particularly in Switzerland and Scandinavian countries, while also maintaining its presence in Albania, Bulgaria, Croatia, Serbia, Macedonia, China, and the USA.

With a focus on quality and affordability, Stone Castle emphasizes product design and packaging to enhance its market appeal. The company is actively pursuing opportunities to improve wine quality and redesign packaging to attract European and global consumers. While facing competition in the local market, Stone Castle prioritizes export-oriented strategies to capitalize on its product strengths and expand its market reach.

LLC "Pestova

LLC "Pestova" - Pestovë, established in 1991, is a private company primarily funded by its founder. Specializing in seed potatoes and crisps production under the brand "Vipa Chips," Pestova operates with 21 employees across four departments: input trading, potato production and processing, marketing and sales, and finance/accounting. The company serves as the exclusive representative of Dutch company AGRICO for seed potatoes in Kosovo and distributes agricultural mechanization from Polish company CLICH and chemicals and fertilizers from Belgian company Hermo.

Pestova has optimized its distribution strategy by partnering with authorized distributors, resulting in a 70% increase in chip sales and a 30% reduction in costs. The company exports its products to Albania, Macedonia, and Montenegro, with authorized representatives handling distribution in these markets. In Kosovo, physical distribution is managed through company trucks. With a relatively weaker competitive landscape in Kosovo, Pestova aims to capture a significant share of the Albanian market, further leveraging its distribution network and product portfolio.

Natural water "Rugova"

This company, initially operating as "Rugova Water," was established on November 28, 2006, with just 7 employees, a number that gradually increased over time. Its primary activity revolves around water bottling, with a bottling plant located in Drelaj Rugova near a natural spring, covering an area of 50 acres and featuring a 1000m² facility. The natural spring, situated at an altitude of approximately 1000m, serves as the source of the water.

The main product lineup includes various sizes of bottled water, such as 0.25 L, 0.5 L, 0.75 L, 1.5 L, 5 + 1 L, and 12x0.5 L under the brand "Rugova Water." Distribution is primarily direct, with vans transporting products to final consumers, including shops, supermarkets, and restaurants.

However, the distribution process entails high costs due to the need to reach customers wherever possible, thereby impacting sales volume. The company faces stiff competition in Kosovo, with numerous local companies such as Bonita, Dea, Kika, Don Aqua, Water Well, and Water Ice, along with importers, vying for market share.

BirraPeja

Established in 1971 as a socialist enterprise, this company operated until 2006 when it underwent privatization. Situated in Peja, Kosovo, the factory spans a total area of 24 hectares,

including its infrastructure. Its primary product is beer, which is widely available in the Kosovo market wherever alcoholic beverages are sold. Within the domestic market, the company has engaged several distributors, such as "Agro Trade" for Pristina, "NT Shkodra" for Ferizaj, "Meteor" for Prizren, and others across various cities.

This leading Kosovo company has successfully entered foreign markets, establishing authorized distributors in the US, UK, Switzerland, Germany, Netherlands, France, Belgium, Italy, Denmark, Albania, Bosnia and Herzegovina, and Montenegro. The beer product comes in various forms of packaging and volumes, including glass bottles in returnable crates, packs with refundable bottles, premium bottled beer packages, and alcohol-free beer packages.

Due to its monopolistic position in the market, the company sponsors numerous activities for promotion and has received recognition, being named the best company of the year in 2008 and 2009 by the Ministry of Trade and Industry of Kosovo.

Unlike many other surveyed companies, Peja Brewery has implemented export marketing strategies. It collaborates with its Slovenian partner, "Lasko Pivo," which also co-owns the brewery, engaging in *lohn* works where the Slovenian partner specializes in producing certain beer components. Peja Brewery assumes the leading role in marketing as the exporter, leveraging its strong market image. The Slovenian partner contributes as an assistant to export activities and shares in the benefits on complementary bases. Given the various stages involved in beer production, Peja Brewery is involved in *lohn* works to ensure the quality of its products from production to the final product.

Elkos

Founded in 1990 and re-established in 2000, this company is involved in the production and trade of various commodities within the food industry, selling them through both wholesale and retail channels. It operates as a partnership with five founders, two of whom are the owners of the company. The company employs 330 regular workers, with 300 engaged in sales points and factory operations, while 30 work in administration, consisting of 26 males and 4 females. The average salary for workers in trade and production is 250 euros, while those in administration earn around 350 euros. In 2011, exports accounted for close to 20% of the company's turnover.

There are plans for future expansion into other locations within Kosovo and the introduction of new production lines. The company aims to enhance the quality of its products and

services and intends to resume production of certain previously sold items, although profitability concerns halted their sale.

While the company serves as a distributor for BirraPeja in Fushe Kosovo, it lacks any form of export marketing strategy. Its exports are facilitated through authorized distributors and representatives in Albania and Macedonia. As the largest importer of foodstuffs in Kosovo, it also serves as the primary supplier to supermarkets and shops. Raw materials for production and export, such as flour from Serbia and meat products from Brazil, are primarily sourced through imports facilitated by exporters to Kosovo.

Janina

The company specializes in the production of plastic tubes used for the circulation of warm and cold water, as well as central heating systems. Additionally, it engages in the sale of supplementary equipment required for water installation. Operating in this sector since 2003, it has emerged as one of Kosovo's most successful companies in plastic pipe manufacturing. The company is structured into distinct production and sales sectors, employing a workforce of 15 individuals and commanding an impressive 80% market share for plastic pipes in Kosovo.

Having achieved significant success domestically, the company has expanded its reach to penetrate markets in Albania, Macedonia, Serbia, Montenegro, Greece, Switzerland, and Slovakia. Its products boast certification from the SKZ-testing laboratory in Germany, a testament to their international quality standards.

Looking towards the future, the company plans substantial investments exceeding €2,000,000. By February 2010, it had already invested over €1 million, with allocations for:

- Establishing a new plant facility
- Procuring advanced machinery for plastic pipe production, boasting fivefold greater capacity than existing equipment
- Launching a new line of laminate products, combining plywood with plastics
- Collaborating with a Swiss partner to introduce electric brushes into production

Janina's ventures into laminate products and electric brushes represent pioneering efforts in the Balkan market, positioning the company as an innovator in its field.

NZB Union

NZB "Union" engages in a diverse array of construction and craftsmanship activities, spanning stone work, residential and commercial construction, roofing, handicrafts, ceramics, flooring, water systems, central heating, hydro-thermal insulation, metalworking, and the production of doors, windows, and cupboards utilizing materials from the German company "Roplasto." Situated in the Pristina Industrial Zone, the company established contact with "Roplasto" through participation in international trade fairs, leading to a successful collaboration agreement in 2008.

The partnership with "Roplasto" has enabled NZB "Union" to specialize in the production of plastic doors and windows through lohnexport marketing, facilitated by the arrival of materials via commercial agents and trucks. This strategic shift has positioned the company as a leader in its sector, surpassing competitors like Rehau, Aluplast, and Salamander.

In terms of promotional strategies, NZB "Union" prioritizes advertising on television and radio, direct marketing through leaflets, and participation in construction trade fairs across Kosovo. While primarily focused on the regional markets of Albania, Macedonia, and Montenegro, the company's export efforts showcase its commitment to expanding its presence beyond national borders.

It appears that while some forms of export marketing exist among the companies, they primarily represent an evolution of traditional export practices rather than a fully elaborated export marketing strategy. Elements such as production capacities, transportation, pricing, distribution points, and promotion are aspects of the marketing mix but do not constitute a comprehensive export marketing strategy.

The products produced by these companies are of high quality and are present in both domestic and international markets at competitive prices. However, in the local market, there is a prevalence of imported products, such as bottled water from Serbia, Slovenia, and Croatia, as well as honey from Slovenia, which are sold at higher prices than their domestic counterparts. This phenomenon suggests that these foreign products occupy more shelf space in Kosovo supermarkets compared to similar domestic products.

The disparity in pricing and shelf space allocation can be attributed to the more robust export marketing strategies employed by foreign companies compared to their Kosovar

counterparts. It seems that Kosovar companies may be lacking in their efforts to develop and implement comprehensive export marketing strategies.

It is evident that individual companies may struggle to address these challenges independently. Collaboration and support from relevant stakeholders, such as industry associations, government agencies, and international partners, may be necessary to enhance the export marketing capabilities of Kosovar companies and enable them to compete more effectively in both domestic and international markets. Below is a summary table outlining the main forms and arrangements used by the surveyed companies:

Table 1. Forms and arrangements of export marketing

Company	Export	Main Export Destination	Distribution	Export Marketing
Devolli	✓	Albania, Macedonia	By the company and its authorized distributors	No
Stone Castle	✓	Albania, Bulgaria, Croatia, Serbia, Macedonia	Authorized distributors	No
Pestova	✓	Albania, Macedonia, Montenegro	Specialized distributors	No
Uji Rugova	✓	Albania	Importers	No
Birra Peja	✓	USA, UK, Switzerland, Germany, Holland, France, Belgium, Italy, Denmark, Albania, Bosnia and Herzegovina, Montenegro	Authorized distributors and representatives abroad	Cooperative export, complementary export marketing, piggyback, and Lohn works
Elkos	✓	Albania, Macedonia	The company itself	No
Janina	✓	Albania, Macedonia, Serbia, Montenegro, Greece, Switzerland, Slovakia	Authorized distributors	No
NZB Bashkimi	✓	Albania, Macedonia, Montenegro	Specialized distributors	Lohn works
SL	✗	None	None	No

Source: Rustemi, V.(2018) Implementation of Export Marketing in Transition Economies: Case Studies from Kosovo ACTA UNIVERSITATIS DANUBIUS Vol 14, no 1

Indeed, the main export destinations for the surveyed companies are neighboring countries like Albania, Serbia, and Macedonia, which is consistent with Kosovo's geographical proximity and trade relations. The distribution networks typically involve the company itself and/or authorized distributors, with only one exception where importers come from Albania to import "Uji Rugova."

Furthermore, the analysis reveals that only two out of nine companies apply forms of export marketing. This observation sheds light on a potential explanation for Kosovo's small and

underdeveloped export sector. Export marketing strategies play a crucial role in expanding market reach, optimizing distribution channels, and promoting products effectively in international markets. Therefore, the limited adoption of export marketing practices by Kosovo companies could contribute to the challenges faced in growing export volumes and diversifying export destinations.

The underdevelopment of export marketing in Kosovo, both at the national and firm level, can be attributed to historical factors such as the legacy of a socialist economy, loss of former markets, and challenges in penetrating foreign markets in today's globalized economy. While the presence of international organizations and missions has brought new approaches, Kosovo's export perspective remains limited primarily to neighboring countries, contributing to an imbalance in foreign trade and a persistent trade deficit.

To address these challenges, concrete measures at the national level should prioritize the attraction of Foreign Direct Investment (FDI), particularly from developed countries, which can bring diversified expertise and experience in exporting across various markets. Additionally, the Kosovo government should develop a comprehensive export strategy focusing on sectors with export potential, strategies for market penetration, and support for the development of export marketing arrangements.

At the micro or company level, boosting exports requires detailed export marketing strategies tailored to different types of exports. Even if products or services are of good quality and competitively priced, effective marketing is essential for entering foreign markets. For example, while certain businesses may struggle to compete domestically, they may find success in foreign markets where demand for their products or services is higher. Kosovo can explore opportunities to export traditional cuisine, leveraging specialized agencies with better access to foreign markets.

Collaborative efforts, such as forming consortia among Kosovo companies with limited resources, can be an advanced form of export marketing. By pooling resources and expertise, consortia can enhance the effectiveness of export strategies and improve competitiveness. However, support from institutions and favorable export conditions are necessary for the success of such strategies, while companies must continue to focus on enhancing the quality of their products and services to remain competitive in international markets.

Conclusion

The internationalization of business can be simply described as the expansion of economic activities of business entities beyond the borders of the national economy. Companies operating solely in the domestic market do not have extensive opportunities for future business expansion, so internationalization should not only be a necessity but a requirement for the vast majority of small and medium-sized enterprises in any industry.

Participation in international trade allows companies to diversify business risks and typically increases profitability while creating a competitive advantage. The internationalization of business is a demanding and lengthy process for any company, and during the implementation of the internationalization process, companies encounter numerous obstacles that complicate and slow it down.

Internationalization can be very expensive, lengthy, and extremely exhausting process for small and medium-sized enterprises, especially considering that such companies often have limited resources. Before entering foreign markets, it would be desirable to conduct detailed research to identify differences between domestic and foreign markets such as language, cultural differences, legislative, and political systems. Numerous differences can greatly impede, and even jeopardize, the internationalization process.

A crucial step in the process before entering foreign markets is the selection of markets, i.e., choosing those that are most favorable for the expansion of company business. Business managers, who are often the owners of the companies in the specific example, play a key role in market selection. Internationalization models should guide managers in making good decisions, but it is important to emphasize that they are not decisive, as there is no one universal model that can be applied in every situation. Timely entry is crucial to capitalize on potential international opportunities.

However, for economies with a relatively large share of SMEs in the structure of business entities (such as the Kosovo economy), encouraging export orientation among the small business population has a significant impact, both at the level of individual companies and the national economy.

There are a large number of factors and barriers that small and medium-sized enterprises encounter when entering foreign markets, and it is impossible to fully control them, so it is necessary to define relevant ones to minimize their impact.

According to the results of the research conducted on a representative sample of micro, small, and medium-sized enterprises in Kosovo, respondents mainly identify the following factors in the process of entering foreign markets: lack of support and assistance from government administration in business internationalization; lack of appropriate instruments for insuring the collection of foreign receivables; and partial or complete lack of knowledge of rules and procedures related to export, both general and specific to each individual foreign market. Identifying common influencing factors and barriers to internationalization serves as motivation and guidance for small and medium-sized enterprises for sustainable international business in the foreseeable future and as a roadmap for preventing their impact on the process of business internationalization. Identifying influencing factors and barriers also allows for adapting support systems and incentives for small exporters, both in terms of support types and methods of encouragement.

Ultimately, collaboration with foreign entities can yield numerous positive results despite the many difficulties that companies face during the internationalization process. The fact is that a large number of small and medium-sized enterprises prefer to stay in the domestic market, probably because they have a well-established business there or due to a certain degree of fear of international business due to inadequate and inexperienced management. Given that small and medium-sized enterprises are a key resource for economic growth, both in developed industrial countries and in developing economies, they must continue to operate successfully. One of the prerequisites for further development and growth of companies is their internationalization, which is inevitable for future successful business operations.

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DEVELOPMENT OF THE SECURITIES MARKET IN KOSOVO: CHALLENGES AND PERSPECTIVES

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Abstract

The development of the securities market constitutes an essential component for building a sustainable financial system and for promoting investments in small and transitional economies like Kosovo. This article analyzes the factors that hinder the development of the capital market in Kosovo, identifying the structural, institutional and cultural challenges that have influenced the lack of development of this segment of the financial market. Through an analysis of the international literature and comparisons with the experiences of other Balkan and Central European countries, the article highlights the importance of building a strong legal and institutional infrastructure, promoting financial education, privatization through the stock exchange and regional cooperation. The critical discussion suggests a model adapted for Kosovo, which combines the gradual development of the internal market with regional integration. The article concludes with a series of practical recommendations for creating a sustainable securities market

Abstrakt

Zhvillimi i tregut të letrave me vlerë përbën një komponent thelbësor për ndërtimin e një sistemi financiar të qëndrueshëm dhe për nxitjen e investimeve në ekonomi të vogla dhe në tranzicion si Kosova. Ky artikull analizon faktorët që pengojnë ndërtimin e tregut të kapitalit në Kosovë, duke identifikuar sfidat strukturore, institucionale dhe kulturore që kanë ndikuar në mungesën e zhvillimit të këtij segmenti të tregut financiar. Përmes një analize të literaturës ndërkombëtare dhe krahasimeve me përvojat e vendeve të tjera të Ballkanit dhe Evropës Qendrore, artikulli evidenton rëndësinë e ndërtimit të një infrastrukture ligjore dhe institucionale të fuqishme, nxitjes së edukimit financiar, privatizimit përmes bursës dhe bashkëpunimit rajonal. Diskutimi kritik sugjeron një model të përshtatur për Kosovën, që kombinon zhvillimin gradual të tregut të brendshëm me integrimin rajonal. Artikulli përfundon me një seri rekomandimesh praktike për krijimin e një tregu të qëndrueshëm të letrave me vlerë si bazë për rritjen ekonomike afatgjatë dhe integrimin financiar të Kosovës.

1. Hyrje

Tregjet e letrave me vlerë paraqesin një komponent thelbësor të sistemit financiar të një vendi, duke luajtur një rol të rëndësishëm në mobilizimin e kursimeve, alokimin e kapitalit dhe promovimin e zhvillimit ekonomik. Në ekonomitë moderne, tregjet e kapitalit sigurojnë një platformë për ndërmarrjet dhe institucionet publike për të siguruar fonde përmes emitimit të aksioneve dhe obligacioneve, ndërsa investitorëve u ofrojnë mundësi për diversifikim dhe rritje të kapitalit të tyre. Zhvillimi i këtyre tregjeve konsiderohet një element kyç për përmirësimin e qeverisjes korporative, rritjen e transparencës dhe forcimin e stabilitetit ekonomik.

Në këtë kontekst, Kosova, si një ekonomi në tranzicion dhe me zhvillim të shpejtë, përballlet me sfida të mëdha në ndërtimin e një tregu funksional të letrave me vlerë. Përkundër përpjekjeve për ndërtimin e institucioneve financiare dhe harmonizimit të legjislacionit me standardet ndërkombëtare, tregu i kapitalit në Kosovë mbetet praktikisht inekzistent. Financimi i ekonomisë dominohet nga sektori bankar, ndërsa alternativat për sigurimin e kapitalit përmes bursës mungojnë pothuajse tërësisht.

Shumë faktorë kontribuojnë në këtë situatë, përfshirë mungesën e kompanive të mëdha publike, nivelin e ulët të kulturës financiare, pasigurinë ligjore dhe politike, si dhe mungesën e një infrastrukture të zhvilluar financiare. Megjithatë, zhvillimi i tregut të letrave me vlerë në Kosovë përfaqëson një mundësi të madhe për diversifikimin e burimeve të financimit, rritjen e investimeve, përmirësimin e efikasitetit ekonomik dhe fuqizimin e rolit të sektorit privat në rritjen e qëndrueshme ekonomike.

Ky artikull synon të analizojë në mënyrë të thelluar faktorët që pengojnë ndërtimin e tregut të kapitalit në Kosovë, të shqyrtojë mundësitë ekzistuese për zhvillim dhe të ofrojë rekomandime konkrete për krijimin e një tregu të qëndrueshëm të letrave me vlerë. Përmes një qasjeje analitike dhe krahasuese me përvojat ndërkombëtare, artikulli synon të kontribuojë në debatin akademik dhe politik për reformimin e sektorit financiar të Kosovës dhe për promovimin e investimeve të qëndrueshme dhe gjithëpërfshirëse.

2. Rishikimi i literaturës

Tregjet e letrave me vlerë përfaqësojnë një nga komponentët më të rëndësishëm të sistemit financiar modern, duke ndihmuar në transferimin e fondeve nga kursimtarët tek investitorët dhe duke promovuar efikasitetin në alokimin e kapitalit. Literatura ndërkombëtare thekson se zhvillimi i tregjeve të kapitalit është i lidhur ngushtë me rritjen ekonomike, pasi këto tregje sigurojnë një burim alternativ dhe më të lirë financimi krahasuar me kreditë bankare tradicionale (Levine, 1997).

Sipas Mishkin (2001), në ekonomi të vogla dhe në zhvillim, ndërtimi i tregjeve të kapitalit është më i ndërlikuar për shkak të mungesës së thellësisë së tregut, kostove të larta të transaksioneve dhe mungesës së informacionit të besueshëm financiar. Në këtë kuadër, krijimi i një infrastrukture të sigurt ligjore dhe institucionale është faktor kyç për të nxitur besimin e investitorëve dhe për të garantuar funksionimin efikas të tregut.

Studimet mbi ekonominë e tranzicionit në Evropën Qendrore dhe Lindore tregojnë se zhvillimi i tregjeve të kapitalit është ndërlidhur me tre shtylla kryesore: (1) procesin e privatizimit të ndërmarrjeve publike përmes bursës; (2) krijimin e fondeve të investimeve dhe fondeve të pensioneve që krijojnë kërkesë institucionale për letra me vlerë; dhe (3) edukimin dhe ndërgjegjësimin e publikut për instrumentet financiare (Claessens & Laeven, 2003).

Përvoja e Kroacisë, Sllovenisë dhe Maqedonisë së Veriut dëshmon se ndonëse bursa u themelua në fazat e hershme të tranzicionit, zhvillimi real ndodhi vetëm pasi u ndërmorën reforma të thella institucionale dhe ligjore, duke përfshirë forcimin e mbrojtjes së investitorëve, standardizimin e raportimeve financiare dhe promovimin e qasjes në informacion publik.

Në rastin e Ballkanit Perëndimor, sipas një raporti të Bankës Botërore (2022), sfidat kryesore për zhvillimin e tregjeve të kapitalit janë: fragmentimi i tregjeve të vogla kombëtare, mungesa e fondeve institucionale, dobësia e menaxhimit korporativ dhe nivelet e ulëta të kursimeve private. Këto sfida janë të dukshme edhe në Kosovë, ku përveç faktorëve të përgjithshëm rajonalë, procesi i vonuar i tranzicionit ekonomik dhe ndikimet politike shtesë kanë penguar ndërtimin e një tregu funksional të kapitalit.

Në mënyrë sintetike, literatura sugjeron se zhvillimi i tregjeve të letrave me vlerë në ekonominë e vogla si Kosova kërkon:

- ▶ ndërtimin e infrastrukturës institucionale dhe ligjore,
- ▶ krijimin e kërkesës së qëndrueshme për investime,
- ▶ forcimin e transparencës dhe të mbrojtjes së investitorëve,
- ▶ si dhe një qasje të integruar rajonale për të kapërcyer kufizimet e vogëlsisë së tregjeve kombëtare.

Ky rishikim i literaturës ofron një kornizë të qartë konceptuale për të analizuar më tej sfidat dhe mundësitë specifike të zhvillimit të tregut të letrave me vlerë në Kosovë.

3. Analiza e faktorëve që pengojnë zhvillimin e tregut të letrave me vlerë në Kosovë

Përkundër rëndësisë së tregut të letrave me vlerë për zhvillimin ekonomik dhe konsolidimin e sistemeve financiare moderne, Kosova përballlet me një sërë faktorësh që pengojnë ndërtimin dhe funksionalizimin e këtij tregu. Analiza e këtyre faktorëve është thelbësore për të kuptuar sfidat ekzistuese dhe për të identifikuar rrugët e mundshme të zhvillimit.

Mungesa e kompanive të mëdha publike dhe privatizimi i pjesshëm . - Një prej pengesave kryesore është mungesa e ndërmarrjeve të mëdha të listueshme në treg. Privatizimi në Kosovë është realizuar kryesisht përmes metodave tradicionale të shitjes direkte ose tenderëve të mbyllur, duke anashkaluar përdorimin e bursës si instrument për transferimin transparent të pronësisë. Kjo ka rezultuar në një mungesë të theksuar të subjekteve që do të mund të ishin listuar dhe tregtuar në një treg të kapitalit.

Dominimi i financimit bankar . - Financimi i sektorit privat dhe i zhvillimit ekonomik në Kosovë është mbështetur pothuajse ekskluzivisht në kredinë bankare. Bankat dominojnë peizazhin financiar dhe ofrojnë kanalin kryesor të sigurimit të kapitalit, duke lënë hapësirë shumë të kufizuar për zhvillimin e alternativave të tjera financiare si bursat e aksioneve ose tregjet e obligacioneve. Ky dominim pengon diversifikimin e instrumenteve të financimit dhe e mban tregun e kapitalit në fazën embrionale.

Mungesa e kulturës financiare dhe ndërgjegjësimit publik . - Një tjetër faktor pengues është niveli i ulët i kulturës financiare midis popullsisë dhe sektorit privat. Shumica e individëve dhe bizneseve nuk kanë njohuri të mjaftueshme për investimin në aksione, obligacione apo fonde të investimeve. Kjo mungesë e edukimit financiar ndikon negativisht në kërkesën për letra me vlerë dhe në gatishmërinë për të marrë pjesë në tregje të tilla.

Mungesa e infrastrukturës institucionale dhe teknologjike. - Zhvillimi i një tregu të suksesshëm të kapitalit kërkon ndërtimin e një infrastrukture të sofistikuar institucionale, përfshirë një bursë funksionale, autoritete të fuqishme mbikëqyrëse, mekanizma efikas të pasqyrimin të pronësisë dhe të zgjidhjes së mosmarrëveshjeve. Aktualisht, në Kosovë mungojnë shumica e këtyre elementeve ose ekzistojnë vetëm në formë fillestare dhe jo-funksionale. Po ashtu, teknologjitë që mundësojnë tregtimin elektronik të sigurt dhe të shpejtë janë ende të pazhvilluara.

Pasiguria ligjore dhe politike. - Një faktor thelbësor që ndikon negativisht është mungesa e stabilitetit ligjor dhe pasiguritë politike. Investitorët kërkojnë një mjedis ku të drejtat e tyre mbrohen në mënyrë të qartë dhe ku sistemi gjyqësor është efikas, i paanshëm dhe i shpejtë. Në mungesë të një sundimi të fuqishëm të ligjit, investitorët hezitojnë të përfshihen në investime afatgjata në tregjet e kapitalit.

Fragmentimi i tregut dhe mungesa e bashkëpunimit rajonal. - Kosova, si treg i vogël me popullatë dhe ekonomi të kufizuar, vuan nga fragmentimi i tregjeve financiare. Në mungesë të integritetit rajonal ose krijimit të platformave të përbashkëta financiare me vendet fqinje, tregu i kapitalit mbetet shumë i vogël për të qenë atraktiv për investitorët ndërkombëtarë dhe për të krijuar një volum të mjaftueshëm të transaksioneve.

Në përmbljedhje, zhvillimi i tregut të letrave me vlerë në Kosovë është penguar nga një kombinim kompleks faktorësh ekonomikë, institucionalë, kulturorë dhe politikë. Këta faktorë kërkojnë zgjidhje të shumëanshme dhe të koordinuara për të ndërtuar një mjedis të favorshëm për zhvillimin e një tregu të qëndrueshëm dhe funksional të kapitalit.

4. Mundësitë dhe Perspektivat për Zhvillimin e Tregut të Letrave me Vlerë në Kosovë

Megjithëse Kosova përballlet me sfida të konsiderueshme për zhvillimin e tregut të letrave me vlerë, ekzistojnë disa mundësi reale që, nëse shfrytëzohen në mënyrë të duhur, mund të nxisin ndërtimin e një sistemi funksional dhe të qëndrueshëm të kapitalit. Këto mundësi lidhen si me zhvillimet e brendshme institucionale dhe ekonomike, ashtu edhe me kontekstin më të gjerë rajonal dhe global.

Privatizimi përmes listimit në bursë. - Një mundësi e rëndësishme për zhvillimin e tregut të kapitalit në Kosovë është privatizimi i ndërmarrjeve publike përmes listimit të aksioneve në një bursë të organizuar. Duke shitur aksione publikut dhe investitorëve institucionalë, shteti jo vetëm që do të siguronte fonde për investime strategjike, por do të promovonte gjithashtu transparencën, llogaridhënien dhe kulturën e investimeve publike. Përvoja e vendeve të tjera të rajonit tregon se listimi i ndërmarrjeve publike është një hap kyç për krijimin e tregjeve të kapitalit.

Krijimi i fondeve të investimeve dhe të pensioneve. - Themelimi dhe zhvillimi i fondeve të investimeve dhe fondeve të pensioneve do të mundësonte krijimin e një kërkese të qëndrueshme për letra me vlerë. Fondet institucionale janë blerës të natyrshëm të aksioneve dhe obligacioneve dhe veprojnë si stabilizues të tregut. Në këtë drejtim, reformat në sistemin e pensioneve dhe inkurajimi i kursimeve afatgjata përmes fondeve të menaxhuara profesionalisht do të përbënin një bazë të fortë për zhvillimin e tregut të kapitalit.

Edukimi financiar dhe ndërgjegjësimi publik. - Promovimi i edukimit financiar për qytetarët dhe bizneset është një hap i domosdoshëm për të zgjeruar pjesëmarrjen në tregun e kapitalit. Fushatat publike për të shpjeguar konceptet e investimit, rreziqet dhe përfitimet e aksioneve dhe obligacioneve, si dhe rolin e tregjeve të kapitalit në zhvillimin ekonomik, mund të nxisin krijimin e një baze më të gjerë të investitorëve individualë.

Mundësia e krijimit të një burse rajonale. - Në kushtet e një tregu të vogël kombëtar, bashkëpunimi rajonal mund të jetë një zgjidhje pragmatike dhe efektive. Një bursë e përbashkët për vendet e Ballkanit Perëndimor do të mund të siguronte volum të mjaftueshëm tregtimi, do të tërhiqte investitorë ndërkombëtarë dhe do të krijonte mundësi më të mëdha për financim të biznesit. Modelet e bashkëpunimit financiar rajonal në vende të tjera kanë treguar sukses në kapërcimin e kufizimeve të tregjeve të vogla.

Modernizimi i infrastrukturës ligjore dhe teknologjike. - Për të ndërtuar një treg kapitali të qëndrueshëm, Kosova duhet të modernizojë kuadrin e saj ligjor për mbrojtjen e investitorëve, qasjen në informacion dhe standardet e raportimit financiar. Po ashtu, investimi në infrastrukturë teknologjike për krijimin e platformave të sigurta dhe efikase të tregtimit elektronik është jetik për të mundësuar pjesëmarrjen e gjerë dhe për të siguruar funksionim transparent dhe efikas të tregut.

Mbështetja nga organizatat ndërkombëtare. - Kosova ka mundësi të shfrytëzojë asistencën teknike dhe financiare nga organizata ndërkombëtare si Banka Botërore, FMN, BERZH dhe BE, të cilat kanë përvojë të konsiderueshme në ndërtimin e tregjeve të kapitalit në ekonomi të vogla dhe në tranzicion. Përdorimi i këtyre burimeve mund të ndihmojë në kapërcimin e boshllëqeve teknike dhe institucionale.

5. Diskutim kritik

Zhvillimi i tregjeve të letrave me vlerë në ekonomitë e vogla dhe të reja si Kosova nuk është një proces që ndodh në mënyrë organike; ai kërkon ndërhyrje të qëllimshme, ndërtim institucional dhe adaptim të përvojave ndërkombëtare në kontekstin lokal. Në këtë kapitull, diskutojmë disa nga mësimet kryesore të nxjerra nga përvoja ndërkombëtare dhe përcaktojmë se cili model mund të jetë më i përshtatshëm për zhvillimin e tregut të kapitalit në Kosovë.

Përvoja ndërkombëtare: çfarë mësojmë nga vendet tjera? Në rastet e suksesshme të vendeve të vogla dhe në tranzicion si Sllovenia, Kroacia dhe Estonia, ndërtimi i tregjeve të kapitalit ka ndjekur disa parime të përbashkëta:\

- ▶ Privatizimi përmes bursës: Shumë kompani shtetërore u privatizuan përmes shitjes së aksioneve në bursa publike, duke rritur vëllimin e tregut dhe përfshirjen e publikut.
- ▶ Forcimi i mbrojtjes së investitorëve: Përdorimi i rregulloreve strikte për mbrojtjen e investitorëve të vegjël ka ndihmuar në ndërtimin e besimit në tregje.
- ▶ Krijimi i institucioneve të forta rregullatore: Autoritetet e pavarura të tregjeve financiare kanë luajtur një rol kyç në monitorimin e sjelljes së tregjeve dhe në garantimin e funksionimit të tyre të drejtë dhe transparent.

- Ndërkombëtarizimi i tregut: Lidhja me tregjet rajonale dhe pjesëmarrja në rrjete ndërkombëtare të investimeve ka sjellë investitorë të huaj dhe ka rritur likuiditetin e tregjeve.

Rëndësia e përshtatjes me realitetin kosovar. - Megjithëse modelet ndërkombëtare ofrojnë mësim të vlefshme, zhvillimi i tregut të letrave me vlerë në Kosovë duhet të bazohet në një qasje të përshtatur me realitetet dhe kufizimet e saj:

- Tregu i vogël: Duke qenë një ekonomi me një numër të vogël kompanish të mëdha dhe me kursime të kufizuara private, tregu i kapitalit në Kosovë nuk mund të ndjekë modele që presupozojnë thellësi të madhe tregtare që nga fillimi.
- Nevoja për zhvillim gradual: Kosova duhet të synojë ndërtimin e tregut përmes fazave të mirëplanifikuara – fillimisht duke listuar ndërmarrje publike, pastaj duke promovuar emetimin e obligacioneve korporative dhe vetëm më vonë duke zgjeruar tregtimin e aksioneve private.
- Fokusi në transparencë dhe edukim: Për shkak të mungesës së kulturës së investimeve, një përparësi duhet t'i jepet edukimit financiar të publikut dhe sigurimit të transparencës së plotë në çdo hap të zhvillimit të tregut.

Cili model është më i përshtatshëm për Kosovën? Një model i përshtatshëm për Kosovën do të ishte një model hibrid që kombinon elemente të brendshme të zhvillimit me bashkëpunim rajonal:

- Fillimisht ndërtimi i një burse kombëtare minimale që mund të menaxhojë privatizimin e disa ndërmarrjeve publike përmes shitjes së aksioneve publike.
- Pastaj integrimi gradual me një platformë rajonale të përbashkët, në mënyrë që të rritet vëllimi i tregtimit dhe të tërhiqen investitorë ndërkombëtarë.
- Zhvillimi paralel i fondeve të investimeve dhe të pensioneve për të garantuar një bazë institucionale të qëndrueshme investitorësh.

Në këtë mënyrë, Kosova nuk do të përpiqej të ndërtojë një treg të madh të pavarur që do të ishte i vështirë për t'u mirëmbajtur, por do të krijonte një hapësirë solide për zhvillim të qëndrueshëm dhe integrim në tregjet më të gjera financiare evropiane.

Në përmbledhje, diskutimi kritik tregon se Kosova, pavarësisht sfidave, ka mundësi reale për të ndërtuar një treg funksional të kapitalit, nëse ndjek një qasje të kujdesshme, të matur dhe të përshtatur me realitetin ekonomik dhe social të vendit.

6. Përfundime dhe Rekomandime

Zhvillimi i tregut të letrave me vlerë në Kosovë përbën një sfidë të rëndësishme, por edhe një mundësi strategjike për forcimin e sistemit financiar, nxitjen e investimeve dhe rritjen e qëndrueshme ekonomike. Analiza e faktorëve që pengojnë ndërtimin e këtij tregu tregon se mungesa e kompanive të mëdha publike, dominimi i financimit bankar, niveli i ulët i kulturës financiare, infrastruktura e pamjaftueshme institucionale dhe teknologjike, pasiguria ligjore dhe fragmentimi i tregut janë ndër pengesat kryesore.

Nga ana tjetër, ekzistojnë mundësi të qarta për zhvillim, duke përfshirë privatizimin përmes bursës, krijimin e fondeve të investimeve dhe të pensioneve, promovimin e edukimit financiar, ndërtimin e infrastrukturës moderne teknologjike dhe ligjore, dhe integrimin rajonal të tregjeve financiare. Përvoja ndërkombëtare tregon se me reforma të guximshme dhe të koordinuara, edhe ekonomitë e vogla dhe në tranzicion mund të ndërtojnë tregje të qëndrueshme kapitali.

Në këtë drejtim, artikulli propozon rekomandimet e mëposhtme për Kosovën:

Hartimi i një strategjie kombëtare për zhvillimin e tregut të kapitalit Strategjia duhet të përcaktojë objektivat afatshkurtër, afatmesëm dhe afatgjatë për ndërtimin e tregut, me angazhim të qartë institucional dhe plan investimesh për infrastrukturën ligjore dhe teknologjike.

Privatizimi përmes listimit në bursë Ndërmarrjet publike strategjike duhet të privatizohen pjesërisht përmes shitjes së aksioneve në një bursë publike, duke promovuar transparencën dhe përfshirjen e qytetarëve në ekonominë e vendit.

Nxitja e krijimit të fondeve të investimeve dhe pensioneve Krijimi i fondeve të menaxhuara profesionalisht do të sigurojë një bazë të qëndrueshme investitorësh institucionalë dhe do të rrisë kërkesën për letra me vlerë.

Promovimi i edukimit financiar Përmes fushatave publike dhe integritetit të edukimit financiar në sistemin arsimor, duhet të rritet ndërgjegjësimi i qytetarëve për mundësitë dhe rreziqet e investimeve në tregjet e kapitalit.

Përmirësimi i kuadrit ligjor dhe mbrojtja e investitorëve Duhet të reformohen ligjet për tregjet e kapitalit, mbrojtjen e investitorëve dhe raportimin financiar, duke ndërtuar një sistem të fortë të sundimit të ligjit që nxit besimin në treg.

Bashkëpunimi rajonal Kosova duhet të eksplorojë mundësitë për integrim në platforma rajonale financiare, duke kapërcyer kufizimet e vogëlsisë së tregut dhe duke tërhequr investitorë të huaj.

Në përfundim, zhvillimi i tregut të letrave me vlerë në Kosovë nuk është vetëm një alternativë, por një domosdoshmëri për ndërtimin e një ekonomie të qëndrueshme, dinamike dhe të hapur ndaj investimeve. Me hapa të menduar mirë dhe me përkushtim institucional, Kosova ka potencialin për të ndërtuar një treg kapitali që do të shërbejë si motor për zhvillimin e ardhshëm ekonomik dhe integrimin rajonal dhe evropian.

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TECHNOLOGY-DRIVEN DECISION MAKING: THE INFLUENCE OF SYSTEMS ON MARKET COMPETITIVENESS OF TOURISTIC ENTERPRISES

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Abstract

In an era of rapid globalization and technological advancement, decision making systems have emerged as a critical tool for enhancing financial decision-making in companies with international touristic activities. This study examines the impact of decision-making systems on financial performance, with a particular focus on equity investment, asset management, and market competitiveness in touristic corporations. Using a quantitative deductive approach, the research tests key hypotheses to determine how decision-making systems contributes to improving decision accuracy and operational efficiency. Statistical analysis confirms that enterprises integrating systems into their financial decision-making processes achieve greater profitability, enhanced competitiveness, and more effective investment strategies. Additionally, the findings highlight the role of decision supporting systems in reducing uncertainty, improving compliance with regulatory frameworks, and fostering data-driven management practices. The study concludes with strategic recommendations on leveraging intelligent platforms as a core component of business operations to optimize decision-making and ensure long-term financial sustainability in globally active corporations.

Keywords: Decision Making Systems, Financial Performance, International Companies, Depository Corporations, Investment Decision-Making

Introduction

In today's highly competitive tourism industry, technology-driven decision-making systems have become a crucial factor in enhancing the market positioning and financial performance of touristic enterprises. As globalization and digital transformation accelerate, businesses engaged in international tourism must rely on advanced decision-supporting tools to optimize their operations, investment strategies, and market responsiveness. The ability to process large volumes of data, predict market trends, and improve asset management through intelligent decision-making systems provides touristic corporations with a strategic advantage in an increasingly volatile business environment (Khaki and Akin, 2020).

Decision-making systems influence multiple aspects of organizational behavior, from individual decision-making to corporate-level strategy, enabling touristic enterprises to streamline financial operations, reduce uncertainties, and enhance overall competitiveness. These systems facilitate efficient allocation of resources, improve customer relationship management, and strengthen compliance with industry regulations. Furthermore, by integrating smart data analytics and automation, decision-making technologies allow businesses to rapidly adapt to market fluctuations and consumer demands, ensuring sustainable growth and profitability (Buhalis, 2019).

To maximize the effectiveness of decision-making systems, it is essential to engage key stakeholders in their development, ensure user-friendly interfaces, and provide continuous training to optimize utilization. Touristic enterprises that successfully implement such systems not only gain a competitive edge but also drive innovation and operational efficiency in an evolving global market. This paper explores the impact of decision-making technologies on market competitiveness, financial sustainability, and strategic management within international touristic enterprises, offering insights into best practices for leveraging these systems to achieve long-term success. (Marakas, 2018).

The tourism sector exhibits significant research gaps in the application of decision-support systems (DSS), particularly in the context of small and medium-sized enterprises (SMEs). While DSS has been extensively studied in finance and business management, its specific impact on tourism—especially regarding market positioning, profitability, and strategic investments—remains underexplored (Suanpang, P, Pothipassa, P., 2024). Additionally, the industry's inherent volatility, driven by factors such as seasonality and global disruptions, necessitates further investigation into adaptive decision-making systems that can enhance resilience. Moreover, the integration of smart technologies like AI and IoT into DSS frameworks for sustainable competitive advantage is insufficiently addressed. Finally, there is a notable absence of industry-specific case studies focusing on SMEs, which limits understanding of how DSS implementation varies across different business scales. Addressing these gaps could yield valuable insights into the role of technology-driven decision-making systems in fostering financial sustainability and competitiveness within the international tourism industry. (Chang, 2021)

Theoretical frame

Globalization has significantly increased access to tourism, particularly for the middle class. As a result, tourism has emerged as one of the largest industrial sectors globally over the past two decades. (Streimikiene, et al, 2021).

Moreover, the commercial application of information technology has profoundly transformed organizational structures and operations. In the context of globalization and the pressing need for market competitiveness, companies—particularly in the Western Balkan countries—face both challenges and obligations. Information systems technology significantly influences organizational performance, including in the tourism sector, with effects that can be both direct and indirect. The direct impact manifests through the enhancement and acceleration of production and business processes, leading to improved financial metrics such as productivity, profitability, and competitiveness. Conversely, the indirect influence of decision-making systems on organizations is observed through their effects on various aspects of organizational behavior at individual, group, and organizational levels, which ultimately impact the company's financial performance. (Khaki and Akin, 2020).

Technology-Driven Decision Making has become a strategically important resource of modern companies. They provide concentration of all information that is important for quality decision making, Marakas set the categorization of systems performance at based on 180 research that deals with the impact of Technology-Driven Decision Making on the organizational performance

(Marakas, 2018). The categorization of supporting decision-making systems performance in the company encompasses six important dimensions: the quality of information technology, quality information, use of information technologies, satisfaction of users (employees), individual influence and the influence of the organization. In addition, there are opinions that maintenance technological competitiveness of the company is a responsibility that should be shared by all members of the management team (Sharda, Delen, Turban, 2019).

The integration of decision-making systems in equity investment practices has significantly influenced the performance of depository corporations. These systems, which leverage advanced data analytics, artificial intelligence, and machine learning, are designed to enhance decision-making processes, mitigate risks, and optimize investment outcomes. As financial markets become increasingly complex, decision-making tools provide critical support in analyzing vast datasets, predicting market trends, and managing investment portfolios. (Ismail, H et al., 2018)

Recent research highlights the profound impact of decision-making systems on investment decisions within depository corporations. For instance, the use of these systems has been shown to improve accuracy in predicting market movements and identifying profitable investment opportunities, thereby enhancing the overall performance of these institutions (Abideen et al., 2023). Additionally, decision-making tools help minimize behavioral biases that often lead to suboptimal investment choices. By providing data-driven insights, these systems reduce the influence of emotional and psychological factors on investors, resulting in more rational and effective decision-making (Ahmed et al., 2023).

Moreover, the adoption of decision-making systems in depository corporations has facilitated better compliance with regulatory requirements and increased transparency in investment activities. This is particularly important for minority depository institutions (MDIs), which face unique challenges in accessing capital and managing investments. The Federal Reserve's initiatives to support MDIs through various programs underscore the critical role of these systems in promoting financial stability and inclusion in underserved communities. (Federal Reserve, 2022).

In emerging markets, decision-making systems have proven valuable in navigating volatile economic conditions and market anomalies. Studies on the Pakistani equity market reveal that these systems significantly influence investment decisions by providing robust analytical frameworks that consider local market dynamics and investor behavior. These findings suggest that decision-making systems not only enhance investment performance but also contribute to the overall resilience and competitiveness of depository corporations in diverse economic environments. (Qiu et al., 2023).

Leveraging Decision-Making Systems for Investment Strategies in the Western Balkans' Tourism Sector

The impact of decision-making systems on equity investment in the performance of organizations dealing with touristic activities in the Western Balkans has become increasingly significant. As the region integrates more closely with the European Union, the deployment of advanced decision-making systems has been pivotal in enhancing investment strategies and financial performance. (Turban, 2019)

Decision making systems, which include sophisticated data analysis tools and algorithms, aid tourism enterprises in making informed investment decisions. These systems are particularly valuable in the volatile markets of the Western Balkans, where economic conditions are influenced by various external factors, including EU economic policies and global market trends.

The European Investment Bank (EIB) has significantly contributed to the development of the tourism sector in the Western Balkans, investing €1.2 billion in 2023. This funding has supported sustainable projects and small and medium enterprises (SMEs), helping to stabilize and grow the regional economy. By providing both financial and technical advisory support, the EIB has enabled local businesses to adopt decision making systems that enhance their investment decision-making processes (EIB).

Moreover, the World Bank's initiatives have also played a crucial role. Their programs focus on building the resilience and investment readiness of small, innovative tourism businesses in the Western Balkans. These efforts include mentoring and training to help these companies expand beyond national borders and integrate advanced decision-making tools into their operations. This not only improves their performance but also attracts more equity investments by showcasing their capability to adapt to market changes and economic shocks (World Bank).

The adoption of decision-making systems in organizations dealing with touristic activities facilitates better risk management and optimized investment portfolios. These systems analyze vast amounts of data to identify investment opportunities and potential risks, providing a competitive edge in the rapidly evolving tourism markets of the Western Balkans. As these systems become more integrated into the industry's infrastructure, they contribute to the overall stability and growth of the tourism sector, fostering a more attractive environment for equity investments (World Bank).

In conclusion, the implementation of decision-making systems is crucial for enhancing the performance of organizations dealing with touristic activities in the Western Balkans. By leveraging these technologies, tourism enterprises can make more informed investment decisions, manage risks more effectively, and ultimately drive economic growth and stability in the region.

Methodology

The questions for assessing decision-making systems were developed based on theoretical considerations and relevant aspects of implementation. Existing literature highlights the significance of information technology adoption in enhancing business operations. Furthermore, previous research emphasizes the importance of employee training and motivation in effectively utilizing modern information technologies.

To construct a suitable questionnaire for measuring decision-making systems in touristic enterprises, various standardized instruments were reviewed. While these instruments provided valuable insights, none fully aligned with the objectives of this study. Consequently, a customized questionnaire was developed to measure the integration, application, and perceived importance of decision-making systems in tourism enterprises.

Financial performance was evaluated based on well-established indicators from prior research, including profitability, sales growth, fixed asset growth, market share, and industry competitiveness. To provide a more comprehensive assessment, two additional dimensions—productivity and employee salaries—were incorporated.

As a result, the study assessed the following seven financial performance indicators, ranked by respondents: Productivity, Profitability, Market share, Sales growth, Competitiveness, Fixed asset growth, and Employee salaries.

All performance indicators were evaluated using a five-point Likert scale, a methodology widely applied in previous research (Wang et al., 2011). Financial performance was treated as a single dimension in the analysis.

Data Analysis

The research findings were derived using appropriate statistical methods. IBM SPSS Statistics software was used for data analysis, applying the following techniques:

- ✚ Descriptive statistics: To assess the current state (mean values) of decision-making systems and their impact on business performance in touristic enterprises.
- ✚ T-test: To determine statistically significant differences between companies with high and low levels of decision-making system integration in relation to financial performance.
- ✚ Correlation analysis: To identify relationships between decision-making system adoption and financial performance indicators.
- ✚ Regression analysis: To evaluate the predictive influence of decision-making system variables (independent factors) on business performance outcomes.
- ✚ Hierarchical regression analysis: To examine moderating effects of leadership-member exchange (LMX), trust in management, workplace trust, ownership structure, and communication effectiveness on decision-making system adoption and business performance.

Research sample

The research was conducted among touristic enterprises in four South East European Countries (Kosovo, Albania, Monte Negro and Macedonia) with middle managers serving as the primary respondents. Data collection involved structured interviews and questionnaire distribution. A total of 600 questionnaires were disseminated, of which 412 were returned. However, 32 questionnaires were excluded due to incomplete responses, resulting in a final sample of $N = 381$ middle managers from 102 companies. The effective response rate was 63%. By incorporating these factors, the study comprehensively evaluate the role of decision-making systems in driving market competitiveness within the tourism sector.

Table 1 . Sample population

What margin of error can you accept? <small>5% is a common choice</small>	5%
What confidence level do you need? <small>Typical choices are 90%, 95%, or 99%</small>	95%
What is the population size? <small>If you don't know, use 20000</small>	35678
What is the response distribution? <small>Leave this as 50%</small>	50%
Your recommended sample size is	381

Table 2: Sample calculation

Alternate scenarios								
With a sample size of	<input type="text" value="100"/>	<input type="text" value="200"/>	<input type="text" value="300"/>		With a confidence level of	<input type="text" value="90"/>	<input type="text" value="95"/>	<input type="text" value="99"/>
Your margin of error would be	9.79%	6.91%	5.63%		Your sample size would need to be	269	381	652

Source: sample calculator <http://www.raosoft.com/samplesize.html>

Analyses

In this part are being addressed the features of dependent and independent variables, their effects on the validation of raised hypotheses and their relationships between themselves. So, the following table brings the description of the variables extracted from the questionnaire.

Table 3: Research Variables description

Variable	Description of Variables	Data source
Dependent variable (Y)	Financial Performance - Profit / Loss Based on DMS (FPAHDMS)	Report query 2015-2024
Independent variable (X ₁)	System based financial performance (FKZDMS)	Questionary 2024
Independent variable (X ₂)	Support based decision making (DMS)	Questionary 2024
Independent variable (X ₃)	General and Special Reserves (RPV)	Questionary 2024
Independent variable (X ₄)	Asset and Liability Management via DMS (MAD)	Questionary 2024

The following figures are statistical values of research variables as presented in tabular form.

Table 4: Statistical description of variables

Variable	ob a	Mean	Std. Dev.	Min	Max
FPAHDMS	411	22.36437	22.6532	-2.3	94.32
FKZDMS	412	187.6105	109.8263	4.9	342.8
DMS	412	65.69959	73.52933	-1.8	303.1
RPV	409	16.00031	8.926923	.3	39.1
MDS	408	.575426	.3322049	0	2.37
MAD	412	1279.572	458.1689	133.3	1920

Based on above table it may be concluded that the standard deviation in the answers provided by the respondents are on the acceptable limit. Regarding the number of answers for which the variables are satisfactory, are based on the number of respondents. The next table show the results of correlation between variables.

Table 5: Correlation analyses of variables

	PF	FKZ	FM	RPV	GD	MAD
HDSS	1.0000					
FKZDS	0.6833	1.0000				
DSS	0.4265	0.7803	1.0000			
RPV	0.5717	0.9283	0.8126	1.0000		
MDS	0.2634	-0.4598	-0.3625	-0.4058	1.0000	
HDSS	0.5334	0.8916	0.5762	0.8697	-0.5782	1.0000

In this part are presented the standard multiple regression analysis, where through this statistical test is verified the validity of the hypotheses presented at the beginning of this study. Throughout results of standard multiple regression, whilst considering the level of significance is analyzed the impact of independent variables on the dependent variable and on the other hand the regression coefficients are interpreted.

Table 6: Standard multiple regression analysis

Source	SS	df	MS	T7 ¹ / R	No. Tt	-222
Model	70404.3465	5	1408	0.8693	Prob > F	= 58.34
Residual	52136.8574	216	241	.37434	R-squared	= 0.0000
Total	122541.204	221	554.	485085	Adj R-squared	= 0.5745
PF	Coef.	Std. Err.	t	p> 1 tl	[95% Conf. Interval]	
HDSS	.339292	.0306779	11.06	0.000	.2788256	.3997583
FKZDS	.1770626	.0315123	-5.62	0.000	.2391736	.1149516
DSS	.4916227	.4140731	1.19	0.236	.3245184	1.307764
RPV	9.41909	4.646249	-2.03	0.044	18.57688	.2612994
MDS	.0422754	.0075542	-5.60	0.000	.0571647	.0273861
Cons	21.20386	6.417775	3.30	0.001	8.554374	33.85334

Based on the results of the standard multiple regression analysis and the regression equation we can conclude that all the independent variables of this study are significant and are within the range of statistical reliability except for the general and specific stock variables. The coefficient of determination between these variables, the dependent variable and the independent variable included in this econometric model is 57.45% which represents an average level of explanatory nature of these variables and means that this econometric model is statistically stable.

β_0 - HDSS all factors are constant then the value of financial performance of companies is 21.20 units. This statement is correct because the significance level is $0.001 < 0.05$.

β_1 FKZDS it - DSS based financial performance if the decision increase per unit capital and keep other factors constant, then the PF will increase by 0.399 units. This statement is correct because the significance level is $0.000 < 0.05$.

β_2 DSS - if retained earnings increase by one unit while keeping other factors constant, then PF will increase by 0.177 units. This statement is correct because the significance level is $0.000 < 0.05$.

β_3 RPV - if total and specific reserves increase by one unit while keeping other factors constant, then PF will increase by 0.491 units. This statement is not correct because the significance level is $0.236 > 0.05$.

β_4 GDit - if donor grants increase per unit keeping other factors constant, then PF will increase by 9.41 units. This statement is correct since the significance value is $0.044 < 0.05$.

β_5 MDS - if asset and liability management increase by one unit while keeping other factors constant, then PF will increase by 0.422 units. This statement is correct since the significance value is $0.04 < 0.05$.

It can be concluded that all independent variables are significant, statistically significant and confirm the validity of the hypotheses of this study, with the exception of the general and specific reserve variable which is not significant.

Hypothesis testing is performed on the basis of anova analysis and regression analysis R squeeze. For more information see the following table:

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,986 ^a	,972	,953	16481,521

a. Predictors: (Constant FIN per DSS)

The R finds that all the hypotheses are proven which means: proprietary decision support systems affected the financial performance of depository corporations decision support systems have on retained earnings on the financial performance of depository corporations effect do decision support systems have on the management of assets and liabilities in the financial performance of multinational corporations.

Tab 8 ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28174173868,505	2	14087086934,252	51,859	,005 ^b
	Residual	814921614,829	3	271640538,276		
	Total	28989095483,333	5			

a. Dependent Variable: FIN

b. Predictors: (Constant), DSS

Conclusion

The primary objective of this study is to assess the impact of decision-making systems (DMS) on the capital structure and financial performance of touristic enterprises. This study utilizes panel data analysis to evaluate these relationships. The results indicate that the overall level of information technology adoption for decision-making purposes is slightly above average, suggesting that touristic enterprises have a relatively strong foundation in technological integration. Moreover, the study finds that the highest adoption levels of decision-making systems are observed in companies where top management actively prioritizes information technology. This suggests that when management recognizes the strategic importance of digital decision-making tools, their implementation and effectiveness are likely to increase.

Higher levels of decision-making system adoption are particularly evident in the following cases:

- The CEO is a woman.

- The CEO is a younger individual (under 45 years of age).
- The company operates as a privately-owned enterprise.
- The company demonstrates strong financial performance.

Enterprises meeting two or more of these conditions tend to exhibit significantly higher levels of decision-making system usage. Additionally, professional respect for leadership (LMX dimension) and trust in management actions (mutual workplace trust) contribute to increased technological adoption. Leaders who are highly skilled and strategically competent create an environment conducive to the effective use of decision-making systems, ultimately improving business performance.

The degree of decision-making system adoption—encompassing its implementation, effectiveness, employee training, and management commitment—forms a critical dimension of modern technological utilization in touristic enterprises. The level of decision-making system adoption serves as an indicator of an organization's overall business performance. When considering the technical, operational, organizational, and behavioral impacts of decision-making technology, it is evident that higher technological integration has both direct and indirect positive effects on various business performance metrics. Indirect effects are realized through financial improvements: a higher degree of technological integration enhances financial performance, which in turn strengthens overall organizational performance.

This study employed panel data econometric models to assess the correlation between decision-making system adoption, capital structure, and financial performance in touristic enterprises. The empirical findings demonstrate that the independent variables—funds contributed by owners, retained earnings, special and general reserves, grants from donors, and net external assets—significantly impact financial performance at the 1%, 5%, and 10% confidence levels. These factors positively influence the financial stability and growth potential of touristic enterprises.

Based on these findings, it is recommended that touristic enterprises:

- ✚ Increase investment in decision-making technologies to enhance strategic financial decision-making and market responsiveness.
- ✚ Expand funding sources, particularly through owner contributions, retained earnings, and external grants, to strengthen financial resilience.
- ✚ Improve asset and liability management, ensuring a balanced capital structure that supports long-term profitability.
- ✚ Promote leadership awareness and employee training to maximize the benefits of decision-making systems in operational efficiency and investment strategies.

By integrating these recommendations, touristic enterprises can enhance profitability, optimize investment strategies, and achieve sustainable competitive advantages in the market.

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THE IMPORTANCE OF ANALYZING OUR ENTERPRISE DATA IN CREATING A SUCCESS DRIVEN LEADERSHIP

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ABSTRACT

Our society is governed by data. The digital revolution, characterized by the everyday generation of vast quantities of data, stems from the pursuit of innovative solutions and competitive advantage. The processing and analysis of this extensive data set, collected from many sources and containing inconsistent, erroneous, inadequate, and misleading information, poses considerable hurdles for contemporary enterprises. The diversity of data sources, including text, graphics, audio, and video, along with the rapid generation, collection, and processing of real-time data, contributes to significant complexity within these databases. To evaluate this vast volume of structured and unstructured data, novel data analytics patterns and trends are necessary. Big Data constitutes an extensive aggregation of information-dense data that may be broadly classified into five dimensions: (i) Volume: delineating the data's considerable magnitude; (ii) Velocity: the speed at which fresh data is produced and assessed in real time; (iii) Variety: denoting unstructured data from diverse sources, including traditional databases, transactional systems, the Internet, and social media; (iv) Veracity: the authenticity or provenance of the data; and (v) Value: the worth of the data, contingent upon whether it is historical or contemporary. This paper will underscore the significance and problems of data science within the business environment.

Keywords: data, data science, business, strategy, big data.

INTRODUCTION

The hardware and software prerequisites for managing huge data volumes from several sources constitute a primary challenge faced during the adoption of Big Data in industrial processes and applications. Despite the partial success of advanced technologies such as cloud computing, process and storage virtualization, and new programming and data processing frameworks like MapReduce and Hadoop, complex industrial applications still necessitate more sophisticated technologies to meet real-time requirements.

Dual channel operating in a competitive landscape requires enhancement of service levels and joint efforts between channels, intensifying the competition between manufacturers and retailers while fostering cooperation across the whole supply chain. This paper develops a service differentiation model based on centralized and decentralized decision-making. Through theoretical modeling and numerical computation, it examines the impact of various service levels and network channels on demand within a dual-channel supply chain, emphasizing the cooperative strategy between direct network channels and retail channels to achieve supply chain coordination (Xi Liu, 2017).

Coordination in dual-channel supply chains has been extensively researched for an extended period. To reach an optimal decision, Huang and Swaminathan consider a supply chain comprising

both conventional and online outlets. According to the analysis by Chen Zhang and Sun, the wholesale price contract may effectively coordinate a dual-channel supply chain. David and Adida examine competition and collaboration within a supply chain where a sole supplier operates both a direct channel and distributes its products through diverse specialty retailers. In actuality, most suppliers distribute via various retail channels. Sinha and Santanu optimize the supply chain of a single vendor and several buyers through a discount pricing policy. Mateen and Chatterjee develop analytical models for various techniques to coordinate a single supplier with different shops utilizing vendor-managed inventory. The swift globalization of the market has led to a notable transition from intergovernmental competition to competition among enterprises, especially brands. The competitiveness of a company's core is dictated by its brand. The United States generally occupies 227 slots in the top 500 global brands, sustaining significant influence, while Chinese enterprises account for approximately 36 slots. Chinese enterprises must enhance their brand competitiveness to distinguish themselves in the global market (Zhi Li, 2018).

THE DIGITAL TRANSFORMATION OF ENTERPRISES

E-commerce has rapidly progressed in recent years, experiencing a tenfold increase in transaction volume over the past decade. Currently, "Internet plus" has become the business's most rapidly expanding area, influencing all aspects of the industry, including the retail network, international e-commerce, online services, and Internet banking. These sectors have emerged as a novel economic strength and catalyst for development. Network retail sales had a notable increase. Application-oriented institutions will certainly face new opportunities for transformation in the e-commerce programs they offer. Historically, all undergraduate institutions offered analogous e-commerce courses, and the content was somewhat obsolete. Simultaneously, instructional technologies and pedagogical methods were both outdated. Furthermore, there was an insufficient quantity of contemporary supporting materials for the instructional resources. In the realm of hiring, numerous e-commerce enterprises often prefer to recruit experienced workers rather than recent graduates. The fundamental operational capacity of e-commerce falls far short of business requirements, which is the underlying cause.

The challenges associated with practical education hinder the rapid and successful development of e-commerce. The idea aims to establish a school inside the e-commerce sector for students to engage in training, practical exercises, and foundational productive training. The reform of electronic commerce education aims to facilitate local economic growth, with a focus on skill development. Integrate the concept that "education benefits the organization." To meet the organization's requirements, the current teaching methodology must be revised, and the instructional materials must be aligned with the practical tasks employed by the enterprise. Establish a training center that fosters an entrepreneurial culture to enhance students' professional success. A fundamental element of advanced vocational education is the amalgamation of production and instruction. Motivate students to develop practical business skills for e-commerce enterprises, encompassing application expertise and the ability to operate an effective business platform (Wang, 2017).

Organizations may employ the American Customer Satisfaction (ACSI) evaluation model to evaluate and improve performance. The aforementioned six structural variables constitute the ACSI structural model. Consumer expectations, customer expectations, and perceived value serve as causal variables, while consumer complaints and customer loyalty function as outcome variables, with customer satisfaction being the ultimate objective variable. Each of the six structural variables consists of one or more observed variables, with data on these observed variables being obtained through empirical study.

The ACSI methodology may assess customer satisfaction across various business types, industries, and departments, yielding comparable results. It facilitates the comparison of customer satisfaction across different industries and among multiple customers using the same product.

The assessment of customer satisfaction can be broadened from engineering and environmental quality to encompass product and service quality (Tong, Jia, 2017).

The stock market relies heavily on a substantial volume of dynamic raw data. Moreover, evaluations of stock investments must include several factors, including the economic conditions at national, regional, and international levels, among others. Future investments will especially benefit from analysis of relevant past data. The stock market system is inherently difficult to predict effectively due to its complex data characteristics. Consequently, predicting stock investment returns is essential in the financial sector.

Data analytics and visualization techniques have been employed in stock market analysis. Predictive analytics depend on data processing due to its pre- and post-processing capabilities, which include transforming raw data. Its features encompass association analysis, data cleansing, and the identification of attribute descriptions, among others. Conversely, data visualization approaches provide intricate data representations, serving as one of the most efficacious methods for aiding investors in comprehending stock market fluctuations (Zreika, Hua, Wang, 2018).

ENTERING THE AGE OF MASS INFORMATION

Because of the growing demand for processing and analysis of large amounts of information, the capabilities of the conventional model of data analysis software have become inadequate. As a consequence of this, the formation of new data models, as well as the execution of data analysis and processing, are becoming increasingly important. This is due to the fact that redundancy will increase in tandem with the expansion of data quantities and the growth of data itself (Wang, Li, 2017). Every single one of the following four types of data-quality issues can be found in data throughout its entire lifecycle, whether it be through human contact, computing processes, or communication techniques. Each of these categories has the potential to introduce errors and produce abnormal data: The first four steps consist of the following process: data input and update, measurement, simplification, and integration.

The relational model of the database is an essential component in the construction of a relational database. Concepts and methods from the field of mathematics are utilized in order to manage the information contained within the database. With the advent of web2.0 in recent years, there has been a significant increase in the amount of data that is stored in the form of photographs, videos, and other sorts of data throughout the years. The data storage methods that are now in use have not been able to meet the standards that have been prescribed for the system. The distributed big data storage technology that NoSQL offers is frequently utilized in cloud computing due to the

fact that it is scalable so well. The use of cloud storage for unstructured data storage technology allows for the resolution of problems with unstructured data storage as well as the improvement of the quality of services related to unstructured data storage. Because of the rise of cloud computing, the relevance and utility of cloud databases are becoming more obvious. Cloud databases are becoming increasingly valuable.

The software, the operating system, and the operational network infrastructure are not accessible to customers who purchase software as a service (SaaS), but they are able to access the program itself. The concept of leasing customer service is the basis of a service concept; rather than offering the idea of purchasing customer service, the software service provider offers the idea of leasing customer service. The option that is more commonly used is to provide a collection of account passwords.

PaaS stands for "platform as a service." There are programs that users execute on the host. Consumers do not have any influence over the operating system, hardware, or operational network infrastructure; however, they do have the ability to modify the environment in which the application is being executed. At its core, a platform is often comprised of an application infrastructure.

Consumers that utilize infrastructure as a service (IaaS) make use of essential computer resources such as the power of their processors, the capacity of their storage devices, the components of their networks, and middleware. Customers are able to manage the operating system, storage capacity, applications that are currently running, and network components (such as load balancers, firewalls, and so on), but they are unable to handle the architecture of the cloud.

In the current era of the data explosion, the future of cloud databases is extremely promising and promises to be very bright. It is anticipated in the research paper that the storage requirements of businesses for structured data would continue to increase in the years to come. The load on the system varies when it comes to small-scale applications because of the redundant resources that the system is required to manage. On the other hand, when it comes to large-scale applications, not only are there significant data storage requirements, but there is also a dynamic demand for resources, which results in an increase or decrease in the number of virtual machines. It has been demonstrated that the standard relational database is incapable of meeting the criteria of NOSQL databases, which include the enormous data store capacity, cost-effectiveness, flexible scalability, and other requirements. Because it is able to more effectively address the problem of data storage in the distributed database of scalability considerations, the cloud database is an alternative that cannot be avoided. Cloud storage has helped to alleviate the pressure that has been produced by the current boom in data growth and has opened our eyes to potential future improvements in data storage (Zhang, Xu, 2017). Despite the fact that cloud storage is not yet capable of fully satisfying our need for storage, its launch has helped to ease the pressure.

CONCLUSION

Business data analytics is comprised of several components, one of which is the understanding of linkages and the application of these linkages to estimate the most likely outcomes of business choices. An example of the former is price elasticity, which can be utilized to either adjust the price of an existing product or to establish the starting price of a new product. In every given situation, the elasticity is calculated by utilizing the price-quantity connection while also taking into consideration other factors such as the degree of income, the season, geographical locations, and so on. With the exception of the fact that, in both economic theory and practice, the relationship

between price and quantity is always negative, the precise nature of this relationship can only be established via the careful examination of data. For the latter application of relationships, predicting, it is generally always the case that you will need to know the outcome of a choice for a key performance measure (KPM), such as revenue, sales, shipments, and so on. This is because predictions are based on the latter application of relationships. Just like the primary measurements, predictions are based on correlations between characteristics or variables in a data collection. Although they are tough to develop and of significant relevance, predictions are still dependent on these correlations.

Hierarchical clustering, as its name suggests, allows for the creation of a hierarchy of different groups of items. A wide range of continuous, ordinal, and nominal qualities are utilized in the measurement of the objects. It is necessary to encode the final two in the correct manner, generally by use dummy encoding. It is possible to make use of character features; nonetheless, it is imperative that they be coded appropriately.

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THE IMPACT OF INFORMATION MANAGEMENT IN CREATING A SECURE BUSINESS ENVIRONMENT

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ABSTRACT

Concerns regarding the safety of information have been around for as long as individuals have been interested in storing and gathering data for their own personal or professional purposes. The situation, however, has never been as severe as it is right now. Internet and other modern technologies have enabled us to arrange information in a way that was before impossible. Within the context of our continual pursuit of success, we make use of them as instruments that supply us with timely and precise observations. There has never been a time when the security of information has been more compromised as it is right now. We discuss the issues that this period presents, and we hope that the measures that are necessary to overcome the obstacles in order to achieve an ideal information security environment are presented in this paper. On the other hand, at the same time as artificial intelligence systems are becoming more advanced, they are also becoming more thoroughly interwoven into the lives of people and into crucial areas of the real world, such as infrastructure, banking, and national security. On the organizations that make use of these technologies as well as on society as a whole, these technologies have the potential to have both beneficial and bad effects.

Key words: *information, security, malware, cybercrime, technology.*

INTRODUCTION

In contemporary society, mobile technology has emerged as a significant subject of discourse and a critical problem concerning security. Mobile gadgets are ubiquitous. It is important to clarify that the word mobile devices include more than just cell phones, as many individuals erroneously perceive cell phones as the sole means of communication and everyday organization. Mobile gadgets encompass a wide array, including watches, eyewear, styluses, tablets, computers, and more.

From a broader perspective, these technologies exemplify a distinctive method of enhancing our lifestyle. They are a vital resource for reading emails, newspapers, and similar materials. They can regulate other devices, including televisions, DVD players, or Blu-ray players. Thus, they must have originated from Heaven due to their exceptional qualities. They are undeniably crucial and enabling; but, they simultaneously provide an unparalleled challenge to information security, particularly when linked to the enterprise aspect of company operations.

THE TERRAIN

Mobile devices present a significant problem in the realm of information security. Global enterprises utilize them to link their operations, facilitating the expedited attainment of their objectives. In this process, they share information essential to their tasks. This would have been optimal in a world characterized by equitable competition, devoid of those whose sole occupation is malevolence. However, we do not inhabit such a reality. Our environment is replete with many competitive opponents who may attempt to violate contracts or illicitly acquire information for use against you. Their primary focal point is mobile devices. If you are curious about the reason, we will present some statistics to elucidate the matter.

A 2013 poll indicated that over 93% of corporations connect mobile devices to their business networks, while about 67% permit personal devices access to enterprise networks. The data originates from 2013, indicating that these figures are likely substantially greater today. Even if they were not elevated, they would undoubtedly be more problematic, given the increasing scope of work conducted via cell phones, tablets, and similar devices; this trend shows no signs of abating (Bergman, 2013). To further elucidate the complexity of the situation, below are some revealing data points. The cited data indicates that up to 79% of organizations report security issues. The expenses incurred from these instances have surpassed \$500,000 for almost 52% of the enterprises, and 45% of those with fewer than 1000 employees had expenses within the \$100 level. Zero. Android is characterized as the most susceptible platform, accounting for almost 49% of vulnerabilities. However, what is crucial is the identification of the source of the problem. One would assume that cybercriminals are accountable for the majority of events. Your assertion is incorrect. In 66% of situations, employee negligence was the primary factor contributing to the issues. While firms endeavor to enhance their business strategies to outperform competitors, mobile devices, which should ideally facilitate this process, inadvertently expose the business to persistent security threats and, at times, complete failure (Bergman, 2013).

THE CHALLENGE

Information security is not a novel concept. Safeguarding corporate information has consistently been a fundamental aspect of establishing a robust corporation. However, locations for information storage have undergone significant transformations over time. There was an era when all information was recorded on paper and preserved in extensive archives, which were secured and protected from extraneous influences. Frequently, archives of that nature have been incinerated, obliterating all the information contained within. In other words, those were periods during which one had to confront such issues. That is not to imply that if your house burns today, your computer will remain unscathed. Your computer is no longer merely a tool for storing valuable information; it serves as a conduit for saving that information on more secure database servers, ensuring that even if your computer malfunctions, you can still retrieve your data from another computer or mobile device.

In the realm of enterprise information security, there is a specific aspect that warrants examination. Corporate servers contain not just employee information but also customer data. This complicates the matter at hand. To earn customer trust, organizations must assure clients that their personal information will be safeguarded and utilized solely for the company's purposes to enhance service delivery. This is more easily articulated than executed. Large corporations manage extensive data

sets from which they must extract critical insights to enhance their understanding of client needs. The majority of organizations offer several services via mobile applications, which are promoted as the future of the company-customer relationship (Urbas, Krone, 2006). While this may be accurate, it also presents a significant obstacle to orchestrate and execute such a work. The primary concern is that the organization needs to identify the suitable security solution to safeguard its servers against external threats. Every substantial and reputable organization likely employs experts who can assess all available possibilities and select the most suitable one. This constitutes the uncomplicated aspect of the assignment. The challenge is in instructing clients on safeguarding themselves while accessing their accounts via mobile devices. To do this, organizations must educate their clients on the utilization of more complicated passwords by implementing systems that reject weak passwords, such as the user's name or sequential numeric patterns like "12345...". However, a certain consumer does not only utilize the services of a single organization; individuals engage with services from diverse companies. Consequently, they will encounter the use of several apps that adopt disparate security approaches, complicating management of the issue.

Numerous applications installed on mobile devices are complimentary and mostly generate revenue through adverts. A significant number of cybercrime incidents are claimed to have been perpetrated using advertising channels. To circumvent this issue, numerous app developers offer a premium version of the same application to prevent security vulnerabilities or to eliminate inconveniences. This should not be underestimated, since statistics data from security firms indicate that in recent years, malware attacks on mobile devices have increased by almost 273%. Although more prevalent systems like Android and Windows are typically more susceptible to attacks, every Wi-Fi-enabled device remains vulnerable to cyber threats.

Numerous firms provide their staff with mobile devices equipped with particular software, enabling security personnel to remotely erase the device's storage in the event of theft, thereby safeguarding any potentially sensitive information contained inside. As always, the situation is not as favorable as it appears. A recent survey indicates that 28% of the workforce utilizes personal mobile devices, complicating their management by employers. There is a significant likelihood that these specific personnel will utilize social networking platforms like as Facebook, Twitter, or LinkedIn, hence increasing the device's vulnerability to external influence.

Thus far, we have focused on mobile gadgets themselves; however, what about the individual utilizing them? The human element constitutes a significant aspect of information security, as it is often challenging to anticipate when an employee may misuse a device or deliberately disclose information to external parties. For the company to function, it must grant certain employees access to critical information that might potentially be disclosed or sold, thereby enabling individuals to blackmail the company.

Ultimately, it is unequivocal that information security is an exceedingly intricate phenomenon that can determine the success or failure of a whole organization.

EMBRACING WIRELESS TECHNOLOGY WITH DILIGENCE

Wireless technology represents a significant advancement in enhancing connectivity and communication. The technology facilitates data transfer rates of up to 54 Mbps, significantly surpassing the HSDPA rate of approximately 14.4 Mbps. These figures are likely to fluctuate over time, influenced by the demands of governments and large corporations for enhanced Internet connectivity. This implies that when data transfer volume escalates, security problems will intensify. The accelerated transmission will also result in expedited data theft.

Data indicates that between 2007 and 2010, over 300,000 applications were generated. These applications generate revenues in the billion-dollar range, rendering the field highly desirable. Cybercriminals consistently seek methods to exploit the billions, utilizing wireless technologies for this purpose. From this perspective, mobile devices constitute a security minefield (Karen, Souppaya, Scarfone, 2013).

Surveys conducted by security firms, including McAfee and Trend Micro, indicate a 1200 percent increase in mobile malware. What is more troubling is that these figures are increasing on a monthly basis. Companies like as Google and Apple are diligently filtering applications in their app stores due to the proliferation of malware-laden programs that have infiltrated these platforms. Cybercriminals are exploiting them to extract information from mobile devices, a threat that can impact us all.

This does not imply that PCs and Macs are entirely impervious to potential attacks; however, modern operating systems are increasingly integrating mobile and stationary devices. Nonetheless, these devices are typically linked via home networks, which are considerably more secure than connections through public wireless or carrier networks. In such instances, the likelihood of a man-in-the-middle (MiTM) attack is significantly heightened (Karen, Souppaya, Scarfone, 2013). In summary, enhancing the security of our information necessitates collaborative efforts from all stakeholders, including ourselves, internet service providers, mobile device makers, and mobile operating system developers, among others.

DEVICES AND THE WORKPLACE

The most instances of cybercrime occur in the absence of adequate control over the equipment utilized. This holds true from a personal standpoint and, undoubtedly, entails greater risk from a company viewpoint. Exercising control over installations and the connectivity of devices to the Internet establishes a more robust foundation for advancing a secure environment, thereby aiding in the protection of our precious information.

There are numerous instances in which employees utilize their personal gadgets at the workplace. This phenomenon is referred to as BYOD, or Bring Your Own Devices. These technologies are utilized in professional settings as frequently as in domestic environments or other locations. Employees frequently relinquish their phones to their children, who, unaware of the potential presence of important information, may inadvertently click and download something that could jeopardize the data stored within the device. Company-issued devices are governed by stringent regulations about permissible installations and connectivity protocols, whereas BYOD devices are more susceptible to malware assaults due to the absence of such stringent guidelines for users regarding appropriate content and configurations.

Cybercriminals require a gadget to facilitate the theft of information from mobile devices. They predominantly utilize tiny applications to breach those gadgets. These apps are referred to as malware and spyware, both of which can be categorized as digital viruses, although many IT professionals often distinguish between the two.

Spyware, as the nomenclature implies, is utilized to surveil consumers. They are typically employed as keyloggers to acquire passwords and similar information.

Malware frequently inflicts significant damage to the device's operating system, including resetting it, erasing its storage, and similar actions. They pose significant risks, since we may lose critical information pertaining to our enterprises and transactions.

The threat is not exclusive to corporations and enterprises; information theft poses significant risks to people who save personal data on their mobile devices. Numerous instances have occurred where hackers have appropriated images of prominent individuals and subsequently extorted substantial amounts of money to prevent their disclosure. Since the inception of malware with the emergence of LibertyCrack in 2000, which impacted Palm OS devices by inducing a hard reset, these apps have significantly grown in tandem with advancements in mobile software and hardware (Karen, Souppaya, Scarfone, 2013).

Currently, malware such as DroidDream, NickySpy, and SMSZombie exhibit increased sophistication through various methods of targeting mobile devices.

Given the existence of millions of malware variants, we should anticipate an unparalleled failure in the domain of information security. However, such is not the situation. Indeed, significant network breaches have occurred in recent years, like the assault on Sony's PlayStation Network and, more recently, Yahoo's email system; yet, corporations are effectively safeguarding their customers' information. The manner in which we individually utilize our mobile devices presents a distinct issue. Companies that produce their own devices maintain greater control over them, enabling a stable and secure security environment. Charting our own course will undoubtedly subject us to greater risks, as has been consistently demonstrated.

THE FUTURE

Microsoft's appointment of Satya Nadella as CEO signified a profound transformation. Nadella's background in Microsoft's Cloud division indicated the company's recognition of the future potential in that sector. Other firms, such as Apple and Google (now Alphabet), were already significantly invested in cloud technology, and their mobile strategies were aligned accordingly. Although Microsoft expressed interest in that specific technology, the company maintained a conventional approach in the broader market, recognizing its longstanding dominance in the PC sector with its Windows operating system. The acquisition of Nokia's mobile division was perceived by many as the commencement of Microsoft's anticipated resurgence in the mobile market. Over time, we realized that this was incorrect, necessitating a revision of Microsoft's plans. The company opted to provide its productivity services across various platforms, including iOS and Android, rather than directly competing with mobile devices. Among the primary offerings were Office 365 and Microsoft's latest web browser, Edge.

You may wonder how this relates to information security. The pertinent issue is not Microsoft's challenges as an IT enterprise, but rather the significance of Cloud services. Office 365 is likely the most prevalent online office suite. It is closely linked to Azure, the company's innovative Cloud platform that is continually expanding. Nadella's motto of "Cloud first, mobile first" appears to be yielding positive results. However, what is crucial for us as users is the ongoing efforts of organizations to enhance information security. Their primary objective is to utilize mobile devices as a conduit for accessing data stored on servers, which are generally more secure than local data storage. This does not imply the cessation of information theft; nonetheless, it represents a significant advancement toward more secure data interchange. The matter of data storage on cloud servers undoubtedly raises privacy issues regarding data management; nonetheless, for the time being, we must place our trust in these substantial corporate entities to ensure the security of our information.

CONCLUSION

The domain of information security encompasses a wide array of intricate challenges that might occupy entire volumes. In summary, we have addressed the most significant concerns we encounter daily, which I believe we have accomplished. This statement indicates that users, particularly ordinary individuals, are caught in a conflict between cybercriminals and huge corporations, with no clear resolution anticipated. Currently, the majority of conflicts are resolved favorably for those users, and we sincerely anticipate this will culminate in a definitive victory, barring any unforeseen complications. Information is crucial in the contemporary economy. It constitutes the foundation for corporate processes, innovation, and competitive advantage. Consequently, safeguarding information is a crucial business purpose.

Nonetheless, information is susceptible to attacks. Cyberattacks, data breaches, and human errors may result in security incidents that cause data loss, operational disruptions, and reputational harm. Consequently, safeguarding information is a fundamental corporate purpose. Through the use of information security measures, enterprises may safeguard their data and attain their organizational objectives.

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BETWEEN GLOBAL DEPENDENCE AND LOCAL RESILIENCE: STRATEGIES FOR STRENGTHENING MONTENEGRO'S SUPPLY CHAIN

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Apstrakt

Ovaj rad ispituje kako mala ekonomija koja zavisi od uvoza, koristeći Crnu Goru kao studiju slučaja, može ojačati otpornost i održivost svojih lanaca snabdijevanja kroz diverzifikaciju izvora, lokalizaciju proizvodnje i digitalnu transformaciju. Primjenjuje se pristup kombinovanih metoda, zasnovan na SCOR i CSAR okvirima, kako bi se identifikovale strukturne ranjivosti i strateške mogućnosti u sektorima hrane, energije i logistike. Ključne oblasti fokusa uključuju ulogu Luke Bar, razvoj digitalne infrastrukture, revitalizaciju poljoprivrede i povezanost drumskog saobraćaja. Nalazi ukazuju na značaj integracije fleksibilnih i bezbjednih sistema, koje podržavaju institucionalne reforme i profesionalizacija sektora, kao ključne pretpostavke za otpornost lanaca snabdijevanja. Rad se završava setom preporuka politika prilagođenih crnogorskom kontekstu i ukazuje na pravce budućih istraživanja usmjerenih na mjerenje i operacionalizaciju otpornosti u malim ekonomijama. Doprinosi široj literaturi o strategiji lanaca snabdijevanja nudeći primijenjeni model za izgradnju otpornosti u otvorenim, uvozno zavisnim nacionalnim kontekstima.

Ključne riječi: *Otpornost lanca snabdijevanja, Crna Gora, SCOR model, digitalna transformacija, lokalna proizvodnja, logistička infrastruktura*

Abstract

This paper examines how a small, import-reliant economy, using Montenegro as a case study, can strengthen the resilience and sustainability of its supply chains through source diversification, production localisation, and digital transformation. It adopts a mixed-methods approach, grounded in the SCOR and CSAR frameworks, to identify structural vulnerabilities and strategic opportunities in the food, energy, and logistics sectors. Key focus areas include the role of the Port of Bar, digital infrastructure development, agricultural revitalisation, and road transport connectivity. The findings highlight the importance of integrating flexible and secure systems, supported by institutional reform and sectoral professionalisation, as critical enablers of supply chain resilience. The paper concludes with a set of policy recommendations tailored to the Montenegrin context and outlines directions for future research centred on measuring and operationalising resilience in small economies. It contributes to the broader literature on supply chain strategy by offering an applied model for resilience-building in open, import-dependent national contexts.

Keywords: *Supply chain resilience, Montenegro, SCOR model, digital transformation, local production, logistics infrastructure*

INTRODUCTION: THE IMPORT PARADOX OF A SMALL ECONOMY

How can the broader context of small economies' dependence on global supply chains be understood? This paper provides a detailed examination of the specific case of Montenegro. With a population of approximately 624,000¹ and limited domestic resources, Montenegro has maintained a high level of import dependence for decades, especially in the food and energy sectors (World Bank, 2024). While global market integration brings certain benefits, such as a wider range of products and more competitive prices, it simultaneously increases national vulnerability to external shocks. As noted by Gunasekaran, Lai and Cheng (2008), modern supply chains must be both flexible and responsive to meet the ever-changing demands of the market (Gunasekaran, Lai & Cheng, 2008, p. 550).

Furthermore, agility, flexibility and process robustness are highlighted as critical goals in supply chain improvement, particularly through the reengineering of order fulfilment processes in supply networks (Lin & Shaw, 1998, pp. 197–198). Similar demands for adaptability are emphasised in studies employing the DMAIC methodology in the electronics industry, which identified key inefficiencies such as excess transportation, waiting times and inventory. These were then addressed through precise and controlled interventions (Makinde et al., 2022, p. 26). According to Kot, Haque and Baloch (2020), in contemporary business environments, it is no longer individual firms that compete, but entire supply chains, where success depends on the ability to integrate and manage complex networks of relationships (Kot, Haque & Baloch, 2020, p. 88). This is further supported by Lin and Shaw (1998), who argue that order fulfilment process optimisation must be integrated across networks of autonomous or semi-autonomous business entities to achieve overall system agility (Lin & Shaw, 1998, pp. 199–201).

Identifying sources of uncertainty in decision-making is a vital step in redesigning supply chains to reduce vulnerability (Van der Vorst & Beulens, 2002, pp. 409–411). The COVID-19 pandemic and the crisis in Ukraine clearly illustrated the risks posed by such structural dependencies (UNDP, 2022).

Montenegro possesses several advantages that can serve as a foundation for building a more resilient supply system. These include a developed tourism sector, favourable climatic conditions for agriculture, and considerable potential for renewable energy, particularly hydro and solar energy. Nevertheless, limited domestic production capacities, a small market size and a continued import dependency make the Montenegrin economy highly susceptible to global disruptions.

Import dependency is not solely a matter of trade balance. It touches upon critical issues of food and energy security, national resilience and long-term sustainable development. In this context, it is important to note that implementing international quality standards, such as ISO 9000, can help

¹ Based on the 2023 census conducted by the Statistical Office of Montenegro (MONSTAT), the country's population totals 623,633, of whom 565,804 (90.73%) hold only Montenegrin citizenship, 10,691 (1.71%) hold dual citizenship of Montenegro and another country, 46,878 (7.52%) hold only the citizenship of another country, 240 (0.04%) are stateless, and 20 individuals did not declare their citizenship status (MONSTAT, 2024).

firms position themselves more effectively within supply chains by improving inventory management, supplier relations and customer communication (Casadesús & de Castro, 2005, pp. 349–353).²

Research suggests that supply chain management is becoming an increasingly important tool not only for optimising flows of goods and information, but also for enhancing national economies' resilience to global disruptions, particularly in the small and medium enterprise sector (Kot, Haque & Baloch, 2020, p. 89).

Beyond resilience, recent studies emphasise that companies should pursue strategies aimed at efficient resource use to reduce reliance on scarce natural resources while simultaneously gaining competitive advantage. The implementation of buffering³ and bridging⁴ strategies in supply chains has proven crucial for improving resource efficiency, with bridging strategies being the only ones directly contributing to competitive advantage (Kalaitzi et al., 2024, pp. 1–2). Literature increasingly highlights the need for resilience to replace efficiency as the primary objective of supply chain management. The study by Kiers et al. (2022) demonstrates that most global supply chains lacked sufficient resilience during the COVID-19 pandemic, revealing the need for strategic changes including supplier diversification, localisation and digital transformation as key risk management mechanisms (Kiers et al., 2022, pp. 2–5). This paper analyses Montenegro's current import dependence, identifies key challenges and explores potential pathways towards a more sustainable and resilient supply system.

This study seeks to answer several scientific questions:

1. How can small economies like Montenegro enhance their resilience to global trade disruptions through source diversification, development of domestic production capacities and supply chain digitalisation?
2. How can the SCOR model be applied to systematically improve the resilience, efficiency and sustainability of food and energy supply chains in Montenegro?
3. In light of the increasing importance of technological infrastructure, how can improvements in digital infrastructure and the integration of security standards further strengthen supply chain resilience in small and open economies such as Montenegro?
4. What role can domestic agriculture development and the establishment of commodity reserves play as key instruments for enhancing supply chain resilience and reducing import dependency?

² Although the study by Casadesús and de Castro (2005) was based on the ISO 9000 version available at that time, many of its findings remain relevant and applicable following the adoption of more recent iterations of the standard, such as ISO 9001:2015, as the core quality principles and their implications for supply chains have remained consistent.

³ Buffering strategies within supply chains refer to the deliberate accumulation of reserves, whether in the form of resources, raw materials, finished goods or production capacity, with the aim of mitigating the impact of uncertainty and potential disruptions. Such strategies contribute to organisational resilience by absorbing fluctuations in supply and demand (Tang, 2006a).

⁴ Bridging strategies within supply chains refer to the development of close collaborations and strategic partnerships with key stakeholders, such as suppliers and customers, through mechanisms such as information sharing, joint planning and integrated operations. The core objective of these strategies is to reduce uncertainty, increase flexibility and reinforce the overall resilience of the supply network in the face of disruptions (Tang, 2006a).

5. Given the strategic importance of the Port of Bar for the national and regional transport system, how might the development of the “Smart Port⁵” concept contribute to strengthening logistics resilience, reducing operational risks and improving energy efficiency in Montenegro’s supply system?

Iran provides a relevant example, where multi-layered strategies were developed under the pressure of politico-economic sanctions to enhance the resilience of its pharmaceutical supply chain. Nine main thematic areas were identified, including distribution mechanisation, strengthening local capabilities, reliance on electronic prescriptions and the integration of health information systems, supported by a strong role for the media and international cooperation (Bastani et al., 2021, pp. 2–9).

Beyond classical models, the Conceptual System Assessment and Reformulation (CSAR) approach developed by Perez-Franco et al. (2016) provides a relevant framework for understanding supply chain strategy development. The CSAR model enables comprehensive mapping, evaluation and reformulation of supply chain strategy as a conceptual system, with particular emphasis on the alignment between business strategy and operational activities (Perez-Franco et al., 2016, pp. 8–12). This approach also stresses the importance of internal strategic integration within the firm as a prerequisite for effective external collaboration with partners.

Concurrently, recent concepts from Industry 4.0⁶ underscore the importance of supply chain mapping as a key to achieving better visibility and resilience, while also enabling cleaner production and more efficient resource management (Mubarik et al., 2021).

Alongside the CSAR model and supply chain mapping, the Supply Chain Operations Reference (SCOR) model, developed by the Supply Chain Council, makes a significant contribution to supply chain analysis and improvement. The SCOR model standardises key supply chain processes across five core stages: planning, sourcing, making, delivering and returning, thereby enabling comprehensive performance measurement, process optimisation and better strategic alignment (Supply Chain Council, 2012).

The SCOR model provides a standardised framework for analysing and optimising supply chains through five primary processes: Planning, Sourcing, Making, Delivering and Returning (Supply Chain Council, 2012). Through the application of the SCOR model, Montenegro could systematically map and improve its supply chains, particularly in the food and energy sectors. In the planning phase, predictive models could be developed for more accurate forecasting of import and domestic production needs, reducing the risk of shortages and surpluses. In sourcing, the

⁵ The concept of the Smart Port refers to the integration of digital technologies into port management, including the use of the Internet of Things (IoT), blockchain, artificial intelligence, and automation, with the aim of optimising logistics operations, reducing cargo handling times, improving security, and increasing energy efficiency. A Smart Port enables real-time, transparent cargo tracking, intelligent operations planning, and improved decision-making based on data analytics (Heilig, Lalla-Ruiz and Voß, 2017).

⁶ Industry 4.0 is defined as the fourth industrial revolution, characterised by the digitalisation of manufacturing processes and the integration of advanced technologies, including the Internet of Things (IoT), artificial intelligence (AI), robotics, big data analytics, and cyber-physical systems. The primary aim is to establish smart factories that enable autonomous decision-making, improve operational efficiency, and enhance flexibility throughout supply chain networks. (Schwab, K. (2016). *The Fourth Industrial Revolution*. Geneva: World Economic Forum, pp. 15–35.)

SCOR approach would entail supplier diversification and the strengthening of local supply sources, thereby increasing resilience to global disruptions. In production, the focus would be on enhancing domestic agro-processing, adding value and reducing import dependency. Delivery optimisation through modernisation of logistics infrastructure would facilitate faster and more secure distribution of goods, while improvements in return processes and waste management, particularly in the food sector, would contribute to more sustainable supply chain operations. Applying the SCOR model would enable Montenegro to systematically enhance resilience, reduce operational losses and improve overall efficiency in critical supply sectors.

To successfully identify the causes of supply chain vulnerabilities, it is recommended to combine process mapping with cause-and-effect modelling (Van der Vorst & Beulens, 2002, pp. 421–422). Analytical tools include comparative analysis of macroeconomic indicators, thematic reports and databases such as FAOSTAT, Eurostat and the OECD's supply chain resilience tracking platform. This approach is further strengthened by the application of Fourth Industrial Revolution technologies, where supply chain mapping is used to reinforce resilience through improved visibility and monitoring of critical points (Mubarik et al., 2021, pp. 2–4).

Research indicates that aligning buffering strategies (e.g. product redesign, maintaining safety stock) with bridging approaches (e.g. developing supplier partnerships) can further mitigate risks associated with natural resource shortages, enhance resource efficiency and strengthen firms' long-term market positions (Kalaitzi et al., 2024, pp. 17–19).

In the current context, global supply chains are undergoing a profound transformation driven by rapid technological advancements, growing ecological imperatives and lessons learned from recent global disruptions (All Things Supply Chain, 2025). Artificial intelligence (AI) and automation are increasingly becoming pillars of modern supply chain management, enabling advanced demand forecasting, inventory optimisation and reduced human error in operations. Automation through autonomous mobile robots and robotic process automation (RPA) accelerates warehousing and transportation processes, while the use of AI tools supports faster and more accurate data-driven decision-making (All Things Supply Chain, 2025).

At the same time, sustainability is emerging as a key criterion for business competitiveness. The adoption of circular economy models, use of renewable materials and transition to environmentally friendly transportation are becoming not only regulatory requirements but also market imperatives. Transparency and accountability in managing environmental impact are increasingly determining consumer and investor loyalty. Digital supply networks (DSNs) are replacing traditional linear models, enabling comprehensive real-time data integration and enhancing resilience through flexible and adaptive structures. Full supply chain visibility and the capacity for dynamic response to disruptions are becoming strategic advantages in global competition (All Things Supply Chain, 2025). Supply chain resilience is further enhanced through supplier diversification and relocation of production closer to consumers, while the Internet of Things (IoT) facilitates device connectivity and real-time process optimisation. Combining IoT technology with advanced analytics and machine learning elevates the efficiency, safety and sustainability of supply chains. Increasing consumer expectations for product personalisation and rapid delivery are driving companies to adapt their production and logistics systems using technologies such as 3D printing and modular manufacturing (All Things Supply Chain, 2025). Thus, supply chain management is

entering a new phase in which companies are required to integrate innovation, resilience and sustainability simultaneously. The future of competitiveness will depend on the ability to adapt to these trends, where digitalisation, green initiatives and customer orientation serve as key levers for long-term success (All Things Supply Chain, 2025).

This paper places particular emphasis on analysing several key case studies that illustrate real-world challenges and opportunities within Montenegro's supply chain. The importance of forecast accuracy in supply chain planning is underscored by the findings of Fildes et al. (2009), who analysed more than 60,000 forecasts across four companies. Their research shows that while large forecast adjustments can improve accuracy, small adjustments often degrade it, with positive corrections more likely to introduce bias in demand estimation (Fildes et al., 2009, pp. 4–6). This highlights the need for a cautious and structured approach to forecast adaptation, especially in volatile market conditions such as those in Montenegro.

The first case study, conducted by UNDP (2022), focuses on circular economy development and opportunities to use local resources through sustainable production and consumption models. The second study, the SMART Balkans analysis (2025), examines cross-border flows of food and energy, identifying key vulnerability points and potential regional synergies. The third, a macroeconomic analysis by the World Bank (2024), provides a broader context for Montenegro's economic dependence, with particular emphasis on the structure of its imports and limited export capacities.

This paper offers an original contribution by analysing and applying modern conceptual frameworks such as the SCOR and CSAR models within the specific context of Montenegro's economy. This allows for a more comprehensive understanding of strategic supply chain management in Montenegro through the lens of resilience, sustainability and local production, with a particular focus on reducing import dependency.

By integrating these case studies with relevant quantitative data, this paper delivers a comprehensive assessment of the current state of Montenegro's supply chains. This synthesis provides a solid foundation for the formulation of concrete policy recommendations in subsequent chapters. To address the complexity of the identified challenges, the following chapter outlines the research methodology adopted to guide the systematic analysis of resilience-building strategies and development opportunities across critical sectors.

METHODOLOGY: AN ANALYTICAL FRAMEWORK FOR THE ANALYSIS OF VULNERABILITY AND RESILIENCE

The methodological framework of this study is grounded in a combination of qualitative and quantitative approaches, aimed at addressing the core scientific questions outlined in the introductory section. The research seeks to understand how small economies, such as Montenegro, can enhance supply chain resilience through the diversification of supply sources, the development of domestic production capacities, and the digitalisation of supply chains. Furthermore, it examines the theoretical applicability of the Supply Chain Operations Reference (SCOR) model for the systematic improvement of resilience, efficiency, and sustainability. In addition, the study explores

how advancements in digital infrastructure and the development of domestic agriculture may contribute to strengthening the national supply system.

This study employs a descriptive-analytical method, drawing on secondary data from internationally recognised sources, including the World Bank (2024), OECD (2023), UNDP (2022), Eurostat (2023), as well as scholarly literature in the field of supply chain management (e.g. Gunasekaran, Lai and Cheng, 2008, Van der Vorst and Beulens, 2002). The analysis encompassed the following dimensions: a comparative assessment of macroeconomic indicators, trade balances, and import–export structures; an examination of sector-specific vulnerabilities, with particular emphasis on the food and energy sectors; the identification of critical points of uncertainty within supply chains, categorised according to product, process, supply, and demand uncertainties (Van der Vorst and Beulens, 2002); and an analysis of the potential for localising production and establishing strategic commodity reserves.

Although the SCOR model is considered for its theoretical relevance to enhancing supply chain resilience and operational efficiency, it is not employed as the principal methodological instrument. Rather, it is Kalaitzi utilised as an analytical framework for evaluating the optimisation of planning, procurement, production, delivery, and return processes.

Qualitative analysis of selected case studies was also conducted, including the development of circular economy initiatives (UNDP, 2022) and cross-border trade in food and energy (SMART Balkans, 2025), to illustrate existing vulnerabilities and opportunities within Montenegro's supply system.

The study achieves data triangulation by integrating multiple data sources and analytical methods, thereby enhancing the validity and reliability of the findings. Comparative approaches were employed to benchmark Montenegro's practices against those of other small economies, with particular regard to resilience-building strategies based on diversification and localisation of supply sources.

The methodological framework further incorporates insights from contemporary literature on supply chain resilience strategies, including buffering, bridging, diversification, and localisation (Kalaitzi et al., 2024, Kiers et al., 2022); the role of digital transformation and cybersecurity in improving supply chain visibility and resilience (Mubarik et al., 2021, Urciuoli and Hintsa, 2017); and the interrelationship between domestic agricultural development, the formation of commodity reserves, and long-term supply security (Blečić, 2025, UNDP, 2022).

Building on this methodological foundation, the subsequent sections of the paper examine one of the key structural vulnerabilities, namely Montenegro's pronounced dependence on imports and its implications for national supply chain resilience.

IMPORT DEPENDENCE AND SUPPLY CHAIN VULNERABILITY: A STRUCTURAL CHALLENGE WITH PROFOUND IMPLICATIONS

Montenegro's dependence on imports represents one of the most significant obstacles to achieving economic stability and enhancing supply chain resilience. Over the past decade, the trade deficit

has steadily widened, with notable challenges in the food and energy sectors, both of which are strategic for societal welfare and economic functionality. According to data from the World Bank (2024), Montenegro imports over 80 per cent of its food requirements and nearly all fossil fuels, rendering the country highly vulnerable to global market disruptions.

Identifying the inherent characteristics of products, processes, supply, and demand as primary sources of uncertainty allows for the development of more precisely targeted resilience strategies (Van der Vorst and Beulens, 2002, pp. 424–426). These vulnerabilities were particularly evident during the COVID-19 pandemic, when international supply chains were severely disrupted, leading to shortages of essential goods and escalating prices. SMART Balkans (2025) reports that import restrictions and increased transportation costs during this period directly affected the availability of food and energy in Montenegro, thereby exposing the country's deep reliance on external markets and limited domestic production capacity. Similarly, following the outbreak of war in Ukraine, Montenegro was compelled to redirect its grain imports from traditional suppliers such as Serbia to Bulgaria, further illustrating its susceptibility to global supply chain disruptions (Forecast Report, 2022, p. 92).

Recent global developments have further highlighted these risks. As outlined in the March 2025 issue of *Macroeconomic Analyses and Trends* (MAT), the introduction of new United States tariffs on steel, aluminium, and Chinese-manufactured goods threatens the stability of global supply chains, with particularly adverse effects on the technology and automotive industries. These measures may carry broader repercussions for developing economies that are heavily reliant on international trade (Nikolić, 2025). In this context, Montenegro, as an import-dependent economy, is directly exposed to the consequences of global trade disruptions, particularly in industrial goods, technology, and energy. The imposition of such tariffs may result in increased prices for imported products, prolonged delivery times, and reduced availability of essential goods, disproportionately affecting smaller economies. Of particular concern are potential interruptions in the supply of technological components, motor vehicles, and industrial equipment, which may indirectly impact logistics, transport, and the wider Montenegrin economy. As a developing country highly dependent on tourism, trade, and construction, Montenegro remains vulnerable to cascading effects from distant external shocks, including rising costs, inflationary pressures, and diminished competitiveness. It is therefore imperative that small economies, such as Montenegro, invest continuously in supplier diversification, the development of domestic capacities, and the enhancement of supply chain resilience in order to mitigate the impacts of international disruptions.

At the March 2022 session of the Chamber of Commerce of Montenegro's Trade Association Board, it was confirmed that, although the supply chain had not been directly endangered, disruptions caused by the war in Ukraine led to increased prices of essential foodstuffs and energy. This further underscored the urgent need to develop domestic production capacities and to identify alternative sources of supply (PKCG, 2022).

According to Eurostat data (2023), Montenegro's import structure reveals that food, beverages, and tobacco products account for over 20 per cent of total imports, while energy commodities (including oil, gas, and electricity) comprise an additional 18 per cent. Such a structure implies that even relatively minor disruptions in global procurement channels may result in cascading

effects within the domestic economy, ranging from inflation and industrial stagnation to decreased supply security for the population. Moreover, Montenegro is significantly “importing inflation,” as food and energy prices, which dominate the import structure, are directly influenced by global price fluctuations (Forecast Report, 2022, pp. 92–93).

Montenegro also faces limited domestic capacity for storage and processing, which further exacerbates its vulnerability. In response to its significant dependence on oil and petroleum imports, the country initiated a process in 2025 to establish mandatory oil reserves, aiming to secure stocks sufficient for three months of national consumption by 2029, in alignment with European Union standards. The reconstruction of storage facilities at the Port of Bar enables the Hydrocarbons Administration and major importers to assume joint responsibility for forming strategic reserves, representing a key step towards enhancing the country’s energy security (SeeNews, 2025). The closure of Uniprom, the country’s largest industrial producer, has further reduced domestic production capacity and increased reliance on the services sector (Forecast Report, 2022, p. 92). As Stolze et al. (2007, pp. 5–7) observe, high operating costs, coupled with limited stakeholder collaboration in logistics and inventory decision-making, can constrain investment in research and development, ultimately compromising product quality and safety.

According to the UNDP (2022), Montenegro’s food and energy storage and distribution infrastructure remains unevenly developed, with rural areas particularly affected by shortages and irregular supply during crises. As demonstrated by Alzoubi and Yanamandra (2020, pp. 273–274), effective management of supply chain vulnerability requires a high degree of flexibility, visibility, and reliability, along with the efficient utilisation of information across the entire chain—factors that are critical for timely responses to disruptions. In this context, Kiers et al. (2022, pp. 6–10) developed a framework linking specific strategies, such as decentralisation, digitalisation, and dual sourcing⁷, with the competencies required for their implementation. Special emphasis is placed on the importance of managerial capital—defined as knowledge, social networks, and cognitive models—implying the need for ongoing human capital development in supply chain management. A similar conclusion is drawn by Kuei et al. (2002), who propose a two-phase model of supply chain strategy development based on quality management and technological advancement, with a particular focus on IT infrastructure and quality-based processes as key determinants of organisational efficiency. Gunasekaran, Lai, and Cheng (2008, pp. 551–552) stress that the development of a responsive supply chain (RSC) requires a combination of agility, partner integration, and the application of information technologies to ensure adaptability and cost efficiency.

As seen in other developing economies, supply chain disruptions in countries with weak political and institutional capacities are not solely triggered by large-scale catastrophic events, but also by

⁷ Dual sourcing is a procurement strategy within supply chain management wherein an organisation engages two independent suppliers for the same critical product or raw material, rather than relying on a single source. This approach mitigates the risk of supply disruptions, enhances operational flexibility, and strengthens the organisation’s bargaining power. In the event of disruptions with one supplier, such as delays, failures, or market shocks, the firm can maintain operational continuity by relying on the alternative source. Moreover, dual sourcing serves as a strategic investment in supply chain resilience, functioning as an insurance mechanism against future opportunism by providing access to competitive global markets, even if the alternative source is not actively utilised under normal conditions (Gehrig & Stenbacka, 2023).

chronic, recurring issues such as delivery delays, substandard raw material quality, informal economic practices, and corruption. These factors further complicate risk management and resilience strategies (Tukamuhabwa, Stevenson and Busby, 2017, pp. 487–493). Tukamuhabwa et al. (2015, pp. 5593–5594) also highlight that certain strategies—such as lean operations⁸ or single-supplier sourcing—while operationally efficient, may substantially reduce supply chain resilience by eliminating buffers and limiting response capacity in crisis situations.

In addition to infrastructural challenges, Montenegro's market dynamics are characterised by low levels of competition in the retail sector, particularly in food and chemical products. Beyond market concentration, further vulnerabilities exist within the national supply chain in the form of security threats, particularly in relation to transport and cybersecurity. As Urciuoli and Hintsa (2017, pp. 282–285) note, modern supply chains are increasingly exposed to risks such as cargo theft, document forgery, cyberattacks, and insider fraud, all of which necessitate the integration of security management into overarching supply chain strategies. Despite the lack of domestic production in certain segments, existing distribution structures play a crucial role in determining the availability and accessibility of goods. This market concentration may delay the entry of international retailers offering broader assortments and more competitive prices, thereby increasing long-term risks for consumers through higher costs and reduced choice (OECD, 2023; UNCTAD, 2023).

Moreover, the limited quality and availability of transport infrastructure and logistics services constitute an additional barrier to Montenegro's integration into regional and global supply chains. As highlighted by UNCTAD (2023, p. 12), developing countries often lag behind global standards in logistics connectivity, and the limited number of shipping providers, coupled with insufficient competition in the transport sector, further hinders market access.

Import dependence impacts not only the economic balance, but also the social stability and political autonomy of the country. In recent years, rising food and energy prices have contributed to increased social tensions, while geopolitical instability across Europe has underscored the strategic importance of diversifying and localising supply sources (OECD, 2023).

Building on lessons from the COVID-19 pandemic, further professionalisation of the supply chain workforce is recommended. Kiers et al. (2022, pp. 10–12) argue that the implementation of more resilient strategies requires a diverse set of competencies, including supplier relationship management, innovative sourcing methods, digital and technical skills, as well as interpersonal capabilities such as negotiation, strategic thinking, and change management. These competencies are essential for proactively managing uncertainty and reducing systemic vulnerabilities.

⁸ Lean initiatives denote a set of principles and practices designed to eliminate all forms of waste within production processes and supply chains, including excess inventory, unnecessary transportation, waiting times, and production defects, with the overarching objective of maximising value for the end customer. While lean strategies enhance efficiency and reduce operational costs, they may also undermine supply chain resilience by constraining buffer capacities and limiting the flexibility required to respond effectively to disruptions (Christopher and Peck, 2004).

Current data indicate that the average annual salary for supply chain analysts in Montenegro is approximately EUR 18,000, suggesting a relatively low degree of professionalisation and institutional recognition in this field. This finding highlights the urgent need for greater investment in skills development and capacity building in supply chain management (Jobicy, 2025).

This chapter clearly demonstrates that, despite its membership in international organisations and access to global markets, Montenegro must develop internal mechanisms to reduce dependency and build resilience—issues examined in greater detail in the following section.

An additional challenge in addressing supply chain vulnerabilities lies in the absence of integrated quality control mechanisms across the entire chain, from production to distribution. Moreover, research involving nearly 400 firms has shown that ISO 9000 certification significantly enhances supplier relationships (in 62 per cent of cases), reduces non-quality-related costs (80 per cent), and increases customer satisfaction (80 per cent), thereby directly improving supply chain performance and resilience (Casadesús and de Castro, 2005, pp. 353–354). As Jraisat and Sawalha (2013, pp. 194–207) argue, quality control (QC) must be holistically embedded across all stages of the supply chain, as it enables more effective risk management, stakeholder communication, and responsiveness to market changes. Their research on fruit and vegetable supply chains illustrates that QC is a critical factor in strengthening long-term stakeholder relationships and enhancing the resilience of export systems.

Although numerous vulnerabilities have been identified, Montenegro also possesses considerable opportunities to strengthen the resilience and self-sufficiency of its supply chains—a topic explored further in the next chapter.

OPPORTUNITIES FOR LOCALISATION AND SUSTAINABLE DEVELOPMENT: STRATEGIES FOR INTERNAL RESILIENCE AND RECOMMENDATIONS

Amid growing pressures on natural resources, strategies that simultaneously enhance resource efficiency and strengthen competitive advantage are gaining prominence. Firms that adopt both buffering and bridging approaches tend to achieve superior outcomes in terms of long-term sustainability and supply chain resilience (Kalaitzi et al., 2024, pp. 8–10).

Although Montenegro remains heavily reliant on imports, there exist realistic capacities and opportunities to enhance internal resilience through the development of domestic production and sustainable energy sources. With appropriate policy direction, targeted investment, and the strengthening of human capital, it is feasible to reduce import dependence, increase self-sufficiency, and improve the overall resilience of national supply chains.

Development of Local Agriculture: From Potential to Practice

In the current context of global disruptions, strengthening domestic agriculture and supporting local producers is not merely an economic goal but a strategic imperative for supply chain sustainability. By developing commodity reserves based on domestic resources, Montenegro can simultaneously reduce import dependence, enhance supply security and stabilise market prices, which is particularly relevant amid global trade instability (Blečić, 2025).

Small states such as Montenegro face limited internal resources, a high degree of import dependence and weak bargaining power in international markets. This makes them especially vulnerable to global disruptions such as wars, trade conflicts, pandemics and climate change. In times of crisis, major powers prioritise their own interests, while small economies are left without access to critical goods or face inflated prices and delayed deliveries. By developing domestic production and establishing commodity reserves, small countries can reduce such dependence, increase food and economic security, stabilise prices, protect their populations from shortages and, ultimately, strengthen supply chain resilience. For Montenegro, this is not merely an issue of economic development, but of national survival and stability in increasingly turbulent global conditions.

Agriculture in Montenegro possesses significant but underutilised potential. Although approximately 38 per cent of the country's land area is classified as agricultural land, active cultivation remains well below capacity (FAO, 2024). Most producers are smallholder family farms facing challenges such as low yields, limited market access and a lack of modern technology.

The literature on supply chains in developing countries underscores the importance of enabling direct market access for producers, as this reduces reliance on intermediaries and enhances profitability. Sodhi and Tang (2013) discuss digital approaches that link small-scale producers to markets in a way that reduces transaction costs and improves earnings in resource-constrained settings (Sodhi and Tang, 2013). According to CE-HUB (n.d.), key challenges include weak institutional support, land fragmentation, low mechanisation and poor integration between production and processing. Investment in storage, distribution and processing infrastructure, as well as digitalisation of agricultural production, are identified as priority measures for revitalising the sector. Digital solutions such as the e-Kanban system⁹ have proven effective in electronic manufacturing contexts, enabling automatic resource replenishment and increasing efficiency (Junior & Godinho Filho, 2010; Makinde et al., 2022, p. 2). Technologies such as SMS services for market prices and agricultural advice have been beneficial in increasing farmer income in India (e.g. Reuters Market Light), though findings on income impact vary (Fafchamps & Minten, 2012). The systematic use of digital tools to support human judgement in demand forecasting may significantly enhance performance. Fildes et al. propose structured error bootstrapping¹⁰ models to address systematic bias and inefficiency, noting that positive forecast adjustments tend to be overly optimistic, while negative adjustments generally improve accuracy (Fildes et al., 2009, pp. 13–17).

Montenegro shows a lack of specialisation in many agricultural products and suffers from low price competitiveness compared to regional neighbours and EU member states. Moreover, the country is a net importer of agri-food products, with a trade deficit of €250–300 million annually.

⁹ Electronic Kanban (e-Kanban) is a digital adaptation of the traditional Kanban system, which uses electronic signals in place of physical cards to automate inventory tracking and resource replenishment. This system improves speed, transparency, and efficiency within production and logistics processes, leading to reduced inventory levels, shorter lead times, and enhanced control over material flows (Jarupathirun et al., 2009, pp. 55.1–55.3).

¹⁰ Error bootstrapping u kontekstu prognoziranja označava tehniku u kojoj se sistematske greške (pristrasnosti) iz prethodnih predviđanja analiziraju i koriste za automatsko podešavanje budućih prognoza. Cilj ove metode je da se identifikuju obrasci grešaka i da se nove prognoze koriguju u skladu s njima, čime se poboljšava ukupna tačnost predviđanja i smanjuje učestalost ponavljajućih pristrasnosti u procjenama potražnje (Proppe i Reiher, 2017, str. 3297–3298).

While agricultural land constitutes 37.4 per cent of the national territory, its potential remains underutilised, with some 33,000 hectares still uncultivated (Jovanović, 2024).

These data point to serious bottlenecks in the development of a sustainable and resilient supply chain in Montenegro. The absence of product specialisation and weak market competitiveness reduce the agricultural sector's capacity to ensure stable and high-quality supply, while the large share of uncultivated land represents a missed opportunity to strengthen domestic supply sources. From a resilience-building perspective, the development of specialised production chains, competitiveness improvement and activation of idle land should be strategic priorities. These measures would reduce import dependence, diversify supply sources and increase the resilience of Montenegro's economy to global shocks.

The Strategy for the Development of Agriculture and Rural Areas (2023) outlines measures to strengthen contractual supply chains, increasing market security for producers and supply stability for processors and retailers. Sectoral operational programmes for fruit, vegetables, meat and dairy aim to enhance planning, quality promotion and collective market access. Emphasis is placed on local markets and web platforms that promote and sell domestic products, thereby improving food availability to Montenegrin consumers. The strategy also highlights investment in on-farm processing and the development of small local processing capacities, reducing waste and adding value to agricultural products. The development of short supply chains, with a minimal number of intermediaries between producers and consumers, is recognised as essential to increasing producer income and reducing delivery times.

The UNDP (2022) reports that pilot projects in organic production and short supply chains have yielded positive results in some rural communities. Initiatives connecting local producers with the tourism sector – as the largest food consumer – hold potential for stimulating the local economy, reducing imports and promoting sustainable practices.

Further challenges identified in the strategy include weak vertical integration between primary agriculture and processing, low market orientation and insufficient use of tourism demand for marketing local produce. To strengthen supply chain resilience, the strategy stresses the need for land consolidation, the establishment of quality control systems and alignment with HACCP¹¹ and ISO standards. Strengthening institutional support for agriculture, including a more robust agricultural administration and increased investment in rural development, is seen as a key precondition for the sector's long-term progress (Jovanović, 2024).

Sustainable Energy and Logistical Solutions: The Port of Bar as a Cornerstone of Supply Chain Resilience

Montenegro's energy sector is characterised by a high dependence on fossil fuels, particularly in transport and industry. However, the country possesses considerable potential in renewable energy generation, notably in hydroelectric, solar, and wind sources. According to IRENA (2023),

¹¹ HACCP (Hazard Analysis and Critical Control Points) predstavlja sistematski preventivni pristup sigurnosti hrane, koji identifikuje, procenjuje i kontroliše potencijalne biološke, hemijske i fizičke opasnosti tokom svih faza proizvodnje, prerade i distribucije hrane, s ciljem obezbeđenja njene sigurnosti za krajnjeg potrošača (FAO/WHO, 2003, str. 3)

Montenegro has the technical potential to generate over 2,000 GWh annually from solar energy, which could significantly reduce its reliance on imports.

Moreover, green energy transition has been identified as a strategic necessity for Montenegro's economic and environmental resilience. The national framework envisions increased energy efficiency and decarbonisation as pillars of long-term sustainability (Kot, Haque & Baloch, 2020).

Through its Energy Strategy to 2030, the Government of Montenegro has outlined plans to increase the share of renewables in total consumption, alongside market liberalisation and incentives for private investment (Ministry of Capital Investments, 2021). However, the achievement of these objectives faces challenges related to bureaucracy, access to financing, and local resistance to large infrastructure projects.

In addition to the challenges of energy production, the development of reliable logistics infrastructure is essential for a sustainable transition, ensuring the secure and efficient distribution of resources. Logistics systems – particularly maritime terminals – serve as vital links between production capacities and end users, with their efficiency directly influencing the resilience of the energy sector and broader economic stability (OECD, 2023, p. 82). In this context, the Port of Bar warrants particular attention as Montenegro's strategic logistical hub, whose performance is critical to the functioning of national and regional supply chains.

As Montenegro's largest and most important seaport, the Port of Bar holds a strategic location on the Adriatic and is directly connected to the rail and road networks (the Bar–Belgrade railway and key arterial roads), making it a crucial infrastructural point for supply chains (UNCTAD, 2023, p. 42). However, according to UNCTAD's analysis, despite its geographic advantages, the port's logistics capacities are constrained by outdated infrastructure, low levels of digitalisation, and operational inefficiencies (UNCTAD, 2023, p. 45).

Capacity limitations at the Port of Bar increase cargo handling times and logistics costs substantially, thereby amplifying the vulnerability of Montenegro's supply chain, especially in times of crisis when alternative routes are limited (OECD, 2023, pp. 78–80). OECD findings indicate that countries that have developed multimodal transport systems with efficient seaports demonstrated greater resilience during the COVID-19 pandemic and subsequent geopolitical disruptions (OECD, 2023, p. 82).

In the context of sustainable energy and logistics development, the modernisation and digital transformation of the Port of Bar constitute key levers for enhancing resilience. The introduction of intelligent management systems (Smart Port concept) and blockchain-enabled cargo tracking could significantly reduce handling times, improve traceability, and facilitate more rapid responses to supply disruptions (Mubarik et al., 2021, pp. 4–5).

Academic literature confirms that Smart Port implementation is a critical pathway for modernising logistics capacity and improving the resilience and sustainability of maritime ports. According to Belmoukari et al. (2023, pp. 4–6), a Smart Port encompasses seven core domains: operations, infrastructure and technology, energy, environmental protection, security, human resources, and social responsibility. These enable intelligent resource management and improve overall port

performance. The transformation from traditional to Smart Port systems leads to lower operational costs, enhanced cargo handling efficiency, improved traceability, and increased resilience to global supply chain disruptions (Belmoukari et al., 2023, pp. 7–8).

Developing a Smart Port model at Bar could yield multiple benefits: faster cargo processing, reduced logistics costs, greater energy efficiency through smart grids and integration of renewables, as well as improved transport security. Furthermore, digital port transformation allows for the automation of key operations, use of Internet of Things (IoT) technology for real-time monitoring and optimisation, and implementation of blockchain for secure, transparent cargo flow management (Karas, 2020, pp. 407–409). These innovations enable quicker throughput, reduced emissions, energy optimisation, and more effective risk management. The application of advanced analytics and predictive modelling in smart ports further contributes to strengthening supply chain resilience against global shocks (Karas, 2020, pp. 410–411).

Accordingly, the digitalisation of the Port of Bar in line with Smart Port principles would not only improve operational efficiency but also substantially enhance the sustainability and long-term resilience of Montenegro's logistics system. Moreover, modern Smart Port frameworks emphasise the role of servitisation¹² and value co-creation among all logistics stakeholders, including port operators, freight forwarders, carriers, and end-users. Rather than focusing solely on cargo handling, the Smart Port concept integrates advanced services based on real-time analytics, data sharing, and adaptive logistics solutions (Heilig et al., 2017). Such transformation enhances port flexibility, reduces transit times, improves user experience, and strengthens resilience to supply chain disruptions. In the case of the Port of Bar, adopting this approach could enhance regional competitiveness and attract international partners.

Although the Port of Bar is a strategic maritime logistics point, Montenegro's internal transport connectivity remains inadequate. The country currently has only one completed motorway section – Bar to Boljare – approximately 41 km in length, linking Podgorica and Kolašin. Limited road capacity increases costs and prolongs delivery times, especially for food and energy goods. The planned construction of the full motorway route towards the Serbian border and on to Central Europe is a critical prerequisite for the development of a competitive and resilient supply chain (Government of Montenegro, 2024).

Beyond technical upgrades, institutional reform is also essential to simplify customs and administrative procedures, as complex formalities further delay deliveries and reduce port competitiveness (World Bank, 2024, pp. 56–57). According to the World Bank Logistics Performance Index, streamlining port procedures can reduce total transport time by up to 20 per cent and logistics costs by as much as 15 per cent (World Bank, 2024, p. 59). Thus, strategic investment in the modernisation of Bar's capacities, adoption of digital technologies, and improvement of the regulatory framework form the basis for reinforcing Montenegro's supply system in the face of increasingly frequent global disruptions.

¹² Servitization refers to the innovation of an organisation's capabilities and processes to better create mutual value through a shift from selling products to selling integrated Product-Service Systems (Baines et al., 2009, p. 547).

In addition to optimising logistics nodes such as the Port of Bar, the development of decentralised energy systems represents a complementary pathway for strengthening Montenegro's resilience. Promoting household solar panels, microgrids, and energy-efficient buildings offers a more sustainable and rapidly deployable model. According to OECD (2023), localised solutions can enhance energy security, stabilise prices, and reduce environmental impact.

In addition to the decentralisation of physical systems, the decentralisation and dissemination of knowledge through education and forecast error feedback can also improve planning, as suggested by Fildes et al. (2009), who emphasise the need for structured systems to record reasons for forecast adjustments and thereby reduce unnecessary and harmful interventions (Fildes et al., 2009, pp. 18–19).

Nevertheless, the implementation of digital infrastructure also brings security challenges. As shown in the Iranian case, mechanised distribution not only enables medicine availability tracking but also significantly reduces the number of intermediaries and improves transparency in relation to costs and consumption (Bastani et al., 2021, p. 7). Research by Urciuoli and Hintsa (2017) demonstrates that cybersecurity has become a key concern in supply chains, as attacks on information systems may cause severe operational and logistical disruptions. IT systems, while engineered for efficiency, often increase exposure to digital threats, especially when outsourced without adequate control over physical infrastructure security (Urciuoli & Hintsa, 2017, pp. 286–288).

Recommendations: Strategic Directions for Strengthening Resilience and Sustainability

Based on the challenges and opportunities identified in the previous sections, this paper proposes a set of concrete recommendations aimed at enhancing the resilience and sustainability of Montenegro's supply chain. All recommendations are grounded in the sources already analysed in the study, particularly UNDP (2022), OECD (2023) and FAO (2024), and are formulated as best practices derived from international supply chain resilience strategies, tailored to the Montenegrin context.

Supply source diversification: Montenegro must reduce its dependence on a limited number of foreign suppliers, especially in the food and energy sectors. As Milovanović (2018) highlights, while globalisation offers opportunities to expand and optimise supply chains, it simultaneously increases their complexity, extends lead times and generates additional risks, thus underscoring the need to design flexible and competitive supply networks that are resilient to global shocks (Milovanović, 2018, pp. 4–5). Based on the reviewed literature (OECD, 2023), it is recommended to establish more flexible and decentralised supply networks that include a broader range of sources, including regional partners and domestic capacities.

Supply chain resilience management requires continuous monitoring of the interdependencies among threats, strategies and outcomes, recognising that measures designed to mitigate one risk may create new vulnerabilities or shift the risk to other parts of the supply network (Tukamuhabwa, Stevenson and Busby, 2017, pp. 494–496). According to Tukamuhabwa et al. (2015), strategies aimed at enhancing resilience, such as flexibility, collaboration and redundant capacities, can be synergistic but may also conflict if not carefully aligned. For instance, excessive redundancy may

increase costs, while collaboration may compromise flexibility or result in the leakage of sensitive information (Tukamuhabwa et al., 2015, pp. 5605–5606).

Recommended measures (based on literature analysis):

- Promote bilateral and regional trade agreements in strategically important sectors.
- Establish strategic reserves of essential goods to cushion supply shocks.
- Develop mechanisms for rapid response in emergency situations, in line with OECD (2023) guidance.

Additionally, according to the model proposed by Mishra et al. (2016), companies can choose between two key strategies for supply chain risk management: buffering (building reserves, diversifying sources) and bridging (intensified collaboration and information sharing with partners). Kuei et al. (2002) also emphasise that successful strategies must include not only technical innovations but also the development of a "quality culture" among all supply chain actors, in order to achieve long-term resilience and synergy among suppliers (Kuei et al., 2002). Empirical evidence confirms that firms implementing ISO 9000 standards report improvements in key segments of the chain, including reduced delivery times and enhanced coordination with suppliers and customers, demonstrating that systematic quality management has a direct positive impact on SCM performance (Casadesús and de Castro, 2005, pp. 351–355). However, more recent research suggests that relying solely on standardised approaches such as ISO 9000 may be insufficient in complex and dynamic supply chain environments. Jahre (2017) finds that organisations, particularly in the humanitarian sector, are increasingly adopting combined risk mitigation strategies, including flexible contracts, collaboration with local partners, dynamic planning and digital tools, to achieve higher levels of resilience and adaptability (Jahre, 2017).

It is especially important to emphasise that, according to Alzoubi and Yanamandra (2020), information-sharing strategies within agile supply chains act as a key mediator in improving overall performance, enabling firms to respond more effectively to market changes and turbulence (Alzoubi and Yanamandra, 2020, pp. 273–275).

Support for local producers: Based on UNDP (2022) and CE-HUB (n.d.), local production is a fundamental pillar of a resilient supply system. UNDP explicitly highlights the importance of creating an enabling institutional environment through education, subsidies and market development. Sodhi and Tang (2013) also emphasise the importance of reducing transaction and search costs through digital platforms that connect micro-entrepreneurs and consumers, thereby expanding the value chain and facilitating distribution in infrastructure-poor communities (Sodhi and Tang, 2013).

Recommended measures (formulated based on international practice, adapted to Montenegro):

- Increase public subsidies for small and medium-sized agricultural producers.
- Develop digital platforms for the direct sale of local products and the promotion of short supply chains.

- Establish mechanisms that encourage the use of local food in public institutions (e.g., schools, hospitals), in line with practices endorsed by UNDP in comparable transitional countries.

Infrastructure investment: FAO (2024) identifies inadequate logistics infrastructure as a key driver of food supply chain losses, particularly in countries with socio-economic profiles similar to Montenegro. Based on these sources, investments in modern and sustainable logistics infrastructure are recommended. Organisational capabilities, such as supplier and customer relationship management and internal logistics improvement, significantly influence overall supply chain performance. Empirical data from Dwitaa et al. (2021) show that effective implementation of SCM strategies directly enhances company performance by strengthening organisational capacities (Dwitaa et al., 2021, p. 164). Moreover, integrating marketing and supply chain strategies at four key levels, corporate, customer, supplier and chain-wide, improves alignment between business objectives and value creation for end-users and shareholders alike (Jüttner, Christopher and Godsell, 2010, pp. 111–113).

Strategic liberalisation of transport services is also recommended to increase competition and reduce distribution costs. UNCTAD (2023) notes that countries with five or more competitors in the maritime sector experience transport costs up to 30 per cent lower, making them more competitive in regional and global markets (UNCTAD, 2023, p. 16).

Similar to findings from Indonesia, the study by Sukati et al. (2012) indicates that supply chain management strategies, such as lean, agile and hybrid models, have limited impact on performance unless embedded in concrete practices such as strategic supplier partnerships, customer relationships and information sharing. These three components were identified as the most significant performance determinants (Sukati et al., 2012, pp. 229–230). The authors conclude that desired outcomes can only be achieved if strategies are effectively translated into operational practices, thereby reinforcing the recommendations proposed in this paper.

Recommended measures (based on literature analysis):

- Modernise food storage and processing capacities.
- Improve transport infrastructure (roads, railways) to reduce distribution costs.
- Invest in the construction of cold storage and regional distribution centres, particularly in rural areas (FAO, 2024).

Research shows that linking agile practices with information-sharing strategies significantly improves the operational and competitive performance of supply chains (Alzoubi and Yanamandra, 2020, pp. 276–278).

Digital solutions implementation: OECD (2023) highlights that digital transformation can substantially improve supply chain efficiency, transparency and security. Similarly, Mubarik et al. (2021) note that integrating technologies such as supply chain mapping and real-time visibility enables firms to identify vulnerabilities more quickly and respond more effectively to disruptions. In this context, blockchain technologies have emerged as a key tool for mapping and integrating

supply chains, allowing firms to visualise and track product flows in real-time across all stages, from raw material suppliers to end consumers (Khan et al., 2022, pp. 3743–3745).

A regional example is Coca-Cola HBC Serbia and Montenegro, which demonstrates that implementing digital solutions such as Blue Yonder, Sim Cad and Vision Picking, alongside logistics automation and optimisation, significantly enhances efficiency and competitiveness in Southeast European markets (Stančik, 2024). This technology enhances traceability and accountability, contributing to supply sustainability and resilience, especially in complex, multilayered networks. Based on this source, the following measures are proposed to make digital tools accessible and useful in the Montenegrin context. Research from PT Pos Indonesia finds that digital SCM integration improves supplier and customer relationship management, resource allocation and ultimately results in faster delivery and greater customer satisfaction (Dwitaa et al., 2021, pp. 157–158).

Recommended measures (based on OECD best practice, adapted to the local context):

- Introduce digital tools for tracking product origin and movement (e.g., blockchain technology).
- Support the digital transformation of small producers through training and technology subsidies.
- Develop a national database for rapid crisis response and decision-making.

Standardising data exchange among supply chain actors can further increase efficiency and reduce errors. GS1 standards¹³, which enable unified and harmonised storage and transmission of information among partners, demonstrate that applying a common logistics language significantly improves product tracking, reduces administrative costs and enhances security, especially in retail, healthcare and transport. Standardised systems allow for precise tracking of products across all stages of the supply chain, which is crucial for achieving resilience and sustainability in complex market conditions (GS1, 2025).

Similarly, the study by Qrunfleh and Tarafdar (2014) demonstrates that aligning information systems with supply chain strategies, such as lean and agile, significantly improves overall chain and firm performance, with efficiency and flexibility-focused information systems playing a critical role in achieving operational agility and resilience (Qrunfleh and Tarafdar, 2014).

In line with the above recommendations, the study by Khan et al. (2022) confirms that while blockchain may not have a direct impact on supply chain sustainability, its implementation indirectly enhances sustainability through improved supply chain mapping and integration. Furthermore, as noted by Zamarripa (2012), the use of information technologies for optimising and visualising supply chain flows enables not only improved performance but also better decision-making through scenario simulations. The author suggests the integration of so-called

¹³ GS1 standards regulate the standardised exchange of data and product traceability in supply chains. Unlike ISO standards, which focus on quality management and internal organisational processes, GS1 standards provide globally harmonised frameworks for identification, data capture, and data sharing among supply chain partners, thereby enabling interoperability, efficiency, and visibility in complex logistical environments (GS1 AISBL, 2021).

model-based decision support systems¹⁴, which enhance preparedness for supply chain disruptions by developing digital twins that simulate the behaviour of complex supply systems in real-time (Zamarripa, 2012). Clearly mapped chains facilitate risk identification and mitigation of unsustainable practices (Khan et al., 2022, pp. 3746–3750). Similarly, Carvalho et al. (2012) argue that supply chain resilience depends on balancing capabilities and vulnerabilities through sound chain design, where connectivity, flexibility and visibility among partners play key roles in mitigating the impact of disruptions (Carvalho et al., 2012, pp. 330–331). A well-designed chain, therefore, is one that is interconnected, adaptable and transparent, qualities that facilitate more effective crisis management.

It is particularly important to develop integrated processes that align marketing and SCM activities around a common objective, delivering value to the customer through fast, flexible and differentiated supply chains, as outlined in the framework by Jüttner et al. (2010, pp. 114–115).

In addition to implementing digital tools for traceability, it is essential to integrate security standards into the digitalisation process. Urciuoli and Hintsä (2017) stress the importance of establishing shared incident databases, improving awareness of criminal trends and strengthening partner verification systems to prevent fraud and abuse in complex supply networks (Urciuoli and Hintsä, 2017, pp. 285–287).

The proposed measures provide a starting point for further exploration of their implications for practical decision-making, which will be the focus of the following discussion.

RESEARCH IMPLICATIONS

Building upon the conducted research, this paper addresses critical scholarly questions, informed by contemporary literature, case studies, and data from relevant international institutions.

Resilience of Small Economies through Diversification, Production Development, and Digitalisation – Small, import-dependent economies such as Montenegro can enhance their resilience to global trade disruptions by diversifying supply sources, expanding domestic production capacities, and digitally transforming supply chains. These factors constitute the foundation of modern resilience, enabling a reduction in reliance on volatile markets, strengthening the domestic economy, and supporting more effective risk management (Gunasekaran, Lai and Cheng, 2008; Kot, Haque and Baloch, 2020; Kiers et al., 2022; Mubarik et al., 2021). The introduction of flexible, agile, and integrated supply networks has become crucial for enterprises and governments seeking stability during unpredictable shocks such as pandemics, geopolitical conflicts, and climate-related challenges.

Application of the SCOR Model to Enhance Resilience and Efficiency – The SCOR model facilitates the systematic mapping, identification of critical points, and optimisation of processes

¹⁴ Model-based decision support systems are information systems that employ mathematical models, simulations, and optimisation tools to assist decision-making in complex, dynamic environments, such as supply chains. These systems facilitate the creation of digital replicas of physical processes, commonly referred to as digital twins, which can be used to analyse various scenarios, predict performance outcomes, and optimise responses to disruptions and risks (Zamarripa et al., 2012, pp. 178–179).

in Montenegro's food and energy sectors. The standardised stages – planning, sourcing, production, delivery, and return – ease performance measurement and strategic alignment (Supply Chain Council, 2012). The implementation of the SCOR model allows for accurate demand forecasting, diversification of supply sources, development of domestic processing, and optimisation of logistics (Kalaitzi et al., 2024; Van der Vorst and Beulens, 2002). In Montenegro, the SCOR model could specifically support the development of the dairy sector, strengthening domestic production and improving supply security (Fildes et al., 2009).

Role of Digital Infrastructure and Security Standards in Supply Chain Resilience – Digital transformation, accompanied by the implementation of security standards, significantly contributes to strengthening supply chain resilience. Increased visibility, traceability, and predictive analytics enable earlier identification of issues, while cybersecurity has become a critical component of supply chain efficiency (Urciuoli and Hintsa, 2017; Mubarik et al., 2021; Kiers et al., 2022). The adoption of GS1 standards and blockchain technology enables secure data exchange and real-time tracking of goods, which is particularly important in complex, multilayered supply networks (Khan et al., 2022; Zamarripa, 2012).

Development of Domestic Agriculture and Strategic Reserves as Pillars of Internal Resilience – Strengthening local agriculture and establishing strategic reserves are essential to reducing import dependence and building resilience. Investments in infrastructure, digital tools, and vertical integration of agriculture enhance the self-sufficiency of the supply system (UNDP, 2022; Jovanović, 2024). Strategic reserves based on domestic resources help stabilise markets during crises, while digital support for rural producers facilitates direct product placement and reduces losses (Fildes et al., 2009).

The Port of Bar and the Smart Port Concept as a Strategic Avenue for Transport Resilience – The development of the Smart Port concept at the Port of Bar constitutes a critical strategic direction for enhancing the resilience of Montenegro's transport system and improving its energy efficiency. Through the integration of digital technologies, automation, and sustainable energy solutions, ports can enhance traceability, reduce operational risks, and improve the overall efficiency of logistics processes (Belmoukari et al., 2023; Karas, 2020; Mubarik et al., 2021). The servitisation of ports, along with IoT and blockchain technologies, supported by predictive analytics, enables more efficient operations, faster crisis response, and better integration into regional and global markets (Heilig et al., 2017; OECD, 2023; UNCTAD, 2023).

Based on the findings presented in this paper, several strategic directions emerge that could enhance the resilience and sustainability of Montenegro's supply system. Rather than partial interventions, the results point to the need for a structural approach to resilience, grounded in localisation, digitalisation, and institutional integration.

First and foremost, the paper confirms that resilience must become a central component of all economic and development policies. The current vulnerability is driven not only by a high level of import dependence, but also by insufficient diversification of supply sources and limited domestic capacities (World Bank, 2024; UNDP, 2022). Market diversification, development of internal production capacities, and digital integration have been identified as three key pillars of resilience (Gunasekaran, Lai and Cheng, 2008; Kalaitzi et al., 2024).

Fiscal and institutional support for domestic production is particularly significant. Connecting local producers with dominant consumer sectors, such as tourism and public institutions, provides an important channel for stabilising demand and enhancing economic security (UNDP, 2022; CE-HUB, n.d.). At the same time, digital platforms that facilitate links between small producers and consumers are recognised as promising mechanisms for building shorter and more inclusive supply chains in developing economies, thereby reducing intermediation costs and supporting local economic resilience (Sodhi and Tang, 2013).

In the area of infrastructure, the research highlights the urgent need for the modernisation of logistics hubs, particularly the Port of Bar, as well as for expanding storage and processing capacities for essential goods. Digital transformation – through the implementation of blockchain technology, product tracking systems, and IoT tools – is widely recognised in the literature as a means to improve visibility and supply chain security (Mubarik et al., 2021; Khan et al., 2022). While these authors do not specifically address the Port of Bar, their findings can be extrapolated to similar infrastructure contexts, including that of Montenegro. These steps must be accompanied by regulatory reforms, including data standardisation, promotion of competition, and the implementation of security protocols (Urciuoli and Hintsa, 2017; GS1, 2025).

The institutional dimension remains of critical importance. Given the pronounced shortage of professionals in supply chain management (SCM), it is essential to develop specialised educational programmes and enhance the professionalisation of the field (Kiers et al., 2022; Jobicy, 2025). Strengthening knowledge, as well as organisational competences, is key to implementing digital and strategic transformation in both the public and private sectors.

In the field of energy and strategic reserves, the findings confirm the importance of decentralised systems and domestic food and energy production. Establishing strategic stockpiles, developing micro-production capacities, and encouraging the use of local sources reduce vulnerability to global disruptions (Blečić, 2025; OECD, 2023). The Smart Port concept, as exemplified by the Port of Bar, further reinforces supply chain robustness and allows for more rational energy management (Karas, 2020; Belmoukari et al., 2023).

Multiplier Effect of Road Infrastructure – It is crucial to emphasise that, without developed road infrastructure, a functional supply chain cannot be realised. In this regard, the completion of the remaining sections of the Bar–Boljare motorway, as well as its integration into regional corridors, will have a multiplier effect in reducing logistics costs, improving the integration of domestic producers into market flows, and enhancing Montenegro's competitiveness as a regional logistics hub (Government of Montenegro, 2024).

Taken together, the findings suggest that the national supply chain should be approached as an integrated system – one that must be simultaneously localised, digitalised, professionalised, and institutionally supported.

The insights from this paper open up several new avenues for further research. First, it is necessary to develop quantitative models for measuring resilience in small, open economies such as Montenegro, incorporating macroeconomic, logistical, and institutional indicators (Kalaitzi et al., 2024). Second, experimental and evaluative studies should be conducted on the impact of strategic

reserves on price stability and product availability during crises (Blečić, 2025). Third, the potential of blockchain and IoT to improve traceability and security in complex supply networks in small states remains underexplored (Khan et al., 2022; Zamarripa, 2012). Fourth, further research should explore the role of educational institutions in developing resilience competencies through mapping existing curricula and identifying knowledge gaps (Kiers et al., 2022).

Ultimately, supply chain resilience is not merely a technical or economic challenge, but one that requires strategic planning, institutional coherence, and political will. This paper contributes to that broader framework, with the aim of laying the foundation for a sustainable and stable supply system in Montenegro. The study also confirms that resilience in small economies such as Montenegro cannot be achieved without simultaneously developing internal capacities, fostering digital innovation, and strengthening local production. By integrating these strategies, Montenegro can significantly reduce its exposure to global disruptions and build a sustainable economic system capable of withstanding future challenges.

CONCLUSION: TOWARDS A MORE RESILIENT AND SUSTAINABLE SUPPLY SYSTEM IN MONTENEGRO

Montenegro's dependence on imports, particularly in the food and energy sectors, constitutes one of its principal structural vulnerabilities, a weakness that has become increasingly evident during recent global crises such as the COVID-19 pandemic and ongoing geopolitical instability. This research confirms that supply chain resilience must be established as a central pillar of economic and strategic policy. Despite its limited resource base, Montenegro holds considerable potential to improve systemic resilience through supply source diversification, the expansion of domestic production, digital transformation, and institutional capacity building.

Drawing upon theoretical models (SCOR, CSAR, CAS), international frameworks (OECD, UNDP, FAO), and case-based evidence, this study identifies four core levers of transformation: the strengthening of domestic production, investment in logistics and digital infrastructure, the development of human capital in supply chain management, and the establishment of strategic reserves. The Port of Bar occupies a pivotal role in this configuration; its digital modernisation under the Smart Port concept has the potential to substantially enhance transport resilience, reduce operational risks, and improve the national energy balance.

The deployment of blockchain technologies, Internet of Things (IoT) applications, and standardised digital systems improves visibility, traceability, and agility within supply chains. Simultaneously, the implementation of internationally recognised quality certifications (e.g. ISO 9000) and the functional integration of marketing and supply operations support system-wide cohesion and efficiency. Evidence from comparable contexts confirms that digital integration, supported by skilled human resources, forms the basis of organisational resilience, underscoring the urgency of investing in targeted education and the professionalisation of the supply chain sector in Montenegro.

In view of tightening global regulatory frameworks concerning sustainable supply chains, Montenegro must proactively embed social, environmental, and security considerations into its strategic agendas. While foreign direct investment can support these objectives, its effectiveness

remains contingent upon clearly defined development priorities and robust institutional governance.

This research underscores that resilient and sustainable supply chains are not emergent properties of market dynamics, but rather the outcome of a deliberate, systemic, and interdisciplinary approach involving all key stakeholders – including government, private sector actors, academic institutions, and civil society. Accordingly, the framework proposed herein may serve not only as a strategic guide for Montenegro, but also as a replicable model for other small, import-reliant economies.

By integrating recent theoretical advances in supply chain resilience and sustainability with an applied methodological approach, this paper offers a foundation for further research in economies with comparable structures. In doing so, it contributes to a broader strategic reflection on supply security in small, open, and import-dependent states.

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THE IMPACT OF DIGITALIZATION ON SUPPLY CHAIN MANAGEMENT AND BRAND PERCEPTION

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ABSTRACT

The development of digital technologies has significantly transformed supply chain management, leading to increased efficiency, transparency, and faster delivery. The implementation of blockchain technology, artificial intelligence, and automated logistics systems has impacted not only internal company operations but also consumer perceptions. A key question is how much digital transparency and delivery optimization contribute to consumer trust and loyalty. This study analyzes the impact of supply chain digitalization on consumers, particularly focusing on blockchain technology and delivery speed. Through a quantitative analysis of consumer attitudes, two main aspects are examined: whether the use of blockchain technology increases consumer trust in brands, and how much optimized delivery contributes to long-term brand loyalty. The research findings can provide valuable insights for companies aiming to improve their supply chain management strategies. Brands that successfully integrate digital technologies not only optimize logistical processes but also enhance consumer trust, gaining a competitive advantage in the market.

Keywords: digitalization, supply chain, blockchain, consumer perception, brand loyalty.

INTRODUCTION

The modern development of digital technologies is fundamentally transforming the way companies manage their supply chains. The introduction of technologies such as blockchain, artificial intelligence, automated logistics systems and advanced analytics has enabled greater efficiency, transparency and speed in delivery. According to contemporary research, digitization does not only impact the operational aspects of business, but it also has a significant effect on consumer perception, especially in terms of trust and loyalty to brands. In this context, the question is increasingly raised as to how digital transparency and delivery optimization shape the attitudes and behaviors of modern consumers. This dynamic requires a more detailed consideration in the literature to understand the connection between technological innovations and the building of long-term customer relationships. The aim of this research is to examine how supply chain digitization affects consumer perceptions of brands. Particular focus is placed on analyzing the impact of blockchain technology on consumer trust, as well as the role of delivery speed in forming brand loyalty. This research seeks to answer questions such as how consumers perceive brands that apply digital technologies to manage their supply chains, whether transparency and the ability to track products increase their trust, and how delivery speed affects their loyalty. The research is based on two key hypotheses: (1) that the use of blockchain technology positively impacts consumer trust due to increased transparency, and (2) that efficient and fast delivery contributes to strengthening brand loyalty.

Supply Chain Management (SCM) encompasses all processes from raw material suppliers to the end consumer and is traditionally considered through three key components: sourcing, storage, and distribution. With the development of technology and globalization, SCM has expanded to include additional processes such as planning, tracking, analytics, and digitization. The introduction of new technologies, such as blockchain, IoT, artificial intelligence, and automation, enables companies to improve efficiency, transparency, and agility, making the supply chain more competitive in the global market (Stajić, 2020). Digitization enables faster information exchange, better resource optimization, and more accurate demand forecasting, which has become crucial for gaining a competitive advantage. According to Stajić (2020), the fourth industrial revolution is bringing radical changes in supply chain management, particularly through the integration of new technologies. This process is not just about the individual implementation of new solutions, but also involves sharing these solutions among partners in the chain to achieve greater efficiency and transparency. Supply chain leaders do not just implement digital solutions within their organizations, but also extend them to their partners in order to create synergies and a higher return on investment.

Advanced technologies, such as blockchain, Big Data, IoT smart systems, and artificial intelligence, enable precise product tracking, better resource planning, and real-time operation optimization. For example, blockchain technology ensures complete product traceability, while IoT networks enable better inventory management and logistics processes (Christopher, 2016). Modern supply chain management increasingly seeks horizontal and vertical integration, which allows for faster and more accurate responses to changes in demand, reduced operational costs, and better coordination between manufacturers and distributors. As Christopher (2016) points out, integrating key business functions such as marketing, production, and logistics enables the creation of synergies that enhance business processes, making the business more flexible and agile. The changes brought by the digitization of the logistics sector are not only technological but also relate to the way business is conducted across the entire industry. The use of digital technologies has led to radical changes in business models and processes, enabling greater efficiency and competitiveness in the sector. As Malagón-Suárez and Castro (2022) point out, Logistics 4.0 represents a significant shift in how supply chains are managed, enabling the improvement of operations and competitiveness in the industry. According to Büyüközkan and Fethullah (2018), Industry 4.0 lays the foundation for fully connected and highly competitive supply chains, where innovations become a common interest for all participants in the chain. Stajić (2020) emphasizes that SCM today is not only strategically important for businesses but is also crucial for creating a competitive advantage, as it enables more efficient management of the expanded ecosystem of processes and relationships among partners. Through horizontal and vertical integration, companies achieve competitive advantages, making supply chains more flexible and better equipped to meet the challenges of the global market. The logistics sector is becoming less dependent on human intervention thanks to the application of new technologies. These technologies significantly impact supply chains, improving collaboration among participants and enabling the achievement of business advantages such as greater efficiency, cost reduction, and increased customer satisfaction. Digital transformation can reduce costs by 7-34% and increase revenue by 22-33%, depending on the industry (Lakić, D., 2023).

For the successful implementation of digital transformation in the supply chain, focus should be placed on four key areas: strategic, organizational, process-methodological, and technological digitization. Strategic digitization involves creating a strategy for supply chain management, organizational digitization focuses on employee development, while process digitization promotes collaboration among partners. Technological digitization, which is most

researched, includes the implementation of technologies such as IoT, blockchain, and Big Data. Technological innovations in logistics, based on digitization, bring radical changes to business models and processes, enabling greater efficiency and competitiveness. The digital transformation of the logistics sector is key to improving the business ecosystem and competitiveness in the global market. Blockchain technology is a distributed database that ensures security and immutability of data by linking blocks in a digital chain. Each block contains information about transactions that are verified and cannot be altered later. As a decentralized system, blockchain allows for transparency and real-time access to data for all participants, thereby eliminating problems with information asymmetry and increasing trust among supply chain partners. This technology is key to improving efficiency, reducing errors and fraud, and creating a more sustainable business ecosystem (Dabić-Miletić, S., 2021).

By combining digital technologies such as blockchain and omni-channel strategies, modern companies can significantly improve the efficiency of their supply chains, providing greater transparency, security, and flexibility in managing inventories and deliveries.

Omni-channel retail uses various channels to interact with customers and fulfill their orders, integrating flows of information, products, and finances. This approach allows for a seamless shopping experience, whether it is online shopping, physical stores, or mobile applications. The use of technologies such as inventory management systems and data analytics enables better optimization of demand and logistics operations. Additionally, the "click and collect" strategy, micro-fulfillment centers, and partnerships with logistics services enable faster delivery and reduced transportation costs. Although implementing omni-channel strategies presents challenges, such as aligning different channels and tracking inventory in real-time, in the long term, it provides competitive advantages in terms of efficiency and customer experience (Chopra, S., 2019).

Digital transformation has become crucial for improving business processes and creating competitive advantages. In omni-channel retail, which combines online and offline channels, digitization improves efficiency, reduces costs, and optimizes the supply chain. Zimonjić points out that digitization enables businesses to connect different sales channels, leading to better inventory management and improved customer experience. Also, digital tools such as data analytics, inventory tracking, and transport optimization allow businesses to quickly adapt to market changes. Personalization, enabled by analyzing customer data, is also key to increasing loyalty and sales. According to research by Alogistics (2025), the implementation of the Internet of Things (IoT) has increased the efficiency of shipment tracking by more than 30%, reducing logistics errors, while Big Data analysis reduces warehouse inventories by 25%, improving route optimization and demand forecasting.

METHODOLOGICAL FRAMEWORK OF THE RESEARCH

In order to analyze the impact of digitization on supply chain management and brand perception, a survey was conducted. The research was conducted in an online format, using the Google Forms platform, which enabled easy distribution and efficient collection of responses. An invitation to participate in the research was sent to a wide range of respondents, including individuals connected to the supply chain, brand management, and digitization, members of the academic community, as well as citizens, to encompass diverse opinions and perceptions on the research topic. The survey was distributed via email, social media, and business applications. A total of 83 questionnaires were distributed, with 61 respondents completing the survey, resulting in a response rate of 73.5%. This high response rate allows for an adequate

analysis of the collected data and provides insights into the attitudes of relevant stakeholders regarding the research topic.

A structured questionnaire was used for data collection, carefully designed to cover the key aspects of the research. The questionnaire consisted of several segments, including socio-demographic characteristics of the respondents, frequency of online shopping, the importance of tracking and transparency of shipments, perception of digital tools in the supply chain, and attitudes toward the importance of digitization for the future development of supply chain management. It was composed of 8 closed-ended questions, including a Likert scale (from 1 to 5), which allowed for the precise expression of respondents' attitudes, thereby facilitating standardized analysis of responses and interpretation of results. After the survey was completed, all data were retrieved from the Google Forms platform and consolidated into a single dataset. To ensure the accuracy of the results, the responses were reviewed, and the data were cleaned, which involved removing incomplete and inconsistent responses. The sample of respondents was formed using the random sampling method, including respondents with different socio-demographic characteristics, without prior selection based on specific experiences or knowledge. This approach allowed for the collection of data from a broad spectrum of participants, whose responses can provide a comprehensive insight into the research topic.

For data processing and analysis, SPSS (Statistical Package for the Social Sciences) was used. Demographic data were coded with numerical values for easier analysis, while attitude questions, which were rated using the Likert scale (from 1 to 5), retained their original values. The first step in the analysis involved descriptive statistics of the demographic data of the respondents to gain insights into the sample structure and basic characteristics of the respondents. The analysis included calculating frequencies and percentages for key demographic variables, such as gender, age, education level, and monthly income. The following is the table:

Table 1. Descriptive Statistics of the Socio-Demographic Structure of Respondents

	Category	Frequency	Percentage
Gender:	Male	23	62%
	Female	38	38%
Age:	Under 20 years	8	13%
	21 to 30 years	28	46%
	31 to 40 years	19	31%
	41 to 50 years	6	10%
Years of Work Experience:	Less than 5 years	14	27%
	5 to 10 years	14	27%
	11 to 20 years	14	27%
	More than 20 years	10	20%
Education Level:	High school	25	41%
	Bachelor's degree	22	36%
	Master's degree	11	18%
	Doctorate degree	3	5%
Income:	Less than 500 eur	12	20%
	500 - 1000 eur	32	52%
	1000 - 2000 eur	15	25%
	More than 2000 eur	2	3%

Source: Author

The research sample consisted of 61 respondents with varied demographic and socio-economic characteristics. The majority belonged to the 21–30 age group, and a higher proportion were male. Respondents differed in terms of work experience, educational attainment, and monthly income, ensuring a heterogeneous sample. These contextual factors are relevant for interpreting consumer attitudes toward delivery speed, the frequency of online purchases, and the relationship between income levels and brand perception.

Although the research provided useful insights into consumers' perceptions of brands and their supply chains, certain limitations should be considered when interpreting the results. To assess the relevance of the sample in this research, a sample of 61 respondents was taken, consisting of different socio-demographic groups, including users with experience in online shopping, as well as citizens with varying views on the importance of digitalization in supply chains. Although the sample is not representative of the entire consumer population in Montenegro, it is statistically significant for the group covered by the study. This sample provides insights into the views and perceptions of key actors regarding factors such as transparency in supply chains, delivery speed, and the use of digital tools. Although the sample size limits the generalizability of the findings, the demographic distribution provides relevant insights for the target population. The online survey method may have introduced a degree of sampling bias, with urban respondents and individuals more interested in digitalization being overrepresented. Despite these limitations, the applied methodology - based on a quantitative approach and SPSS data analysis - ensured valid and reliable insights into consumer perceptions of supply chain digitalization. The findings offer a valuable foundation for future research on this topic in the Montenegrin context.

RESULTS AND DISCUSSION – THE IMPACT OF DIGITALIZATION ON BRAND PERCEPTION

The research results present the key findings derived from the analysis of respondents' answers to the questions in the questionnaire. The analysis focused on consumer attitudes regarding the impact of digitalization on supply chain management, brand perception, and the factors that shape their loyalty. The results indicate a significant connection between supply chain transparency, delivery speed, and brand trust, with a particular emphasis on digital technologies as factors influencing consumer decisions. The following subsections will present the results of questions related to the frequency of online shopping, attitudes toward digital transparency, and delivery speed, along with the interpretation of statistical indicators that enable a deeper understanding of consumer behavior and preferences.

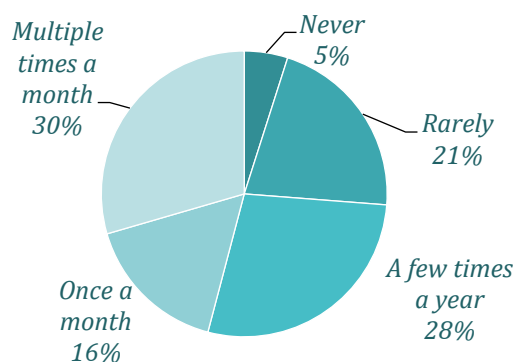


Chart 1. Frequency of Online Shopping
Source: Author

Chart 1 indicates that online shopping is increasingly common, with 30% of respondents purchasing online multiple times a month, indicating the growing popularity of online shopping. 28% of respondents shop a few times a year, while 21% shop rarely, and 16% shop once a month. Only 5% of respondents never shop online. These data suggest that online shopping is becoming an increasingly common way of shopping, with a particularly noticeable trend of frequent online shopping among a significant number of respondents. This behavior pattern may be the result of the convenience and simplicity that online shopping offers, as well as the broader range of products available.

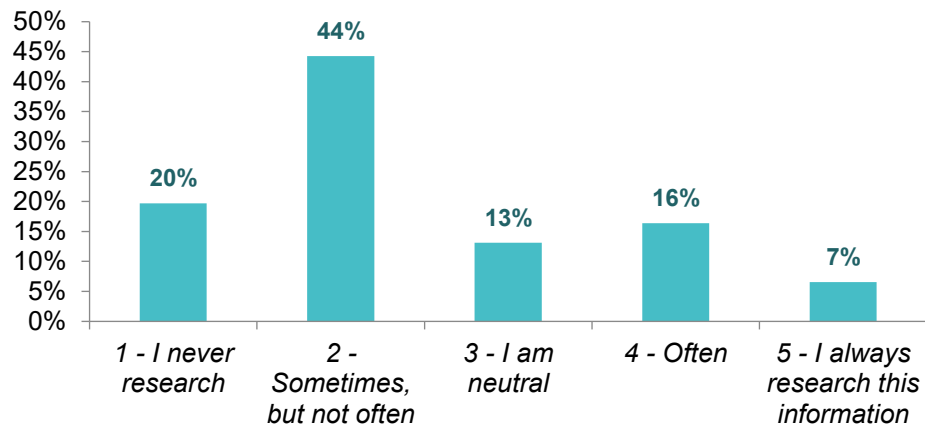


Diagram 1. Frequency of Supply Chain Research Before Purchase
Source: Author

The research shown in Diagram 1 illustrates the growing frequency of supply chain research before making a purchase, indicating the increasing attention consumers are giving to the ethics, sustainability, and transparency of products. This diagram demonstrates how often consumers research various aspects of the supply chain, such as product sources, production conditions, and other relevant information before making a purchasing decision.

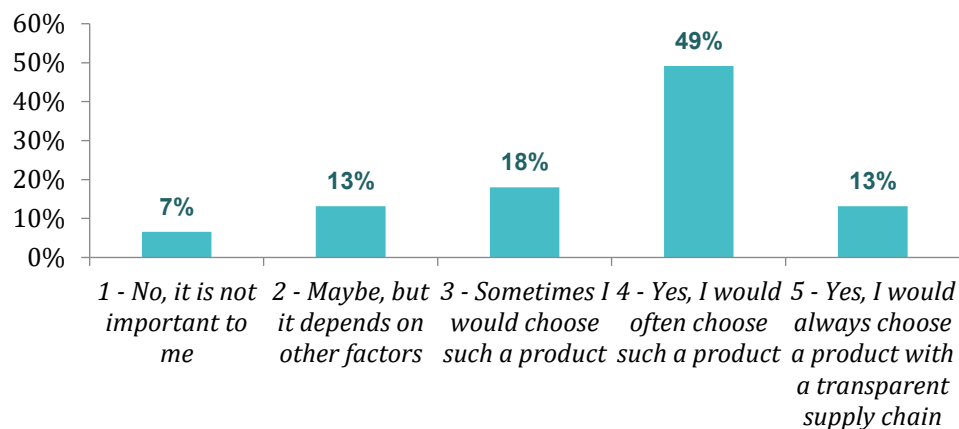


Diagram 2. Impact of Supply Chain Transparency on Purchasing Decision
Source: Author

Diagram 2 shows a clear consumer preference for products with transparent supply chains, with the majority of respondents often or always choosing such products. This trend suggests an increased awareness and interest among consumers regarding the ethical and environmental aspects of products, which could influence business strategies and the increase transparency in the industry.

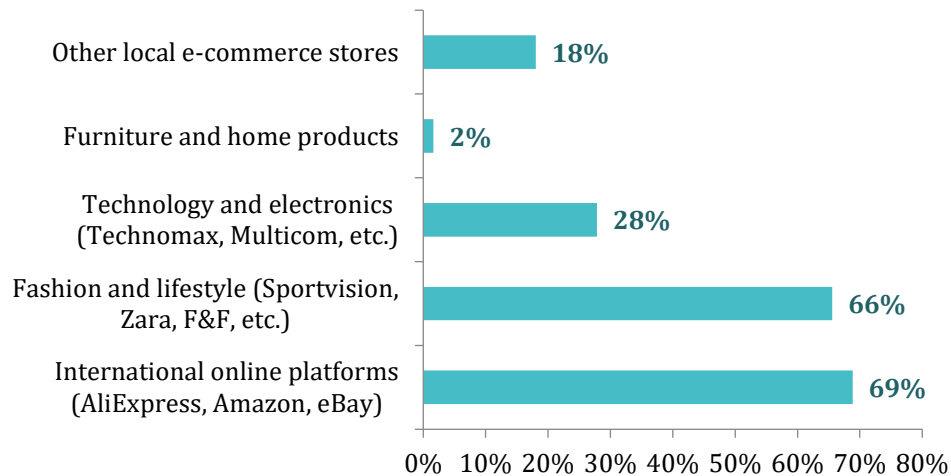


Diagram 3. Most Commonly Chosen Online Platforms and Brands for Shopping
Source: Author

The research results show that respondents most frequently order from international online platforms such as AliExpress, Amazon, and eBay (69%), suggesting that these platforms are the most popular choice for online shopping due to their wide selection and competitive prices. The next most popular are fashion and lifestyle brands such as Sportvision, Zara, and F&F (66%). Technology and electronics, although popular, occupy a smaller share of 28%, while furniture and home products are almost negligible at only 2%. Additionally, 18% of respondents use local e-commerce platforms, indicating a lesser preference for domestic platforms compared to international ones. These data highlight the strong influence of global online platforms on the market, while local brands and products have a smaller share.

In the next part of the study, respondents were asked questions with statements they rated using the Likert scale. This scale allows for the quantification of their attitudes, ranging from complete disagreement to complete agreement. The analysis of the results provides deeper insight into the online shopping habits of respondents, which can have a significant impact on understanding consumer preferences in Montenegro. The results and their interpretation are presented below.

Table 2. Descriptive Analysis of Attitudes

Perception/Attitude from the Questionnaire	Mean Value	Standard Deviation
1. How often do you purchase products online?	3.15	0.93
2. Is it important for you to know the origin and journey of a product before purchasing it?	3.2	1.25
3. Would you trust a brand more if it used blockchain to track the product?	3.79	1.13
4. Would you choose a product with a transparent supply chain?	3.49	1.09
5. How important is delivery speed when purchasing products online?	3.75	0.99
6. Would you pay more for faster and more efficient delivery?	3.21	1.11
7. How often do you research how brands manage their supply chains?	2.46	1.18

Source: Author

Respondents show moderate interest in transparency and technologies such as blockchain, and delivery speed is also an important factor when shopping online. However, the majority of respondents do not frequently research how brands manage their supply chain, suggesting that interest in this information is still relatively low. There is high variation in the responses to most questions, indicating that consumers have different priorities and attitudes when it comes to online shopping. To address the research problem and effectively fulfill the objectives of this study, the following testing was carried out using inferential statistics. Inferential statistics allows researchers to make conclusions about a broader data set or population based on a sample of data, testing predefined hypotheses or answering specific research questions. Depending on the formulation of the questions or hypotheses, different statistical tests are used. Additionally, the choice of statistical tests also depends on the population size and the normality of data distribution.

H1: Consumers trust a brand more that uses blockchain to track products, as it increases the transparency of the supply chain.

To test hypothesis H1, normality of data distribution was assessed using the Shapiro-Wilk and Kolmogorov-Smirnov tests for two key variables: the importance of product traceability and trust in brands using blockchain. Both tests showed significant deviations from normality ($p = 0.000$), indicating the need for non-parametric methods such as the Spearman correlation or Kruskal-Wallis test in further analysis.

A regression analysis was conducted with trust in brands using blockchain as a predictor. The correlation coefficient ($R = 0.587$) indicates a moderately positive relationship, while the coefficient of determination ($R^2 = 0.344$) shows that 34.4% of the variance of the dependent variable is explained by the model. The adjusted R^2 (0.333) confirms the appropriateness of the model without overfitting. However, the standard error of the estimate (1.020) indicates limited predictive accuracy. Overall, the analysis confirms a statistically significant but moderate relationship, suggesting that additional factors are likely to influence the dependent variable. The conclusion from the regression analysis indicates a moderate relationship between trust in the blockchain brand and the dependent variable, but R^2 suggests that only 34.4% of the variance can be explained by this single predictor. Although there is a statistically significant correlation, the model is not perfect, and other factors may have a greater impact on the dependent variable. Additionally, the high standard error indicates that the model's predictions are not completely accurate.

The Spearman correlation between the importance of knowing the origin of a product and trust in brands that use blockchain resulted in a coefficient of 0.601, which indicates a moderate to strong positive correlation. The correlation is statistically significant ($p = 0.000$) and confirms that a higher interest in the traceability of products is associated with greater trust in blockchain-based transparency ($N = 61$).

Table 3. Spearman's Correlation H1

Measure P-value (Sig.)	Measure P-value (Sig.)
Correlation Coefficient (Spearman's rho)	0.601
P-value (Sig. 2-tailed)	0.000
N (Number of Respondents)	61

Source: Author

Spearman's correlation shows that there is a moderate and statistically significant relationship between the interest in knowing the origin and journey of a product and trust in a brand that uses blockchain for tracking products. This suggests that consumers who consider the origin of a product important are also more likely to trust a brand that uses blockchain technology to ensure transparency.

ANOVA: The model is statistically significant and suggests that trust in a brand that uses blockchain for tracking products impacts how important consumers consider knowing the origin and journey of a product. Therefore, hypothesis H1 - that consumers trust brands using blockchain because it enhances supply chain transparency - is confirmed.

H2: Faster and more efficient delivery increases consumer loyalty to the brand.

To test hypothesis H2, the Shapiro-Wilk and Kolmogorov-Smirnov tests confirmed that data on the importance of delivery speed and willingness to pay more for faster delivery were not normally distributed ($p = 0.000$). As a result, non-parametric methods, such as Kruskal-Wallis or Spearman's correlation, were applied for further analysis. In the regression model, willingness to pay more for faster delivery served as the predictor. The analysis revealed a moderate to strong positive correlation ($R = 0.621$) between willingness to pay more and the importance placed on delivery speed. The model explained 38.5% of the variance ($R^2 = 0.385$; Adjusted $R^2 = 0.375$), indicating reasonable predictive power, though there is potential for further refinement. The standard error (0.786) suggests relatively accurate, yet not perfect, predictions.

Spearman's correlation between the importance of delivery speed and the willingness to pay more for faster delivery yielded a coefficient of 0.618, indicating a moderately strong positive correlation. This suggests that as consumers value delivery speed more, they are increasingly willing to pay for faster delivery. The correlation is statistically significant ($p = 0.000$), confirming a meaningful relationship between the two variables ($N = 61$).

Table 4. Spearman's Correlation H2

Variables	Correlation (Spearman's rho)	P-value (Sig.)
How important is delivery speed when purchasing products? Would you pay more for a product if you know it will be delivered faster?	1	-
How important is delivery speed when purchasing products? Would you pay more for a product if you know it will be delivered faster?	0.618	0.000

Source: Author

The correlation between the importance of delivery speed and the willingness to pay more for faster delivery is moderate and statistically significant, indicating a positive relationship between these two variables.

Kruskal-Wallis: Since the p-value is greater than 0.05, we conclude that there is no statistically significant difference between different income levels and the willingness to pay more for faster delivery. In other words, income does not significantly affect consumers' willingness to pay more for faster delivery.

Table 5. Kruskal-Wallis Test H2

	6. Would you pay more for a product if you knew it would be delivered faster and more efficiently?
Kruskal-Wallis H	4.858
df	3
Asymp. Sig.	0.183
<i>a. Kruskal Wallis Test</i>	
<i>b. Grouping Variable: Incomes</i>	

Source: Author

Based on the results of the conducted analyses, we can conclude that hypothesis H2 (Faster and more efficient delivery increases consumer loyalty to the brand) can be partially confirmed.

IMPLICATIONS OF THE RESEARCH

The research confirms the significant impact of digitalization on supply chain management, brand perception, and consumer loyalty. The findings underscore the need for further exploration of digital transparency and delivery speed's influence on consumer trust, particularly in the context of Montenegro. This study reveals a significant correlation between consumer trust in brands using blockchain for product tracking and the perceived importance of supply chain transparency. Additionally, it suggests that delivery speed positively influences consumers' willingness to pay more for faster service. These results align with prior research, confirming that blockchain enhances brand trust and that delivery speed plays a crucial role in maintaining consumer loyalty.

One key finding is the positive correlation between trust in blockchain-enabled brands and the perception of supply chain transparency. While the explained variance is moderate ($R^2 = 0.344$), it highlights that blockchain can boost trust, though other factors also contribute to shaping this perception. This finding supports Christidis and Devetsikiotis (2016), who argue that blockchain enhances transparency and trust, but its effectiveness depends on consumer understanding. The study also confirms that trust in blockchain varies with consumer awareness, as suggested by Eslami et al. (2020). Consumers who value transparency in supply chains tend to trust blockchain-enabled brands more, while skeptics are less likely to do so. This emphasizes the need for educating consumers to foster greater acceptance and trust in blockchain technology.

Additionally, delivery speed significantly influences consumer decisions. The correlation between perceived delivery speed and the willingness to pay more ($\rho = 0.618$, $p = 0.000$, $R^2 = 0.385$) mirrors findings by Joerss et al. (2016), who noted that 25% of consumers are willing to pay extra for fast delivery, especially for same-day services. The study also reveals that consumers are more willing to pay extra for fast delivery of products like food compared to items like clothing. This supports previous research showing that delivery speed impacts loyalty, with willingness to pay more often depending on the product type. Fisher et al. (2019) found that new customers are more responsive to delivery speed than long-term customers, suggesting that new experiences and frequency of online shopping shape perceptions of delivery speed. Thus, delivery speed is one factor among many influencing consumer decisions, with price and reliability also playing key roles.

Lastly, the Kruskal-Wallis test indicated significant differences in the perception of blockchain technology efficiency, in line with Ravi and Shankar (2018), who argue that successful adoption of new technologies like blockchain depends on minimizing implementation challenges. Consumers who recognize fewer barriers tend to rate blockchain's efficiency more highly, while skeptics are less inclined to believe in its effectiveness.

POTENTIALS FOR IMPROVING THE DIGITALIZED SUPPLY CHAIN IN MONTENEGRO

E-commerce in Montenegro has seen significant growth in recent years, driven by global trends in digitalization and changes in consumer habits. The development of the internet, expansion of mobile technologies, and improved digital infrastructure have enabled the growth of online shopping, with increasing interest from both consumers and entrepreneurs. Although the market is still not on the level of developed countries, a clear growth trend is visible, despite challenges related to rural area coverage and technological accessibility. Technological infrastructure, such as better internet access and the growth of mobile technologies, is crucial for the further development of e-commerce, while digital payments increasingly use debit and credit cards as well as e-wallets. However, cash still dominates during product delivery, indicating a need for greater trust in online transactions. Additionally, while Montenegro has regulations related to e-commerce, obstacles such as complex administrative procedures and high operational costs slow the growth of domestic platforms. Although consumers are increasingly using the internet for research and shopping, they still show mistrust towards transaction security and product quality, preferring to shop through international platforms.

Although e-commerce in Montenegro is experiencing gradual growth, there are still significant challenges to its development. According to data from MONSTAT in 2015, 23.9% of respondents had purchased goods or ordered services online, an increase of 4.1% compared to the previous year. However, a high percentage of citizens (76.1%) had never used the internet for shopping, indicating a need for greater education and promotion of digital commerce. Among the most popular products bought online are clothing and sports equipment (82.9%), while other categories such as travel services and pharmaceuticals are significantly less represented. The data also shows that 60.4% of purchases come from merchants outside the European Union, while purchases from domestic merchants are less represented, accounting for only 24.6%, highlighting a significant opportunity for the growth of domestic e-commerce. Furthermore, only 24.3% of businesses with a website receive orders online, suggesting insufficient utilization of the digital market in the business sector.

Despite the challenges, there is significant potential for further development of e-commerce in Montenegro. Key challenges include logistical issues, slower delivery processes compared to more developed markets, and limited product offerings on domestic platforms. However, opportunities for growth include improving logistics systems, introducing new technologies such as blockchain for product tracking, and educating consumers about the benefits of online shopping. Increased integration of social media into e-commerce processes can facilitate the promotion of local brands and interaction with consumers. However, challenges such as low consumer trust in transaction security and a lack of comprehensive market data still exist. Further research, collaboration with MONSTAT, and the application of new legal frameworks are needed to facilitate the better development of the e-commerce sector and strengthen domestic competitiveness.

According to Eurostat data (2023), Montenegro is a leader in the region for online clothing purchases. In the three-month period in 2023, as many as 77% of Montenegrins purchased

clothing online, which is almost at the level of Bulgaria (78%) and Romania (80%). Although Montenegro leads, it is followed by Croatia (72%), Serbia (70%), Slovenia (66%), and Bosnia and Herzegovina (59%), which shows the increasing presence of online shopping in the region. Return policies play a significant role in purchasing decisions. According to research by ICSC, 82% of consumers believe that return policies affect their decision to buy certain products. When comparing product returns between physical stores and online shopping, the differences are significant. Only 6.2% of customers who bought products in physical stores decide to return them, while about one-third of online shoppers return the products they purchased, indicating a higher return rate in online shopping.

Furthermore, the research showed that return costs have a significant impact on consumer behavior. If there were costs for returning products purchased online, 77% of consumers would be more likely to shop in physical stores, while 80% would prefer to return products to physical stores. Also, many consumers order additional products with the intention of returning them if they are not satisfied. According to the research, 87% of respondents admit to ordering products they want to try, counting on returning them if they are not satisfied. Finally, the return policy also plays a key role in customer satisfaction. About 60% of respondents stated that retailers allowed a full refund and kept products they tried, confirming the importance of flexible return policies for online retailers.

These data clearly show how the digitalization of shopping and return policies affect consumer behavior and also reveal the challenges faced by merchants in digital commerce, particularly concerning logistics, product returns, and purchasing habits. Opportunities for improving the e-commerce sector in Montenegro can be viewed through several key areas that will enable faster development and create a more favorable environment for all market participants, both merchants and consumers. Increasing digital literacy is the first step toward improvement. The basic prerequisite for wider use of e-commerce is educating citizens about online transaction security and the advantages of online shopping. Promoting security, using digital platforms, and increasing consumer trust will reduce skepticism many still have towards online payments. Educational programs should focus on raising awareness about privacy protection and data security, which would allow consumers easier and safer online shopping. Improving online payment security is essential. Introducing certified and secure payment systems, such as SSL encryption and two-factor authentication, can increase consumer trust in e-commerce. Education about privacy protection is also crucial for enabling safer online transactions.

Support for small and medium-sized enterprises (SMEs) is an important area for the development of local e-commerce. These companies often have not fully utilized the potential of e-commerce. Assistance through education, financial incentives, and support with technological and logistical resources can significantly improve their operations and expand their market reach. Additionally, motivating merchants to use global e-commerce platforms, such as Amazon or eBay, contributes to expanding the market and increasing sales outside the borders of Montenegro. Infrastructure improvements and logistics systems are key to the development of e-commerce. Investment in modernizing delivery systems and optimizing international shipments will improve efficiency and competitiveness for merchants. Additionally, simplifying the product return process will make shopping safer and more attractive to consumers.

Technological progress also plays an important role. Automation, advanced data analysis technologies, and product personalization can significantly improve the customer experience. Personalization algorithms can increase sales and better meet customer needs. The use of

digital marketing, including SEO optimization, social media, influencer marketing, and email targeting, can increase merchants' visibility and competitiveness in the market.

Collaboration with governmental and international institutions is the foundation for the long-term development of e-commerce. Introducing clear regulations and standards that protect both merchants and consumers brings security to all market participants. Easing access to international markets by reducing customs and administrative barriers will open new opportunities for local merchants. Additionally, encouraging start-up initiatives and innovations in the e-commerce sector, through incubators and support for new entrepreneurs, can contribute to creating a competitive market and innovative business models. By combining all these strategies, Montenegro can lay the foundation for the long-term development of the digital economy, enabling better competitiveness and satisfaction for both consumers and entrepreneurs in the e-commerce market.

CONCLUSION

Based on the conclusions from hypothesis testing, the research confirms the significant impact of digitalization on supply chain management, brand perception, and consumer loyalty, particularly in e-commerce in Montenegro. Although the Montenegrin market is still in a developmental phase compared to more developed countries, there are clear indications that digitalization can play a key role in improving the e-commerce sector, considering global trends and changes in consumer behavior.

One of the key findings of the research is the importance of blockchain technology in increasing consumer trust in brands that use it for product tracking. The transparency in the supply chain enabled by blockchain encourages consumers to trust brands more, while also providing a competitive advantage. However, further consumer education on this technology is necessary to reduce doubt and insecurity, thereby increasing the acceptance of blockchain. The speed of product delivery also emerged as one of the key factors in consumer decision-making, with a pronounced effect on consumer loyalty. The research results indicate that a significant number of consumers are willing to pay more for faster delivery, particularly for products such as food items. These findings confirm the importance of optimizing logistics systems, as delivery speed not only consumer satisfaction but also loyalty.

Considering the challenges Montenegro faces, such as low consumer trust in the security of online transactions and underdeveloped domestic e-commerce platforms, it is essential to work on improving infrastructure and digital payments. Increasing digital literacy and educating consumers about online transaction security, as well as improving return policies, will help reduce skepticism toward online shopping. Recommendations for improving the e-commerce sector in Montenegro cover several key areas. Efforts should be directed toward strengthening digital infrastructure, educating consumers and merchants, as well as developing secure payment systems and modernizing logistics systems. Additionally, supporting small and medium-sized enterprises through financial incentives and training, as well as assisting in accessing global e-commerce platforms, can significantly contribute to the expansion of domestic e-commerce.

In the context of technological advancement, the application of advanced technologies such as automation, data analytics, and offer personalization can contribute to improving the customer experience and increasing merchant competitiveness. Furthermore, greater integration of social media and digital marketing into e-commerce strategies would enable better interaction with

consumers, thereby increasing product visibility and sales. Finally, collaboration with government and international institutions and the implementation of clear regulations for the protection of both consumers and merchants can create a stable and secure business environment. Easing access to international markets and reducing administrative barriers contributes to the development of the e-commerce sector and opens up new opportunities for market expansion.

In summary, through the integration of digital technologies, improvement of education, optimization of logistics and payment systems, and collaboration with institutions, Montenegro can significantly improve e-commerce and lay the foundation for the long-term growth and development of the digital economy.

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INTERNATIONAL STANDARDS AND ALBANIAN LEGISLATION RELATING TO THE RIGHT TO COMPENSATE TO CRIME VICTIMS

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Entry

Increasing the opportunity for victims of crime to turn to the judiciary is one of the most important goals in democratic societies and, consequently, in our country. The victim's right to compensation is an important aspect of this opportunity. The purpose of this paper is to analyze this right and how it is implemented in our country and internationally. The study first analyzes the right to compensation of victims of crime under international law, examining acts of international law related to the rights of victims, the fight against trafficking, the rights of migrants, the rights of workers and the rights of victims of violence due to gender. Subsequently, the study analyzes the Albanian legislation in this aspect, focusing especially on the 2017 amendments to the Criminal Procedure Code.

Some terms used and their meaning in the literature

The terms "indemnity," "reparation," "repayment," and "reparation" are often used for concepts that are the same or very similar, meaning, to make amends for someone's loss, damage, wrongdoing, especially through appropriate payment¹. Often, in the literature and studies, the term “indemnity” refers to the general concept of payment to the person, regardless of the source of payment or the mechanism used or the types of losses that are compensated. Thus, compensation includes compensation from state-funded schemes, as well as rewards given in criminal, civil or labor law proceedings.

"Compensation for damage" is used in a narrower sense, because it refers to "the amount of money that belongs to the person affected by the criminal offense, received as compensation by the perpetrator of the criminal offense²." Compensation excludes compensation in cases where the source of funding is the state scheme, and therefore the term “compensation (indemnity)” is used in the context of civil and labor proceedings. Compensation claims may contain several different elements (e.g., pain and suffering, medical expenses and unpaid wages) or a single element (e.g., unpaid wages). These elements can be classified into broader categories as "non-pecuniary" and "material" damage.

¹ Definition of Compensation in the Chambers 21st Century Dictionary 21st, 2004.

² Black's Law Dictionary (8th edition, 2004).

International law and the laws of certain countries also use "redress", "restitution" or "reparation". There are times when any of these terms have one meaning in the legislation of one country and another meaning in other countries, e.g. The term "restitution" in the United States means payment made to the victim by the defendant pursuant to a court decision, but in the United Kingdom and France "restitution" means the return of goods and property to the owner. lawful.

Each country uses different terms for the loss elements included in the indemnity claim. However, in a general sense, claims for damages mainly contain elements that fall into two distinct categories: indemnification for "pecuniary damage" and indemnity for "non-pecuniary damage." "Material damage" refers to financial or monetary loss, eg, medical expenses, hospitalization or burial, loss of expected income and benefits arising from employment, unpaid wages and property damage costs. The definition and scope of pecuniary damage in the national context is defined in legislation (or through precedents in common Anglo-Saxon traditions) and varies from country to country. Some compensation mechanisms enable the payment of all forms of material damage, while others enable only limited categories. "Non-pecuniary damage" refers to other non-financial or non-monetary losses, eg, emotional suffering, damage to honor or reputation, "pain and suffering," anxiety, loss of life satisfaction, loss of company and friendship. Again, the definition and scope of non-pecuniary damage in the national context is defined by law (or through precedents in common law countries) and varies from country to country. Some compensation mechanisms allow all forms of non-pecuniary damage to be claimed, some allow only certain types of non-pecuniary damage, and some do not allow the filing of a claim for non-pecuniary damage at all.

Compensation of victims in international law

The right to compensation is one of the most important rights of victims of crime. The wrong has been recognized in international and European instruments.

The right of victims to seek redress was first recognized by the international community in 1985 when the UN General Assembly adopted the Declaration of Basic Principles of Justice for Victims of Crime and Abuse of Power³. Recognizing that millions of people fall victim to crime each year and that their rights are not adequately recognized, the Assembly wanted to provide assistance and justice for them, through a series of rights for victims, including compensation.

The Council of Europe was the first in the field of victim compensation with the European Convention on the Compensation of Victims of Violent Crime in 1983⁴. Under the Convention, States Parties have an obligation to compensate victims of acts of intentional violence resulting in bodily injury or death.

At European Union level, the first step in recognizing the importance of compensation for victims of crime was the adoption of the Council Framework Decision on the situation of victims in criminal proceedings in March 2001⁵. The decision encourages Member States to take measures to ensure that victims of criminal offenses have the right to a decision on compensation in criminal proceedings. However, the decision does not mention compensation by the state. As another major step towards

³ UNGA, Declaration of Basic Principles of Justice for Victims of Crime and Abuse of Power, 29 November 1985; UN Doc. A / RES / 40/34, <http://www.un.org/documents/ga/res/40/a40r034.htm>

⁴ European Convention on the Compensation of Victims of Violent Crimes, ETS No.116.

⁵ 2001/220 / JHA: Council Framework Decision of 15 March 2001 on the standing of victims in criminal proceedings.

establishing European victims' rights, the Compensation Directive was adopted in 2004⁶. The Directive imposes a clear obligation on Member States to have state compensation schemes for intentionally violent crime, including the crime of terrorism. The instrument also includes mechanisms to facilitate compensation claims in cross-border cases. According to Article 1 of the Compensation Directive “Member States must ensure that where an intentional violent crime is committed in a Member State other than that Member State where the claimant is a habitual resident, the applicant has the right to report request. an authority or any other body in the latter”.

In 2012, the EU took another important step towards guaranteeing the rights of victims of crime with the 2012 Directive setting minimum standards for the rights, support and protection of victims of crime (Victims' Rights Directive)⁷. This Directive strengthens the rights of victims compared to the 2001 Council Framework Decision. This horizontal directive forms the cornerstone of EU victim rights policy and has been applicable in the Member States since November 2015. The Rights Directive of Victims provides for a set of binding rules for all victims and all crimes. Does not include the right to be recognized and treated in a respectful, sensitive, adapted, professional and non-discriminatory manner. With regard to compensation, does it provide for the right to take a decision on compensation by the perpetrator within a reasonable time during the criminal proceedings and that Member States shall take measures to encourage perpetrators to provide adequate compensation to victims (Article 16).

On 15 March 2017, the European Union adopted Directive (EU) 2017/541 on the fight against terrorism (Counter-Terrorism Directive)⁸. Chapter V of this directive explicitly sets out provisions for the protection, protection and rights of victims of terrorism. These new rules are based on the already existing EU horizontal rules for victims of crime (Victims' Rights Directive and Compensation Directive). Member States should establish confidential, free and easily accessible support services to assist victims of terrorism immediately after a terrorist attack and for as long as necessary. In terms of compensation, these support services are required to assist victims of terrorism with claims regarding compensation that is available under national law. This Directive entered into force in the Member States in September 2018 and has not yet been fully transposed into the Member States.

Another instrument specifically dedicated to the victims of a certain category of crime is my 2001 Anti-Trafficking Directive⁹ on preventing and combating trafficking in human beings and the protection of its victims. The Directive sets minimum standards to be applied throughout the European Union to prevent and combat trafficking in human beings and to protect victims. It is based on a human rights approach and a gender perspective. It contains provisions for the protection, assistance and support of victims, but also for prevention and prosecution of crime. The Anti-Trafficking Directive explicitly states in Article 17 that Member States must ensure that victims of trafficking in human beings have

⁶ Council Directive 2004/80 / EC of 29 April 2004 relating to compensation to crime victims,
<http://eurlex.europa.eu/legalcontent/EN/TXT/?uri=celex:32004L0080>

⁷ Directive 2012/29 / EU of the European Parliament and of the Council of 25 October 2012 establishing minimum standards on the rights, support and protection of victims of crime, and replacing Council Framework Decision 2001/220 / JHA, <https://eurlex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012L0029&from=FR>

⁸ Directive 2017/541 / UE of the European Parliament and of the Council of 15 March 2017 on combating terrorism and replacing Council Framework Decision 2002/475 / JHA and amending Council Decision 2005/671 / JHA, <https://eurlex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017L0541&from=FR>

⁹ Directive 2011 / 36 / UE of the European Parliament and of the Council of 5 April 2011 on preventing and combating trafficking in human beings and protecting its victims, and replacing Council Framework Decision 2002/629 / JHA, <https://eurlex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32011L0036&from=en>

access to existing compensation schemes for victims of intentional violent crime . Furthermore, Member States should ensure that victims of trafficking in human beings have immediate access to legal representation, including in this respect the purpose of seeking compensation. Member States were required to complete the transposition of the Anti-Trafficking Directive by 6 April 2013. All Member States bound by the Directive had notified the European Commission of their transposition measures. With regard to the introduction of the EU Anti-Trafficking Directive into national law, the European ¹⁰Commission 's Transposition Report concluded that although there had been substantial efforts by the Member States In the EU , there is still considerable room for improvement in various aspects , including compensation . The Commission continues to monitor the transposition and correct implementation of the Directive. A number of Commission reports, studies and documents address the issue of compensation for victims of trafficking.

Developments in Albanian legislation on victim compensation

Recently, there has been a marked evolution of international standards regarding access to justice for victims of violent crime, for their right to compensation. This fact is also affecting the Albanian legislation to create new opportunities.

The Constitution of the Republic of Albania provides as one of the fundamental rights, the right of the citizen for rehabilitation and / or compensation, in case he / she has been harmed due to an illegal act, action or inaction of state bodies ¹¹. This right is reserved to the law to determine the modalities of its implementation. Law no. 9381, dated 28.04.2005 "On the compensation of unjust imprisonment", is one of the main laws adopted pursuant to Article 44 of the Constitution. Since its adoption, the case law has shown an increase in cases of compensation sought from the court for illegal conduct of police bodies, or for unjust imprisonment. The mechanism provided by the Constitution for the acceptance of international acts in the domestic legal system, fully allows the judge to decide on claims for compensation / indemnity, referring directly to conventions and other international acts ratified by the Republic of Albania.

In general, legal remedies for damages can be sought in the Code of Criminal Procedure and the Civil Code. From the point of view of case law, it is worth mentioning the Unifying Decision, no. 12, dt. 14.09.2007, of the Joint Colleges of the High Court, which unifies the case law in terms of material and non-pecuniary damage.

Albanian procedural legislation provides for the possibility of compensating victims, through procedural means in two processes: the civil lawsuit in the criminal process and the lawsuit for damages in the civil process. Until 2017, the main difference between these processes was the fact that the civil lawsuit in the criminal process was related only to the claim for material damage. The Code of Criminal Procedure did not provide for the possibility to claim "non-pecuniary damage" as part of a lawsuit in criminal proceedings. However, the victims had the legal opportunity to claim non-pecuniary damage through civil proceedings. Also, in the case of the request of the accusing injured party before the court, the request for compensation of damage was provided, without necessarily conditioning it with material damage ¹².

¹⁰COM (2016) 722 .

¹¹ Article 44

¹² See Article 59 of Penal Procedure Code.

From the point of view of international standards, in the Albanian mechanisms of the right to compensation we can clearly distinguish:

- the right to seek redress from the perpetrator, through criminal and civil proceedings.

Albanian procedural legislation provides for the possibility of compensating victims through civil lawsuits in criminal proceedings and lawsuits for damages in civil proceedings. Historically, the main difference between these processes has been the fact that civil lawsuits in criminal proceedings were related only to the claim for pecuniary damage, whereas non-pecuniary damage could be claimed only through civil proceedings. This position of the Code of Criminal Procedure has been interpreted by the Albanian legal-criminal doctrine. *"The volume of rights that the civil plaintiff has in the criminal process are determined by the purpose of this institute to ensure the replacement of material damage caused by the commission of a criminal offense"*¹³.

In this panorama, it is to emphasize the place of the accusing injured party, ie the victims who have suffered damage from a criminal offense of minor importance, and raise the accusation directly in Court. Only a few figures of criminal offenses are included in this category, according to the categorization defined in the closed list made by the Code of Criminal Procedure itself¹⁴. The accusing injured party has always had the opportunity to seek compensation for material and non-pecuniary damage.

With the changes made in 2017 in the Code of Criminal Procedure, the victim was recognized another role in criminal proceedings. In a subject without rights and with the role of mainly a witness, unless he presented himself as a civil plaintiff, the victim was promoted to the rank of a subject who has rights in criminal proceedings. However, compensation to the victim can only be done in the same ways known as before: through a civil lawsuit in criminal proceedings and a claim for damages in civil proceedings. With legal changes, civil lawsuits in criminal proceedings can include material and non-pecuniary damage. Thus, the only difference between the processes remains the place of their development (criminal or civil court) and the time (simultaneously with the criminal process or after its completion).

Material damage

The right to claim pecuniary damage is related to the meaning that the Civil Code has given to pecuniary damage¹⁵. To better understand this, a special help is given by the unifying decision of the High Court no. 12, dt. 14.09.2007. Based on this decision:

"Damage to health (biological damage) is, in essence, the violation of the good of health, physical and / or mental integrity of man."

Despite the fact that our Civil Code lists the damage to health as non-property damage, it should be noted that biological damage can be distinguished as property damage. The United Colleges, regardless of the type, emphasize that this damage is the object of search and compensation independent of other property and non-property damages suffered by the injured party. Thus, the compensation for the damage to health according to article 625 / a of the Civil Code is required independently of the claim

¹³ Fehmi Abdiu, "Civil lawsuit in the Albanian criminal process", Botim Pex, Tirana, 2003.

¹⁴ Article 59 of the CPC.

¹⁵ Articles 640-644.

for property damage of loss or reduction of ability to work, provided in article 641 of the Civil Code. At the same time, it is of legitimate legal interest to reduce the property of the injured party in the form of expenses he incurs for care and, in particular, for the treatment of damaged health as a continuous consequence of the same illegal fact ¹⁶.

Article 61 of the Code of Criminal Procedure provides: *"A person who has suffered damage from a criminal offense or his heirs may file civil lawsuits in criminal proceedings against the defendant or civil defendant, to seek the return of property and claim damages."*

In the Albanian case law and legal doctrine, different opinions have been expressed on the meaning of the damage in general, and the material damage in particular. This has been influenced by the previous understanding in the Albanian legislation of material and civil responsibility. Thus, for example, there are authors who think that only effective damages can be sought through a civil lawsuit in the criminal process and no other damages that necessarily come in the future, as a result of a crime committed by a civil defendant, or missing profit. ¹⁷.

Article 61 of the Code of Criminal Procedure deals with material damage in two aspects: in the return of property and compensation for damage. These terms are not the same. In our legislation, the return of property means the return of goods and property to the rightful owner of the latter. But, this term can not be equated with the meaning of material damage. Therefore, it is necessary to emphasize that the return of the item is a narrower category than the term "compensation for damage".

According to international standards, "Material damage" refers to financial or property loss, for example, medical, funeral and hospital expenses, loss of future earnings and benefits derived from employment, unpaid wages and costs. property damage ¹⁸. Material damage includes everything related to financial or property losses. This includes property damage to health, or what is today called biological damage. This position is in line with the treatment of some Albanian authors ¹⁹, as well as the unifying decision of the Supreme Court. From the above we can conclude that the purpose of the civil lawsuit in the criminal process can not be reduced only to the return of property to the rightful owner, but also to the compensation of material damage, which can be understood as property damage resulting from the criminal offense. , which includes all types of financial or property losses. These losses can not be fully covered even by the social security scheme.

Non-pecuniary damage

For a relatively long time non-pecuniary damage equated to moral damage. But over the last twenty years, first doctrine and then jurisprudence, has identified two new figures of non-pecuniary damage. In our country, the unifying decision of the United Colleges of the High Court no. 12, dt. 13 and 14 September 2007, gave new dimensions to the category of non-pecuniary damage by putting next to the figure of moral damage (whose non-pecuniary nature was consolidated) also the figure of existential damage and biological damage.

¹⁶ Marjane Tutulani , " Damage non -property (non -property), sub regulation legal of Civil Code ", published in "Jeta Juridike" , Nr. 1, August 2003.

¹⁷ Fehmi Abdiu, "Civil lawsuit in the Albanian criminal process", Botim Pex, Tirana, 2003.

¹⁸ Compensation for Trafficked and Exploited Persons in the OSCE Region, OSCE / ODHIR, 2008.

¹⁹ Marjane Tutulani , " Damage non -property (non -property), sub regulation legal of Civil Code ", published in "Jeta Juridike" , Nr. 1, August 2003.

Thus, through this decision it is accepted that in the category of non-pecuniary damage provided in Article 625 of the CC are included three figures:

- figure of moral damage;
- figure of biological damage;
- figure of existential damage.

It is accepted from the jurisprudence that moral damage (*pretium doloris* or *pecunia doloris*) is an internal, temporary manifestation of the unjust turmoil (*non iure perturbatio*) of the human state of mind, pain and spiritual suffering or a state of anxiety and spiritual torment. arising as a consequence of the illegal fact. Anyone who suffers violations in the field of health and his personality from illegal actions or omissions and through the fault of a third party has the right to seek compensation for the moral damage suffered. This right, in the capacity of the injured party, belongs individually (*ius proprius*) to each of the close relatives of the person who has lost his life or been injured in his health by the illegal fact, if their special family connection is established, sensory and coexistence. The moral damage suffered by the relatives themselves is considered as a consequence, an immediate and direct consequence of the same illegal fact.

On the other hand, damage to health (biological damage) is, in essence, the violation of good health, physical and / or mental integrity of man. This non-pecuniary damage, provided by letter " a " of Article 625 of the Civil Code, is the object of claim and compensation independent of other property and non-pecuniary damage suffered by the injured party due to the same illegal fact.

According to the aforementioned unifying decision, existential damage is the damage caused by the illegal fact of the third party violates the human personality rights by almost permanently damaging the expression and realization of the injured person as a human being, the manifestation of his personality in the world of external, objectively shaking his daily life and ordinary activities, causing deterioration of the quality of life by changing and upsetting the balance, behavior of life habits, personal and family relationships. Due to such a psycho-physical condition, the injured party can no longer perform certain activities that positively characterized his being or could characterize him positively in the future, forcing him to be pushed towards different solutions in life from those of desired and expected or in renouncing the latter due to the establishment of an illegal fact.

Identification of the civil plaintiff in the criminal process

The Code of Criminal Procedure (Article 62) sets out the stage and deadlines for the legitimation of a civil plaintiff in criminal proceedings. The legitimacy of the civil plaintiff can be done by the procedural body until the court proceedings have started. This term can not be extended in any case. It is clear that the legitimacy of the request will be made by the court before the main trial begins.

The above wording does not exclude the possibility for the request to be submitted to the prosecutor as a procedural body, which may also perform actions in relation to it, despite the fact that the court will further legitimize it, before the main trial begins. This practice actually helps the smooth running of the civil lawsuit in the criminal process and is a requirement that also comes from the obligations that the prosecutor has in relation to the victim throughout the criminal process.

In the first instance, at the stage of the investigation of the case, the victim should be assisted with information about her right to claim damages, as well as to accept in the file of the case, the civil lawsuit filed by her. Under Albanian law, the prosecutor has the obligation to inform the victim and to seek evidence regarding the civil lawsuit in the criminal proceedings. The effective exercise of this obligation would also assist the criminal court in reviewing the civil lawsuit, in order not to proceed with its segregation, which would turn the civil lawsuit in the criminal process into an unnecessary institute.

Separation of civil lawsuit

The criminal court is fully allowed to separate the civil lawsuit from the criminal process and send it for trial in the civil process. This can happen not only at the request of the parties, but also mainly, if the trial of the civil lawsuit complicates or delays the criminal process. In general, the separation of the civil lawsuit in the criminal process becomes the reason for the prolongation of the trial procedures. The Albanian practice in these cases has proven that it was almost impossible to make its trial in the civil process, without first completing the criminal process. The separation of the Civil Lawsuit in the Criminal Procedure is available with an intermediate decision. The court has the obligation to present this interim decision in its final decision in its reasoning part. This stems from the Court's obligation to respond to all procedural requests of the parties, but at the same time, stems from the right of the party to appeal the decision. In this case, the civil plaintiff in the criminal proceedings has the right to appeal the interim decision of the court in relation to his claim, together with the final decision. This right arises on the basis of the K.Pr.P, which provides that "the appeal of court orders, when not provided otherwise by law, can be made only by appeal against the decision."

The right to be represented by a lawyer

This right is an essential element of the right to compensation. To seek redress, victims must be aware of their rights and how to benefit from them. International standards even dictate the existence of measures that guarantee the safety and well-being of the person during the duration of the lawsuit procedure. This means that adequate housing, social assistance, legal advice, medical assistance and a residence permit are essential ancillary rights, without which the possibility of receiving compensation is limited. The civil lawsuit in the criminal process requires the active participation of the victim in the legal process. In general, this causes fear, especially if it is a violent crime, so free legal aid and representation are needed to increase the chances of her receiving the reward. The absence of a lawyer weakens her position and, in particular, informing the victim about her rights to seek redress. In this regard, civil society has an indisputable role, as it can advocate for victims, disseminate information and provide free legal aid.

Execution of compensation decisions

Enforcement of final court decisions is another issue that faces major barriers in practice. As in the civil process, even in cases where the compensation has been decided by the criminal court, the burden of following the procedures for the execution of the court decision is left to the victim. These proceedings are directed against the property of the perpetrator, which causes a shyness or fear for the victim. Also, the execution of the decision is encountered in other obstacles and barriers. For example, it may happen that the person or property is located in another place, the property may not be identifiable as it is hidden in other names, other court proceedings may be needed as it is in co-ownership, etc.

Opportunity to receive compensation from the state fund

Through the implementation of law, no. 9284, dated 30.09.2004 "On the prevention and crackdown on organized crime", or the so-called "anti-mafia law", in Albania was created the opportunity to provide a state compensation scheme for victims of trafficking. The importance of this law lay in the provision of special measures to crack down on property created as a result of organized crime activity.

"There is no denying the fact that the adoption of this law was the result of the failure of the usual criminal legislation to achieve significant results against the economic power of organized crime"²⁰.

The law had a special focus on compensating victims of organized crime. It envisioned, directly or indirectly, three forms of spending confiscated assets from which victims of organized crime, including victims of human trafficking, could benefit.

The first form was presented as individual indemnity. The law provided that confiscated cash and immovable property were used to compensate victims of organized crime (Articles 33 / a and 34 / a of the law).

The law also provided for the use of property for social purposes. This provided for the direct transfer of immovable property to the ownership of the local government units where the property was located, for the performance of their functions or for social purposes.

The law also created a special fund aimed at crime prevention and legal education, financially supporting projects that generally aim at the administration for institutional, social or public interest purposes of confiscated real estate, as well as for projects that are specifically addressed. in the assistance and rehabilitation of victims of trafficking in human beings (Article 39 of the law).

With its repeal and approval of Law no . 10 192, dated 3.12.2009 , " On the prevention and crackdown on organized crime and trafficking through preventive measures against property ", the first form of direct compensation to victims of trafficking was removed and only the funding of institutions or NGOs was left. for programs to help victims.

²⁰ Ardit Mustafaj, " Products of the work CRIMINAL from perspective legal - criminal and political criminal ", Tirana , 2007.

TOPIC: WOMEN'S RIGHTS, DOMESTIC VIOLENCE AS A GLOBAL PHENOMENON

Albana Jeminaj

As we all know, domestic violence is not something innate or unique to Albania. It is considered an old wound of society, often still unhealed, which has resisted the development that society has made throughout the world, not leaving behind the democratic development of Albanian society. In this unwanted reality, it is inevitable that every day marks another victim—a woman, mother, wife, or sister!

Beyond the numerous questions that never receive answers about other family members, the arrest and corresponding punishment of the perpetrator, in Albanian society, it is preferred to provide ideas, factual circumstances conveyed accurately or not, and an in-depth biography of the victim or perpetrator.

It is said that Mahatma Gandhi once stated, "The roots of violence are: wealth without work, pleasure without conscience, knowledge without character, business without morality, science without humanity, worship without sacrifice, and politics without principles."

In this sense, the causes that bring violence are numerous. The ongoing fight against this phenomenon is important.

Supporting women, strengthening their position in society, strongly activating their role, including them in decision-making, and making them key factors for the development of the country should be a priority for every current and future government.

Albania today has made significant progress in adopting relevant laws for the treatment of cases of domestic violence, by-laws, and referral mechanisms, with the aim of isolating and minimizing cases of domestic violence.

ABSTRACT:

Democracy has created new opportunities and possibilities for advancing the role of women in society. The spaces of freedom in our country have expanded. Statistics show that today over 4 million women in the world are victims of serious acts of violence - by lovers - or spouses.

Democracy has created new opportunities and possibilities for advancing the role of women in society. The spaces of freedom in our country have expanded.

KEYWORDS:

Democracy, the role of women, the impact of violence, the protection of women's rights, phenomena, multidisciplinary tables, professions, relevant institutions.

THEORETICAL ANALYSIS:

In this sense, Law No. 9669, dated 18.12.2006, entitled: "On measures against violence in family relationships" (amended by Law No. 9914, dated 12.5.2008, No. 10 329, dated 30.9.2010, 47/2018, dated 23.7.2018) (updated) in Article 1 states that:

"This law aims to:

1. Prevent and reduce domestic violence in all its forms through appropriate legal measures and other necessary measures.
2. Guarantee the protection of family members who are victims of domestic violence by legal and other necessary measures, paying special attention to children, the elderly, and persons with disabilities, as well as every individual subject to this law, according to Article 3, who presents special protection needs."

While in Article 2, this provision entitled "Object" states that:

"This law has as its object:

- a) The creation of a coordinated network of institutions responsible for the protection, support, and rehabilitation of victims, alleviation of the consequences, and prevention of domestic violence.
- b) The orientation of the work for the creation of structures and bodies responsible at the central and local levels for the support of victims and the prevention of domestic violence.
- c) The strengthening of the judicial system for taking protective measures against domestic violence.
- d) The provision/guarantee for victims of domestic violence of a fast, unconditional, and simple service in accordance with the law, at the court or other competent bodies for the implementation of the law."

While in Article 130/a of the Criminal Code, this provision entitled "Domestic Violence" (Added by Law No. 23/2012, dated 1.3.2012; amended in the last paragraph by Law No. 144, dated 2.5.2013, amended by Law No. 35/2020, dated 16.4.2020), it is determined that:

"Baiting, as well as any other act of physical or psychological violence, against a person who is a spouse, ex-spouse, cohabitant or former cohabitant, close relative (pre-born, post-born, brothers, sisters, uncles, aunts, nephews, nieces, children of brothers and sisters), or close relative (father-in-law, mother-in-law, son-in-law, daughter-in-law, sister-in-law, stepson, stepmother), or in relation to or former intimate relationship with the perpetrator of the criminal offense, resulting in the violation of his physical, psychosocial, and economic integrity, is punishable by imprisonment of up to three years.

A serious threat of murder or serious injury against a person who is a spouse, ex-spouse, cohabitant or former cohabitant, close relative (pre-born, post-born, brothers, sisters, uncles, aunts, nephews, nieces, children of brothers and sisters), or close relative (father-in-law, mother-in-law, son-in-law, daughter-in-law, sister-in-law, stepfather, stepmother), or in a relationship or former intimate relationship with the perpetrator of the criminal offense, resulting in the violation of his psychological integrity, is punishable by imprisonment of up to four years.

Intentional injury to a person who is a spouse, ex-spouse, cohabitant or former cohabitant, next of kin (pre-born, post-born, sibling, sister, uncle, aunt, nephew, niece, children of brothers and sisters), or close in-law (father-in-law, mother-in-law, son-in-law, daughter-in-law, sister-in-law, stepfather, stepmother), or in a relationship or former intimate relationship with the perpetrator

of the criminal offense, resulting in the violation of his psychological integrity, is punishable by imprisonment of up to four years.

Intentional injury to a person who is a spouse, ex-spouse, cohabitant or former cohabitant, close relative (firstborn, secondborn, brothers, sisters, uncles, aunts, nephews, nieces, children of brothers and sisters), or close relative (father-in-law, mother-in-law, son-in-law, daughter-in-law, sister-in-law, stepfather, stepmother), or in a relationship or former intimate relationship with the perpetrator of the criminal offense, which has caused temporary incapacity for work for more than nine days, is punishable by imprisonment of up to five years.

These same acts, committed repeatedly or in the presence of children, are punishable by one to five years of imprisonment."

CONCLUSIONS:

I think that the aforementioned law and the amendments to the Criminal Code have consistently brought about a limitation of domestic violence. There is a general commitment by society as a whole to reporting domestic violence. Similarly, there is a commitment by state police structures and various civil society organizations to support persons harmed by domestic violence. However, there is still a lot of work to be done. We are giving some of our opinions on the limitation of domestic violence.

RECOMMENDATIONS:

- Civil society and the community as a whole should report every case of domestic violence because these cases are often heard from different layers of society that are considered internal family matters.
- The legislation has room for improvement by increasing the minimum sentences for persons who commit domestic violence.

Courts should apply the highest margin of punishment provided by the law on domestic I've corrected the grammar mistakes while keeping the text unchanged:

