**INTERNATIONAL SCIENTIFIC CONFERENCE**

**"COOPERATIVES AND SUSTAINABLE DEVELOPMENT:**

**ECONOMIC, SOCIAL, AND ENVIRONMENTAL DIMENSIONS"**

**(CSDESED 2025)**

South-West University "Neofit Rilski"

Trakya University – Edirne

National Union of Labour-Producers' Cooperatives in Bulgaria

Blagoevgrad, Bulgaria, 8–9 October 2025

**Cooperatives and Social Inclusion**

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# Cooperatives and Social Inclusion

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# PLENARY SESSION:

# COOPERATIVES AND SUSTAINABLE DEVELOPMENT – CHALLENGES AND PERSPECTIVES

# THE ACTORS OF THE SOCIAL AND SOLIDARITY ECONOMY IN THE ERA OF ARTIFICIAL INTELLIGENCE: CHALLENGES AND OPPORTUNITIES

**Nikolay Marin**[1]

Received: 10.09.2025, Accepted: 10.10.2025

***Abstract***

*This report examines the role of actors within the social and solidarity economy in the context of artificial intelligence (AI) development in Europe. It analyzes the challenges facing European competitiveness in the AI field compared to the United States and China, the opportunities for integrating AI technologies into the cooperative sector, and the need to develop new competencies within the framework of a just transition toward a high-technology economy. The report emphasizes the importance of the European Pillar of Social Rights and the New European Skills Agenda as foundations for sustainable technological development.*

***Keywords****: social economy; solidarity economy; artificial intelligence; digital skills; cooperatives; fair transition; social enterprises; disability inclusion; European integration*

***JEL Codes:*** *P13, Q13*

## Introduction

The Fourth Industrial Revolution, marked by the widespread deployment of artificial intelligence, presents European economies with unprecedented opportunities and serious challenges (Borzaga & Galera, 2016). In this context, the actors of the social and solidarity economy—cooperatives, mutual societies, foundations, and social enterprises—are positioned at the center of debates on the future of the European economic model. According to the European Economic and Social Committee (2017), the social economy in Europe accounts for a significant share of economic activity, comprising more than 2.8 million enterprises and organizations that employ over 13.6 million people. These actors are characterized by prioritizing social objectives over profit maximization, democratic governance, and reinvesting profits to achieve sustainable development.

## Europe's Investment Deficit in Artificial Intelligence

Europe lags significantly behind its major competitors in AI investment, placing the continent at a disadvantage in the global technology race (OECD, 2021). A detailed analysis of investment flows reveals an alarming picture of Europe's technological gap. According to the OECD (2021) and the European Commission (2022), Europe invests eight times less

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than the United States and almost three times less than China in absolute values. More concerning is the ratio relative to GDP, where the European Union allocates only 0.15% of its GDP to AI research, compared to 0.68% in the United States and 0.31% in China.

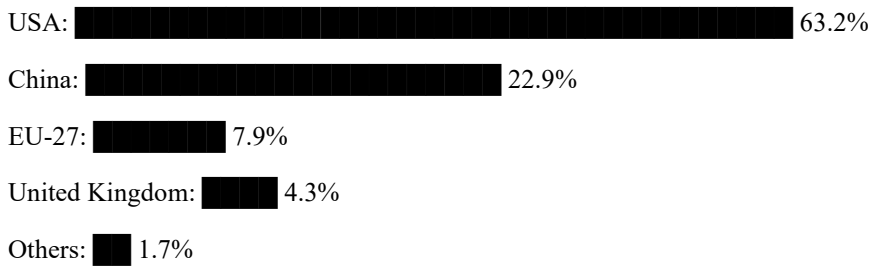
*Table 1: Comparative Investments in AI Research and Development (2023)*

| Country | Annual Investments (USD Billion) | Share of GDP (%) | Number of AI Startups | AI Patents (2022) |
|---|---|---|---|---|
| **USA** | 47.2 | 0.68 | 4,643 | 18,365 |
| **China** | 17.1 | 0.31 | 1,446 | 30,507 |
| **EU-27** | 5.9 | 0.15 | 827 | 5,043 |
| **United Kingdom** | 3.2 | 0.35 | 674 | 2,156 |
| **South Korea** | 2.1 | 0.41 | 234 | 4,021 |

*Source:* OECD (2021), European Commission (2022), McKinsey Global Institute (2021)

The data from the World Economic Forum (2021) and OECD AI Policy Observatory (2021) clearly demonstrate that the European Union invests significantly less than its major competitors. Graph 1 illustrates the dramatic concentration of global AI investments in two main poles—the United States and China, which together control over 86% of global resources in this field. This concentration has profound geopolitical implications and places other regions, including Europe, in a position of technological dependence (World Economic Forum, 2021).

*Graph 1: Distribution of Global AI Investments by Region (2023)*




*Source:* World Economic Forum (2021), OECD AI Policy Observatory (2021)

Particularly alarming is that the EU, with a population of 450 million and a GDP of 15.6 trillion euros, invests less in AI than individual American states like California (Lee, 2018). This disproportionality not only limits European opportunities for technological leadership but also creates risks to the continent's strategic autonomy in critical sectors such as healthcare, transport, and security. For the social economy, this means that European cooperatives and social enterprises will be forced to rely on technologies developed in different cultural and institutional contexts, which may not meet their specific needs and

values. American AI solutions are designed primarily for profit maximization, while Chinese technologies often prioritize social control over individual autonomy (Acemoglu & Restrepo, 2020).

This imbalance manifests in multiple dimensions of European competitiveness. On the one hand, limited investment leads to "brain drain," as the most talented European researchers and entrepreneurs migrate to Silicon Valley or other technology hubs with better funding (Russell, 2019). On the other hand, European companies become dependent on American and Chinese AI technologies, which undermines the continent's strategic autonomy.

*Table 2: Comparison of Key AI Indicators by Sector*

| Sector | USA Adoption (%) | China Adoption (%) | EU Adoption (%) | EU Investments (Million EUR) |
|---|---|---|---|---|
| **Finance** | 87% | 79% | 52% | 847 |
| **Healthcare** | 76% | 68% | 34% | 612 |
| **Manufacturing** | 71% | 83% | 41% | 1,234 |
| **Commerce** | 69% | 74% | 38% | 523 |
| **Social Economy** | 23% | 31% | 12% | 89 |

*Source:* European Commission (2022), Acemoglu & Restrepo (2020), McKinsey Global Institute (2021)

Particularly affected are small and medium enterprises, including actors in the social economy, which traditionally rely on more limited financial resources (Pestoff, 2019). While large corporations can afford their own AI departments or partnerships with technology giants, cooperatives and social enterprises remain on the periphery of technological transformation.

According to Acemoglu & Restrepo (2020), the European lag in AI investments has deep structural roots that go beyond simple financing. The fragmented European market creates barriers to scaling AI solutions, while different national regulations complicate cross-border technology integration. In the United States, a unified market of 330 million consumers enables AI companies to quickly reach critical mass, whereas European startups must navigate 27 distinct legal systems and regulatory environments (World Economic Forum, 2021).

Cultural differences also play a significant role (Lee, 2018). American entrepreneurial culture tolerates higher risks and more aggressive investment strategies, while European investors traditionally prefer more conservative approaches. This is particularly evident in venture funding, where the average size of European AI investments is significantly smaller than American equivalents.

Limited access to AI technologies particularly severely affects cooperatives and other social economy actors, as they are characterized by unique organizational structures and value systems (International Co-operative Alliance, 2020). Unlike traditional corporations whose primary goal is profit maximization for shareholders, social enterprises balance

financial sustainability with achieving social goals. This creates specific challenges. Cooperatives have restricted access to capital because they cannot attract external investors through equity sales. Simultaneously, existing AI solutions are often designed for profit maximization, which is not always compatible with social economy principles such as democratic decision-making and prioritizing social outcomes.

*Table 3: Barriers to AI Adoption in the Social Economy*

| Type of Barrier | Description | Relative Importance (1-5) | Possible Solutions |
|---|---|---|---|
| **Financial** | Limited access to capital | 5 | Targeted government funds, EU programs |
| **Technical** | Lack of AI expertise | 4 | Training programs, consulting services |
| **Organizational** | Complex decisions due to democratic governance | 3 | AI tools adapted for collective decisions |
| **Cultural** | Resistance to automation | 3 | Educational campaigns, gradual implementation |
| **Regulatory** | Unclear legal framework | 2 | Specialized legislation |

*Source*: International Co-operative Alliance (2020), Pestoff (2019), Social Economy Europe (2021)

Concrete examples illustrate these challenges. Agricultural cooperatives in Southern Europe, which unite thousands of small farmers, could significantly improve their efficiency through AI analysis of meteorological data, yield forecasting, and supply chain optimization (Defourny & Nyssens, 2021). Simultaneously, the democratic decision-making structure in these cooperatives makes implementing new technologies slower and more complex than in corporate structures. Social enterprises in the healthcare sector face additional ethical challenges related to AI use when working with vulnerable groups. Algorithms for decision support in healthcare can perpetuate existing inequalities if not designed with special attention to social justice and inclusion (Floridi et al., 2018).

### Cooperatives as Drivers of Fair Transition: Focus on People with Disabilities

Cooperatives represent a unique socio-economic entity that can function as a bridge between technological innovations and social inclusion in the age of artificial intelligence (Borzaga & Galera, 2016). Unlike traditional corporate structures, whose primary motive is profit maximization for shareholders, cooperatives are guided by principles of mutual aid, democratic governance, and community care. In the context of a fair transition to an AI-based economy, cooperatives possess several critically important characteristics that position them as natural defenders of social justice (Kerlin, 2013):

- Democratic governance ensures that decisions on implementing new technologies involve all affected parties, including the most vulnerable groups. This is particularly important when implementing AI systems that may have drastic consequences for employment and social relationships.

- Priority for social goals means that cooperatives can balance technological efficiency with human well-being, without sacrificing one for the other.
- Local embeddedness allows cooperatives to adapt technological solutions to the specific needs and conditions of local communities.

Automation and AI development create risks of mass unemployment and social exclusion, particularly for people with disabilities, older workers, and those with low qualifications (Mhlanga, 2021). Cooperatives can function as "shock absorbers" against these adverse effects by creating alternative employment models, developing adaptive business models, and facilitating solidarity-based resource sharing.

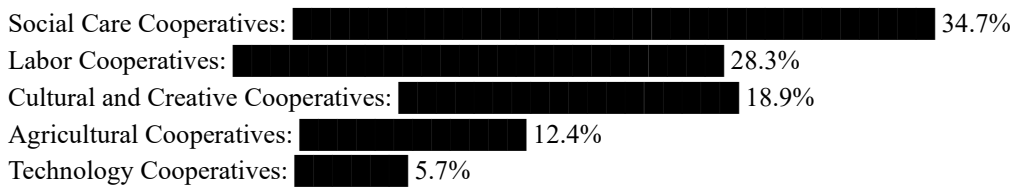
*Table 4: Participation of People with Disabilities in the Social Economy by Country (2023)*

| Country | People with Disabilities | Share of Total Employment (%) | Average Monthly Salary (EUR) | Job Satisfaction (1-10) |
|---|---|---|---|---|
| **Germany** | 287,000 | 18.2 | 1,845 | 7.8 |
| **France** | 156,000 | 12.8 | 1,623 | 7.4 |
| **Italy** | 123,000 | 15.6 | 1,334 | 7.6 |
| **Spain** | 98,000 | 14.1 | 1,288 | 7.2 |
| **Netherlands** | 78,000 | 22.3 | 2,134 | 8.1 |
| **Belgium** | 67,000 | 19.7 | 1,923 | 7.9 |
| **Bulgaria** | 12,000 | 6.8 | 548 | 6.4 |
| **Poland** | 89,000 | 11.2 | 756 | 6.8 |
| **Sweden** | 45,000 | 21.5 | 2,456 | 8.3 |
| **EU-27** | 1,187,000 | 14.6 | 1,456 | 7.3 |

*Source*: Eurostat (2023), European Disability Forum (2023), Social Economy Europe (2023)

According to Eurostat (2023) and the European Disability Forum (2023), data reveal significant differences in the integration of people with disabilities into the social economy across European countries. Scandinavian and Northern European countries demonstrate the highest levels of inclusion, with Sweden (21.5%) and the Netherlands (22.3%) leading the ranking. Bulgaria significantly lags, with only 6.8%, reflecting both structural problems in social policy and limitations in the development of the social economy as a whole. The correlation between higher participation rates and higher job satisfaction scores (Sweden: 8.3; Netherlands: 8.1) suggests that quality integration is as important as quantity.

*Graph 2: Distribution of People with Disabilities by Type of Cooperatives in EU-27*




*Source:* International Co-operative Alliance (2023), own calculations

The development of artificial intelligence creates a complex picture of risks and opportunities for people with disabilities (Mhlanga, 2021). On one hand, AI technologies can dramatically improve quality of life through assistive technologies, personalized services, and automation of routine tasks. On the other hand, algorithmic discrimination and workplace automation can deepen existing inequalities (European Disability Forum, 2023). According to Accenture Research (2023), the analysis shows a mixed picture, with the most concerning negative impact in employment (-2.3), due to the fact that many people with disabilities work in professions with routine tasks susceptible to automation.

*Table 5: Impact of AI on People with Disabilities - Analysis by Areas*

| Area | Positive Effects | Negative Effects | Net Impact | Priority for Action |
|---|---|---|---|---|
| **Employment** | Assistive tech for work | Automation of accessible jobs | -2.3 | Very High |
| **Education** | Personalized learning | Digital divide | +1.7 | High |
| **Healthcare** | AI diagnosis and treatment | Algorithmic discrimination | +0.8 | Medium |
| **Mobility** | Autonomous vehicles | Complex interfaces | +2.1 | Medium |
| **Social Participation** | Digital platforms | Tech isolation | -0.6 | High |
| **Service Access** | Automated services | Loss of human contact | -1.2 | High |

Scale: -5 (very negative) to +5 (very positive)

*Source:* European Disability Forum (2023), Accenture Research (2023)

Social cooperatives have the potential to become pioneers in developing AI technologies that are designed from the outset to be accessible and inclusive (Winfield & Jirotka, 2018). Unlike mainstream technology companies that often add accessibility features as an "add-on" to finished products, cooperatives can place the needs of people with disabilities at the center of the design process. Examples of innovative cooperative AI solutions include: intelligent communication systems developed by cooperatives in Germany and the Netherlands that translate sign language in real-time; predictive models for healthcare developed by Scandinavian social health cooperatives; and employment matching platforms created by Italian and Spanish labor cooperatives (International Co-operative Alliance, 2020).

### The Bulgarian Context: Challenges and Opportunities

Bulgaria has a rich history of the cooperative movement dating from the late 19th century. Still, the contemporary cooperative sector faces numerous structural challenges that limit its potential for social transformation (Ministry of Economy, 2023). According to the National Statistical Institute (2023) and the Ministry of Economy (2023), Bulgaria's cooperative sector significantly lags behind European standards across all key indicators.

*Table 6: Cooperative Sector in Bulgaria - Key Indicators (2023)*

| Indicator | Bulgaria | EU Average | Position in EU |
|---|---|---|---|
| **Registered cooperatives** | 8,247 | 42,156 | 19/27 |
| **Active cooperatives** | 2,134 | 28,943 | 23/27 |
| **Employees in cooperatives** | 28,400 | 156,780 | 21/27 |
| **Share of GDP (%)** | 0.8 | 3.2 | 26/27 |
| **Average age of members** | 58.7 | 51.2 | 24/27 |
| **People with disabilities** | 1,920 | 8,746 | 22/27 |
| **Digitalized cooperatives (%)** | 12.3 | 67.8 | 27/27 |

*Source*: NSI (2023), Ministry of Economy (2023), own calculations

The data reveals a troubling picture of the Bulgarian cooperative sector, which significantly lags behind European standards on all key indicators. Particularly alarming is that Bulgaria ranks last in the digitalization of cooperatives (12.3% versus the European average of 67.8%), raising serious questions about the sector's readiness to adapt to AI-era challenges (European Commission, 2022). Bulgarian legislation on cooperatives is fragmented and outdated, creating significant barriers to the development of modern cooperative forms capable of integrating AI technologies.

*Analysis of Key Legal Problems*

The main legal problems include: the Law on Cooperatives (1999) is outdated and does not account for modern realities of the digital economy. Key issues are a lack of provisions for digital platforms and electronic governance, limited opportunities for hybrid business models, unclear rules for intellectual property in cooperative contexts, and the absence of regulation for data usage and AI technologies (Law on Cooperatives, 1999).

There is a fundamental contradiction between the philosophy of Commercial Law, which prioritizes profit as the primary goal of commercial enterprises, and the principles of cooperative economics, which balance economic and social goals (Commercial Law, 2023). This creates legal ambiguity for social cooperatives attempting to combine commercial activity with social objectives.

*Table 7: Comparison between Commercial Enterprises and Cooperatives in Bulgarian Law*

| Characteristic | Commercial Enterprise | Cooperative | Proposed Changes |
|---|---|---|---|
| **Primary Goal** | Profit maximization | Service to members | Hybrid goal including AI ethics |
| **Governance** | According to capital share | One member - one vote | Digital participation and AI support |
| **Profit Distribution** | According to shares | According to participation | Algorithm-optimized distribution |
| **Accountability** | Standard accounting | Social and financial | Integrated AI metrics |
| **Tax Status** | Standard corporate | Special benefits | Incentives for AI innovations |

*Source*: Commercial Law (2023), Law on Cooperatives (1999), own legal analysis

Bulgaria requires modern legislation specifically regulating social cooperatives and their relationships with AI technologies. The proposed legislation should include: definition of digital social cooperatives as hybrid organizations combining commercial activity with social goals through AI; rules for ethical AI use in cooperative contexts, including member data protection; special tax regime for cooperatives investing in socially responsible AI technologies; and mechanisms for digital participation in cooperative governance (Ministry of Economy, 2023).

**Opportunities for Integrating AI in the Cooperative Sector**

According to Brynjolfsson & McAfee (2021) and Parker et al. (2016), the implementation of artificial intelligence in the cooperative sector does not represent merely a technological superstructure on existing processes but a fundamental opportunity to rethink how social enterprises function, make decisions, and achieve their goals. The unique structure of cooperatives, based on principles of democratic governance, mutual aid, and social responsibility, creates specific opportunities for innovative AI applications.

The first dimension concerns optimizing collective decision-making processes (Russell, 2019). Traditionally, democratic structures in cooperatives are characterized by slower consensus processes that can be significantly improved through AI tools for preference analysis, scenario modeling, and consequence prediction. Intelligent systems can analyze historical data on decisions and their outcomes, identifying patterns and correlations not obvious to human perception (Chui et al., 2018). This enables cooperatives to maintain democratic processes while improving decision quality and speed.

The second essential aspect concerns the creation of new forms of solidarity and mutual aid through digital platforms (Parker et al., 2016). AI algorithms can identify opportunities for resource sharing between different cooperatives, recommend optimal collective purchasing models, or create recommendations for mutual aid based on complementary needs and capacities of members. These applications can strengthen social bonds while improving operational efficiency.

*Table 8: AI Applications in Different Aspects of Cooperative Management*

| Management Process | Traditional Approach | AI-Enhanced Approach | Expected Improvements |
|---|---|---|---|
| **Strategic Planning** | Annual meetings, surveys | Continuous data analysis, scenario modeling | 40-60% more accurate forecasts |
| **Financial Management** | Monthly reports, manual analysis | Automatic trend detection and anomalies | 30-50% reduction in financial risks |
| **Member Management** | Periodic meetings, newsletters | Personalized communication, needs prediction | 25-35% increase in engagement |
| **Operational Efficiency** | Standardized processes | Adaptive systems, real-time optimization | 20-40% efficiency improvement |

*Source*: Brynjolfsson & McAfee (2021), Parker et al. (2016), Chui et al. (2018)

### European Pillar of Social Rights and Fair Transition

The European Pillar of Social Rights, proclaimed in 2017 and subsequently converted into an action plan in 2021, represents an ambitious vision for social Europe that places people at the center of economic development (European Commission, 2021a). In the context of technological transformation and artificial intelligence deployment, the Pillar provides a critically important framework for ensuring a fair and inclusive transition to a high-tech economy. According to Sabato et al. (2017) and Floridi et al. (2018), the twenty principles of the Pillar are organized around three key dimensions that directly relate to AI-era challenges.

*Table 9: Principles of the EU Pillar and Their Relevance to AI in the Social Economy*

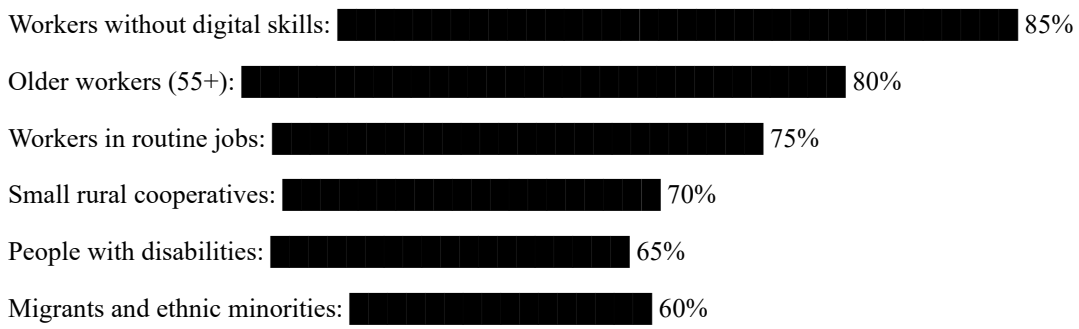
| Principle | Relevance to AI | Application in Social Economy | Level of Importance (1-5) |
|---|---|---|---|
| **Education and Lifelong Learning** | Critical for AI skills | Continuous member training | 5 |
| **Gender Equality** | AI algorithms without discrimination | Fair representation in AI decisions | 4 |
| **Equal Opportunities** | Access to AI technologies | Democratizing AI in social economy | 5 |
| **Active Employment Support** | Reskilling during automation | Support for cooperative workers | 4 |
| **Safe and Adaptive Employment** | Flexibility in AI era | Workplace adaptation | 3 |
| **Fair Remuneration** | Fair AI benefits distribution | Democratic distribution in cooperatives | 4 |

*Source*: European Commission (2021b), Sabato et al. (2017), Floridi et al. (2018)

Technological transition to AI-based economy carries unprecedented risks of increasing social inequalities and excluding vulnerable groups from digitalization benefits (Mhlanga, 2021). First, there is risk of "digital divide" where access to AI technologies and

skills become new sources of social stratification. Second, AI-driven workplace automation creates mass unemployment risks, particularly affecting lower-skilled and older workers. Third, algorithmic discrimination represents a new form of social exclusion where AI systems reproduce and amplify existing prejudices (Floridi et al., 2018).

*Graph 3: Risk Groups in AI Transformation*




*Source*: Mhlanga (2021), OECD (2022), Eurofound (2020)

The unequal distribution of AI transformation risks among different social groups reveals a worrying trend toward deepening existing inequalities. The highest-risk group—workers without digital skills (85% risk level)—represents approximately 37% of the European workforce according to Eurostat data (OECD, 2022). Particularly concerning is the high risk for older workers (80%), as this group often possesses valuable experience and institutional memory that could be lost through overly aggressive automation. In the social economy context, this is especially problematic since many cooperatives rely on long-term members with rich practical experience.

**Forming New Knowledge and Skills**

According to Müller (2020) and Jobin et al. (2019), the age of artificial intelligence requires fundamental reconceptualization of knowledge and skills, transcending traditional boundaries between technical and humanities disciplines. New competencies are characterized by interdisciplinarity, adaptability, and ability for continuous updating in conditions of accelerated technological change. Digital skills in contemporary context are not limited to basic computer literacy or knowledge of specific software applications. They include deeper understanding of how data is collected, processed, and interpreted, ability to work with intelligent systems, and critical evaluation of algorithmic results (Goldfarb & Tucker, 2019).

*Table 10: New Competencies and Their Applicability in Social Economy*

| Competency | Technical Content | Social Application | Degree of Importance | Time to Acquire |
|---|---|---|---|---|
| **AI Literacy** | Understanding ML algorithms | Ethical AI use | Critical | 6-12 months |
| **Data Analysis** | Python/R, statistics | Social impact measurement | Very High | 3-6 months |
| **Digital Ethics** | Bias detection, fairness | Fair algorithms | Critical | 2-4 months |
| **Systems Thinking** | System architecture | Holistic problem approach | High | 6-12 months |
| **Human-AI Interaction** | UX/UI design | Accessible technologies | Medium | 3-6 months |
| **Cybersecurity** | Cryptography, protocols | Member data protection | High | 4-8 months |

*Source:* European Commission (2020), Jobin et al. (2019), Müller (2020)

Beyond technical skills, the AI era requires development of fundamentally new types of competencies that integrate technological understanding with humanities values and social priorities (Zuboff, 2019). Critical thinking in AI context means ability to evaluate reliability, biases, and ethical implications of algorithmic decisions, as well as recognizing situations where human judgment is irreplaceable. Creativity and innovative thinking are redefined in machine learning epoch. As AI systems become increasingly capable of generating content and solutions based on existing patterns, human creativity focuses on ability to pose new questions, define unexpected problems, and create meaningful connections between different knowledge areas.

Interdisciplinary work ceases to be merely desirable characteristic and becomes absolute necessity (Brynjolfsson & McAfee, 2021). Complexity of modern AI systems requires collaboration between technical specialists, social scientists, ethicists, psychologists, economists, and civil society representatives. Ability to communicate effectively between different professional cultures and terminologies becomes critically important (Parker et al., 2016). Managing change in conditions of continuous technological development requires new approaches to leadership and organizational adaptability, including ability to anticipate future trends, manage uncertainty, and lead organizations through complex transformation processes without losing core values and mission.

The New European Skills Agenda, adopted in 2020 as part of a broader strategy for European competitiveness, represents a comprehensive framework for transforming European education and training systems (European Commission, 2020). The Agenda is based on an ambitious goal that by 2030, at least 60% of adults

in the EU participate in training every year, achieving fundamental change in the approach to lifelong learning (European Parliament, 2021).

The Agenda architecture is structured around 12 flagship actions covering the entire spectrum from formal and non-formal education to corporate training and self-directed skill development. Focus on green and digital skills reflects EU strategic priorities for achieving climate neutrality by 2050 and building a leading position in the global digital economy. In the social economy context, this dual focus creates unique opportunities for developing innovative solutions combining ecological sustainability with technological innovations.

*Table 11: Flagship Actions of the EU Skills Agenda and Their Relevance to Social Economy*

| Flagship Action | Target by 2030 | Relevance to Social Economy | Budget (Million EUR) |
|---|---|---|---|
| **Pact for Skills** | 6 million trained people | Cooperative training partnerships | 1,200 |
| **Strengthening Skills Intelligence** | 100% EU regional coverage | Data on skill needs | 150 |
| **EU Support for Strategic Actions** | 27 national plans | Including social economy | 2,300 |
| **VET Recommendation** | 50% VET participation | Vocational training for cooperatives | 800 |
| **European Universities Initiative** | 60 universities | Research on social economy | 1,100 |
| **Skills for Twin Transitions** | 70% with basic digital skills | Green and digital skills | 1,800 |

*Source*: European Commission (2020), European Parliament (2021)

Specialized training modules for social economy managers and employees represent strategic priority requiring deep understanding of sector-specific needs and challenges (UN Department of Economic and Social Affairs, 2020). These programs must integrate technical competencies with principles of democratic governance, social responsibility, and sustainable development. Programs for applying AI in social context must transcend technical aspects and include in-depth exploration of ethical dilemmas connected with automating decisions affecting human life. This includes understanding concepts like algorithmic fairness, machine learning transparency, and methods for minimizing discriminatory effects of AI systems.

*Table 12: Specialized Training Modules for the Social Economy*

| Training Module | Duration | Target Group | Key Competencies | Methodology |
|---|---|---|---|---|
| **AI Ethics for Social Leaders** | 40 hours | Cooperative managers | Technology ethical assessment | Case studies, workshops |
| **Data for Social Impact** | 60 hours | Analysts and planners | Social metrics, impact measurement | Practical projects |
| **Digital Transformation in Cooperatives** | 80 hours | Technical managers | Change management, systems thinking | Simulations, peer learning |
| **Blockchain for Transparency** | 30 hours | Financial managers | Distributed technologies, accountability | Hands-on labs |
| **Digital Participation and Democracy** | 50 hours | Member coordinators | E-governance, digital voting | Democratic experiments |

*Source*: UN Department of Economic and Social Affairs (2020)

Creating sustainable and productive partnerships between educational institutions and social economy actors represents fundamental mechanism for practical application of European Skills Agenda (Defourny & Nyssens, 2021). These partnerships must transcend traditional academic collaboration models and create truly integrated ecosystems for knowledge development and innovation. Universities and research centers provide theoretical foundation and methodological expertise, while cooperatives and social enterprises provide real case studies, testing environments for new technologies, and direct feedback on practical applicability of educational programs. This model of mutual enrichment creates opportunities for developing innovative pedagogical approaches combining academic rigor with practical relevance.

**Policy Recommendations**

Effective addressing of challenges associated with integrating artificial intelligence into the social economy requires coordinated European-level policy efforts that transcend traditional sectoral approaches and create synergies across policy areas (European Commission, 2021b).

Increasing AI investments through targeted programs for the social economy should become a central element of the following EU multiannual financial framework (European Commission, 2022). This includes creating specialized financial instruments with a budget of at least 2 billion euros for the 2028-2034 period, supporting AI projects in cooperatives and social enterprises. Creating a

European platform for sharing AI technologies among cooperatives represents an innovative approach to democratizing access to advanced technologies. This platform should serve as an open marketplace where social enterprises can find, adapt, and share AI solutions tailored to their needs, with mechanisms for peer-to-peer learning and technical support.

National governments play crucial role in transposing European policies into concrete actions adapted to specific conditions of each country (Kerlin, 2013). Including social economy in national AI strategies should not be treated as addition to existing plans but as integral part of national visions for digital transformation. This requires reformulation of existing national AI strategies to include specific goals, measures, and indicators for social economy development. National plans should establish quantitative targets such as percentage of cooperatives using AI technologies by specific date and provide concrete mechanisms for their achievement (Ministry of Economy, 2023).

Challenges associated with integrating AI into social economy transcend national borders and require international coordination and cooperation (Aghion et al., 2017). Europe should take leading role in global discussions about ethical AI use and corporate social responsibility. Cooperation with international organizations such as United Nations, ILO, and OECD can help disseminate European social economy model and ethical AI use globally. This includes sharing best practices, developing international standards, and supporting developing countries in building their own social economy sectors.

**Conclusion**

The actors of social and solidarity economy find themselves at epicenter of one of most fundamental transformations in contemporary European history (Zuboff, 2019). The Fourth Industrial Revolution, characterized by exponential development of artificial intelligence, machine learning, and autonomous systems, represents both unprecedented opportunity for techno-social advancement and existential threat to traditional models of economic organization prioritizing human welfare over pure efficiency.

This research reveals multiple critical dimensions of this complex process requiring immediate and coordinated attention from European policymakers. Most alarming fact concerns Europe's dramatic lag in global race for technological superiority in artificial intelligence. Data unequivocally demonstrate that with annual investments of only 5.9 billion dollars—eight times less than USA (47.2 billion dollars) and almost three times less than China (17.1 billion dollars)—the European

Union not only lags quantitatively but risks losing opportunity to shape its own technological trajectory aligned with its unique values and social priorities (OECD, 2021).

According to Bessen (2019) and Frey & Osborne (2017), unequal distribution of AI transformation benefits among different social groups constitutes fundamental challenge to social cohesion. Workers without digital skills (85% risk level), workers over 55 (80% risk), and small rural cooperatives (70% risk) find themselves in critically vulnerable positions potentially leading to systematic exclusion from technology benefits. These data underscore fundamental importance of European Pillar of Social Rights as conceptual and practical framework for guaranteeing fair transition to high-tech economy.

Successful integration of AI in social economy will not be simply technical achievement—it will represent proof that combining technological innovations with social justice, democratic participation, and sustainable development principles is possible. In this sense, social economy can become laboratory for European civilization's future—place demonstrating that humane and fair technological progress is possible. Historical responsibility toward future generations requires European leaders to convert this opportunity into reality. Time for action is now—every year of delay increases risk that Europe loses opportunity to shape its own technological trajectory and becomes passive consumer of technologies developed elsewhere with different values and priorities (Russell, 2019; Brynjolfsson & McAfee, 2021).

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# THE ROLE OF THE NATIONAL UNION OF LABOR-PRODUCTION COOPERATIVES IN THE DEVELOPMENT OF THE COOPERATIVE MOVEMENT IN BULGARIA

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***Abstract***

*In my report, I will examine the development of labor-production cooperatives (LPCs), which are perhaps the most important part of the cooperative movement, emphasizing the role of the National Union of Labor-Production Cooperatives (NULPC). My main thesis is that from its establishment until today, the Union has been and is a pillar of the cooperative movement and is an active participant in what we today define as the social economy. In order to best understand and implement the future development of labor and production cooperatives, the leadership of the National Union of the LPCs actively participates in working groups, commissions, committees and councils to protect the interests of the Union and its members.*

**Keywords:** National Union of Labor-Production Cooperatives; the development of the cooperative movement in Bulgaria

**JEL Codes**: P13, Q13

## Introduction

Bulgaria is a country with rich experience in the cooperative movement of Europe. As is known, the first cooperatives were established at the end of the 19 th century. This conference will outline the main characteristics of this experience in order to explore the contemporary dimensions and challenges facing cooperatives in Bulgaria.

In my report, I will examine the development of labor-production cooperatives (LPCs), which are perhaps the most important part of the cooperative movement, emphasizing the role of the National Union of Labor-Production Cooperatives (NULPC). The LPCs and their union have changed their names over the years, but they have retained their essence and are actively present in the economic and social history of the country.

My main thesis is that from its establishment until today, the Union has been and is a pillar of the cooperative movement and is an active participant in what we today define as the social economy.

The first Bulgarian LPC was established on October 1, 1895 in the town of Gabrovo, where a group of craftsmen founded the sewing cooperative society "Napredak". At that time, the cooperative was called a crafts cooperative. The statute of this cooperative states:

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"...to assist in to increase the mastery of the craft of its members, and to grant scholarships for specialization in the country and abroad to members who need and wish to improve." (Andreev, 2012, pp. 29– 35).

From 1895 to today, the main characteristic of the LPCs has been invariably present - production, mastery of the craft, the desire for improvement and, of course, the social effect. In modern terminology, labor-productive cooperatives are one of the most important and active entities of the social and solidarity economy in Bulgaria. We must preserve and develop this essence of the LPCs.

The innovativeness of craft cooperatives is revealed in the fact that, in addition to the production, social and economic functions they performed, they also modernized the crafts of that time.

**The beginning of the development of the cooperative movement in Bulgaria**

Despite the hard work of the members of the first cooperatives, their existence did not last long, and the main reason was that they operated in a hostile economic environment, without the necessary legal and regulatory framework and assistance from the state. But what should be especially emphasized is that craft cooperatives have never managed to create a union that would represent them and protect their interests before the state.

The laws on the regulation of guilds (1897) and on the organization of crafts and guild associations (1903) did not help the development and strengthening of craft associations. They retained the old principle of mandatory guild membership.

It was not until 1907, with the adoption of the first Law on Cooperative Associations, and in 1910, with the Law on the Organization and Support of Crafts, that the state policy towards the artisan class changed. Along with other measures, cooperatives were also perceived as a means for the successful development of artisan production, principles of production organization (Pandov,1940, pp.11). And something very important – the law provides for protection and benefits for craft cooperatives, stipulated in the Law for the Protection of Local Industry. Every craft production cooperative can use all the benefits provided for industrial enterprises, without requiring a minimum capital and machinery for production. Duty-free import of machinery and parts for them, raw materials and materials for production, exemption from taxes, use of reduced fees on trains for the transportation of raw materials, materials and finished products, etc. is provided (Dimov, 1915, p. 5).

In short, the necessary prerequisites for the development of artisan cooperatives were created. And their appearance was not long in coming. Numerous artisan cooperatives emerged in various industries – tailoring, shoemaking, leatherworking, carpentry, upholstery, ironwork, construction, barbering, electrical installation, stonemasonry, etc.

The wars from 1912 to 1918 and the two national catastrophes left their negative mark on the economic life of Bulgaria, one of the most affected were the Bulgarian craftsmen and their cooperatives. Many of their members died in the fronts, and those who return to their

workshops find nothing – neither materials, nor finished goods, nor even their tools. Most often, they are simply sold off so that their families can survive.

One of the main economic and social problems facing the country is how to help artisans and their cooperatives. In 1919, a Law on Artisans Victims of the War was adopted. Among the artisan production cooperatives, the largest number is in iron, copper and tinsmiths - 12, shoemakers - 11, furniture - 10, printing - 7, tailoring - 6, wheelwrighting and ironworking - 5, textile - 3, leather and saddlery - 2, furriers – 2 (Statistics of cooperative associations in the Kingdom of Bulgaria for 1923, 1923, p. 12) There are also boat-making, pottery and other cooperatives.

On June 8, 1919, an extremely important event took place. On the initiative of Hristo Hinkov, 12 cooperatives established the Union of Craft Producers' Cooperatives, the main goal of which was to unite all craft cooperatives and protect their interests. Hristo Hinkov was elected chairman of the union. In the Statute of the Union of the craft production cooperatives, approved by the Sofia District Court (State Gazette, No. 97, August 4, 1919, p. 9), the following main tasks have been identified:

a) unification into a single representation of all craft production cooperatives;

b) care for the establishment of new cooperatives, as well as for their proper and successful development;

c) protection of the common interests of the cooperatives, members of the union;

d) establishing mutual relations between cooperatives;

e) arranging common supplies and sales;

f) supporting cooperatives with credit.

In the following years, the Union of Craft Producer Cooperatives actively supported the cooperatives to make the most of the opportunities provided by the Law for the Protection of Local Industry, as well as to arrange their credit. A very important role in promoting the activities of the Union and for the implementation of the tasks set out in the statute is carried out by the publication of the newspaper "Production Cooperative" - an organ of the Union of Craft Production Cooperatives since 1920.

The first regular congress of the Union of Craft Producer Cooperatives, held on July 10, 1920, was personally attended by the Minister of Trade, Industry and Labor, Rayko Daskalov. In his address to those present, he emphasized the importance of cooperative work for Bulgaria, especially for producer cooperatives. "In strengthening production lies the salvation of our country, therefore all who work in this direction will have the full support of the government. Craft production cooperatives will save crafts from destruction and will help heal our wounds caused by wars." (The road, 2009, p. 21)

As a result of the active activity of the craft cooperatives and the improved regulatory framework under the leadership of Al. Stamboliyski, conditions were created for a sharp increase in the number of LPCs. For the rise of craft cooperatives, a good and adequate regulatory framework, cheap and accessible credit for cooperatives and for the entire economy of the country. The positive effects of this accelerated process of development of

LPCs caused an increase in employment and the provision of more favorable working conditions for workers in them compared to private enterprises at that time.

In 1923, the Union of Craft Producers' Cooperatives became one of the first collective members of the International Cooperative Union (ICU), and in 1926 Konstantin Bozveliev was elected to the Board of Directors of the ICU.

And again, the years of creation were interrupted by the world crisis of 1929-1933. The sharp fluctuations in prices and the country's large debts had a severe impact on the economy and, of course, on Bulgarian craftsmen and their cooperatives. They reduced their production and suffered significant losses, and some of them ceased their activities.

In 1933, a new Law on Craftsmen was adopted, which allowed craft cooperatives to be exempt from import duties, reduced railway transportation fees, and provided for tax breaks and duty-free exports of craftsman products (State Gazette, No. 46, June 1, 1933).

Until World War II, the carpentry and furniture, shoemaking, iron and wheelwright, tinsmith, tailoring, furrier and coppersmith craft cooperatives had serious achievements (Statistics of Cooperative Associations for 1939, 1942, p. 4). In 1937, the Union of Craft Producers' Cooperatives united 38 production cooperatives. In 1938, a new statute was adopted and the name of the Union was changed to the General Union of Craft Producers' Cooperatives. The title of the official newspaper was also changed to "Craftsman's Cooperative".

The most important task facing the General Union of Craft Cooperatives, in view of the pre-war situation, is to ensure the supply and sale of the production of the craft cooperatives. A special service has been established within the Union, which regulates or assists in the supply from abroad or from the domestic market of quality and affordable materials, machines and tools for the needs of the cooperatives. In short, the craft cooperatives and their Union are on the rise.

The Second World War put the Bulgarian craft cooperatives and their Union to the test. During the war years, the activities of the General Union of Craft Cooperatives continued, uniting and supporting dozens of Bulgarian craft cooperatives

**Development of the cooperative movement after 1944**

After 1944, transformation processes occurred due to the new socio-political situation created in the country. The transition of LPCs from artisanal to industrial cooperatives ensured their sustainable development, and the LPCs brand became recognizable not only on the Bulgarian market, but also abroad.

In the People's Republic of Bulgaria, in addition to state ownership, cooperative ownership was also recognized. By 1946, the number of labor and production cooperatives was 739. They continued to play an important role in satisfying the needs of the population goods and services. However, their activities are carried out with direct intervention and control by the state administration. One of the priorities of the new government is the inclusion of artisans in production cooperatives.

The existing structure, which had been working flawlessly until then, was also changing. Through an organizational reform, the previous cooperative unions and centers were closed. All labor-production cooperatives became part of the centralized planning system economy, which violates the principle of their self-government - they now depend on the economic priorities of the state.

However, the new socio-political environment also had its advantages in terms of the development of cooperatives. During this period, Bulgaria became an industrial country with production in many sectors, which was encouraged and supported strategically.

The development of individual regions is an important state policy in which cooperatives play a significant role. Operating in various economic sectors and working at the local level, cooperatives prove to be a major producer and supplier of goods and services.

In 1950, the General Union of Labor-Production and Craft Cooperatives was established, and a year later Vasil Raydovski was elected its chairman. Under his leadership, a new period of growth for cooperatives began, which is often described as the "golden years of LPCs". Raydovski was an active leader and a good strategist, his visionary approach and clear idea for development are reflected in the cooperative work.

In 1953, the name of the union was changed to the Central Union of the LPCs. The organizational life of the cooperatives united by the Central Union was extremely active. During the 15 years during which Vasil Raydovski was at the head of the Central Union of the LPCs, the entire LPCs system was built, an alternative to the state one in almost every attitude. LPCs are developing as large industrial enterprises. More than 100,000 people work in the system, with some cooperatives employing up to 5,000 workers.

LPCs determine the socio-economic development of many regions, and services in the country are almost entirely provided by them. A large part of the cooperatives surpass state-owned enterprises in terms of organization and efficiency of production, economic results and social benefits for workers. LPC's products are known and in demand on the global and domestic markets.

At the end of the eighties, Bulgaria fell into a serious crisis, which logically affected the LPCs system. 1989 was historic for LPCs in another aspect as well – at the initiative of the cooperatives, a congress was organized and held, at which the Central Union of the LPCs, later renamed the National Union of Labor and Production Cooperatives - the successor and successor to the Union of Craft Production Cooperatives founded in 1919 (Reference 2009, 2009).

**Development of the cooperative movement after 1989**

In the difficult transition to a market economy, despite the higher resilience of the LPCs, their number is decreasing, as are the employees in them. After 1989, the LPCs National Union continues to protect the interests of its LPCs members, following a more balanced model of social and economic development, which is also important for the development of the country.

The dynamic development of society in recent decades, marked by globalization, technological progress, and rapid population growth, outlines the trends of global development.

The responsibility of cooperatives to contribute with their efforts to the development of our country as a social state with a strong social and solidarity economy is gaining particular importance at the present time and shows the significant place they occupy in the socio-economic life of our country.

Among the biggest challenges facing the cooperatives that are members of the LPCs National Union are:

• low degree of adaptability of the member cooperatives in the Union in the conditions of the modern hyperdynamic socio-economic environment;

• the sustainable LPCs model needs development aimed at new professions;

• sharp aging of member-cooperatives and employees in the LPCs;

• chronic shortage of workers and specialists;

• few newly established cooperatives that apply and are accepted into the LPC's National Union.

**Conclusions**

Today, the National Union of Labor and Production Cooperatives is an independent non-governmental organization of voluntarily united production cooperatives at the national level - labor and production, labor and production cooperatives of people with disabilities, cooperative unions and other cooperative organizations based on international principles and values.

The Union and its members are subjects of the social and solidarity economy and combine economic results with social goals.

The National Union of the LPCs as an organization has a solid foundation in shared values such as unity, solidarity, mutual assistance and dedication to the common cause. The democratic spirit and the power of every vote in choosing leadership, strategy and specific measures have long been accepted, legally consolidated, but even more importantly, they are an integral part of our organizational culture.

The key cooperative values reflect enduring ethical categories and characteristics of modern civil society, namely: mutual aid, responsibility, democracy, equality, solidarity, honesty, openness, social responsibility and care for others, centrality of the individual, ethics of action, economic pluralism and democracy, entrepreneurship

It is important to emphasize that in modern conditions, the National Union of the LPCs functions on the basis of the cooperative values and principles approved by the International Cooperative Union.

The National Union of the LPCs is the member of the Bulgarian Chamber of Commerce and Industry (BCC) is a member of the Bulgarian Industrial Association (BIA),

the Bulgarian Chamber of Commerce and Industry (BCCI) and the Economic and Social Council (ESS) of the Republic of Bulgaria.

The National Union of the LPCs is also a member of the International Cooperative Union /ICU/, the International Organization of Industrial, Producer and Craft Cooperatives "SICOPA" and the European Confederation of Producer and Service Cooperatives "SECOP".

Priorities in implementing the policy of the National Union of the LPCs for the realization of the Union's mission and the vision for its development are:

• expanding market presence and dynamizing development through the implementation of innovations and ensuring national funding and support from the European Union;

• strategic partnership with the Ministry of Labor and Social Policy, the Agency for People with Disabilities, municipalities and higher education institutions in the Republic of Bulgaria;

• expansion of social activities as part of the modern management of the cooperative infrastructure;

• establishing and maintaining contacts with mayors and regional governors, concluding agreements on incentive measures for the entities of the social and solidarity economy.

In order to best understand and implement the future development of labor and production cooperatives, the leadership of the National Union of the LPCs actively participates in working groups, commissions, committees and councils to protect the interests of the Union and its members, participates with opinions and proposals for amendments and supplements to regulatory documents, maintains contacts with members of parliamentary committees to discuss draft laws relating to the cooperative system.

Together with the Ministry of Labor and Social Policy, the National Union of the LPCs Bulgarian is the main organizer of the annual European and regional forums for subjects of the social and solidarity economy, accompanied by round tables and conferences attended by a large number of social enterprises, universities and municipalities from the country and abroad.

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# MAPPING ALBANIAN TOURIST DESTINATIONS BASED ON VISITORS' REVIEWS: A COMBINED APPROACH

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***Abstract***

*Tourism constitutes one of the most rapidly expanding sectors of Albania's economy. It generates substantial revenue, fosters employment, and facilitates regional development. However, this expansion has not occurred uniformly throughout the nation. The majority of the activity has occurred along the southern shore, while significant potential remains in the central and northern regions. This study tries to build a typology of main Albanian touristic destinations through combining qualitative and quantitative methods, based on online visitors' reviews. By gathering reviews from online platforms TripAdvisor and Google and processing them through natural language processing, semantic modelling, sentiment analysis and then employing multidimensional scaling and clustering methods, a two-dimensional map with five distinct clusters of destinations was derived. The results indicate that, in Albania, sustainability must be pursued through policies tailored to each cluster, addressing issues such as service quality, infrastructure, environmental management, and market positioning.*

***Keywords:*** *Sustainable tourism; Albania; Destination clustering; Sentiment analysis; Natural language processing*

***JEL Code:*** *Z32*

## Introduction

During the last five years, Albania has been visited by a surprisingly huge number of international visitors, most of them attracted by aggressive online promotion by Albanian government. Although the coastline and beaches are the main attractions promoted, international tourists also find diverse landscape, mountainous regions and historical sites worthy places to visit in Albania.

Although the overall number of tourists coming to Albania has been impressive, not all its regions have had the fair share of these visitors. Coastal Adriatic and Ionian destinations have been overpopulated with foreign tourists, especially in the southern part of Albanian coastline, while inland regions, despite their natural, historical and cultural potentials, have remained underdeveloped and not fully promoted. Such uneven and probably unfair distribution of foreign visitors reflects socio-economic inequality and uncovers greater problems about territorial cohesion and regional planning.

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Actual trends in tourism research and management are putting great emphasis on online data driven methodologies. This because the vast amount of user-generated content, such as online reviews, ratings, comments, and discussions, create an effective opportunity to analyse visitor behaviour, examine preferences, and summarize opinions in real time. In contrast to traditional survey methods, these kinds of data collect genuine and direct feedback from a wide range of visitors, that can be further analysed to uncover latent patterns of experiences and perceptions.

Clustering methods, in particular, are well suited for this kind of purpose. In this research, online reviews from foreign visitors in Albania who had left reviews on online platforms like Tripadvisor and Google were collected and analysed, resulting in 5 clusters of Albanian tourist destinations based on these reviews. By employing qualitative and quantitative techniques, like Sentiment Analysis and Multidimensional Scaling (MDS), a two-dimensional map was generated, enabling a visual distribution and grouping of related destinations, revealing regions that share similarities and face common challenges.

**Literature review**

Tourism is a very important sector of global economy, contributing to countries' GDP, employment and regional development. According to UNWTO (United Nations World Tourism Organizations) (2024), tourism industry accounts for over 10% of global GDP and is directly or indirectly related to the employment of one in every ten people worldwide. Tourism as became especially beneficiary for developing countries, where it offers inflows of money, various employment possibilities and significant opportunities for economics development and social cohesion.

In order to secure long term benefits from tourism activities, countries and regions must rely heavily on the concept of sustainable tourism, which actually is more widely focused to a multidimensional framework encompassing economics, sociocultural and institutional dimensions (Hall, 2019). The scope of sustainable tourism is to fulfil the needs of actual tourists and host communities, while preserving the existing resources for future generations. According to European Commision (2020), achieving sustainability requires adaptive governance, stakeholder collaboration and accurate data on visitors' behavior and satisfaction.

With the rapid development of technology and data science, the traditional approach of statistical data analysis about, for example, number of tourist arrivals and accommodation capacities, is complemented with big data analytics, sentiment analysis and visitor-generated content analysis. These modern approaches allow the researchers to gain detailed insights about tourists' experiences, their preferences and expectations.

Recent research in tourist management has integrated computational methodologies into destination analysis. Researchers such as Xiang et al. (2017) and Marine-Roig & Clavé (2015) have demonstrated the effectiveness of online reviews, social media content, and geotagged photographs as crucial data sources for tourism research. These studies employ

natural language processing and machine learning to examine visitor attitude and theme preferences, enabling the detection of patterns that can guide destination marketing and sustainability efforts.

Destination clustering is derived from the fields of economic geography and tourism studies. Porter's (1998) cluster theory argues that geographic concentrations of related activity can foster synergies, innovation, and competitiveness. In tourism and hospitality industry, clustering methods enable the identification of destination groups with similar characteristics or market attractiveness, helping policymakers to customize development plans and policies in accordance to each group's strengths and limitations (Novelli et al., 2006).

Ballesteros and Hernández (2019) have proposed a classification of Spanish coastal attractions based on sentiment data, while Li et al. (2020) have employed MDS to illustrate perceptual commonalities among Chinese ecotourism areas. The incorporation of online review analysis into destination clustering signifies a methodological advancement with considerable policy effects (Kirilenko et al, 2019; Höpken et al., 2024).

The integration of academic research with policy implementation represents a promising trend in sustainable tourism management. Academia and research institutions can significantly influence local and national policymaking by yielding relevant data (Gössling & Hall, 2019). In Albania, these tools can enhance regional planning by distinguishing between established, high-performing touristic destinations and new or at-risk ones. By outlining clusters, decision-makers can prioritize investments—such as enhancing service quality in heritage towns, managing visitor congestion in natural destinations, or fostering niche tourism in underrepresented regions. This analytical method corresponds with the tenets of the United Nations Sustainable Development Goals (SDGs), specifically Goal 8.9 (promote sustainable tourism) and Goal 11.4 (safeguard cultural and natural assets) (United Nations, 2015).

## Methodology

### *Data collection and preparation*

The data collection process for this study was designed to capture genuine visitors' perceptions of Albanian tourist destinations. Given the increasing reliance of travelers on online platforms for planning and reviewing their experiences, user-generated content was chosen as the primary data source. This approach allows access to diverse, spontaneous, and experience-based assessments that otherwise would be difficult to obtain through traditional survey methods.

Visitor reviews were collected from two well-known tourism platforms, TripAdvisor and Google Reviews, focusing on June - August 2025 period. Summer months represent the peak period of Albanian touristic season, when the majority of destinations receive their highest number of visitors and reviews.

181 tourist destinations were identified, which are mentioned in official sources of Albanian government and INSTAT (Albanian official institution of statistics), and from those 77 most popular destinations were selected.

Data were gathered using automated web scraping tools (apify.com), applying Python scripts designed to extract key metadata from review pages.

The resulting dataset in JSON file format contained approximately 3,800 reviews. This file then was converted to MS Excel 365 format to facilitate subsequent processing. To maintain data quality, duplicate and empty entries were removed, while text reviews shorter than five words were excluded from the dataset, since they are deemed non-informative for textual analysis.

The dataset contained feedback reviews in more than 20 different languages, so the next step was translating all these reviews in English language, in order to ensure analytical consistency. MS Excel 365 integrated DETECTLANGUAGE and TRANSLATE functions were very useful to complete this step. While automatic translation may occasionally reduce linguistic tone, this approach allowed the dataset to maintain a uniform structure suitable for machine processing and semantic modeling.

Then, the raw textual data underwent a complete preprocessing procedure using the spaCy natural language processing (NLP) library in Python (Hannibal and Montani, 2017). This step was necessary to remove noise and standardize the text, guaranteeing that only meaningful linguistic elements were retained for analysis. The result were 270 processed tokens that then could be further analysed.

***Feature Extraction and Sentiment Analysis***

After cleaning and standardizing the data, the next phase was identifying the main thematic dimensions that characterize visitor perceptions of Albanian tourist destinations, along with the emotional tone expressed in their reviews. During this phase of data analysis, Sentence-BERT (Bidirectional Encoder Representations from Transformers) model was employed, in order to capture the semantic relationships. Then, BERTopic algorithm was applied, in order to group semantically similar sentences into coherent topics. After iterative tuning, 20 main categories were identified, which represent the key dimensions of tourists' experiences during their visits in Albania (Table 1):

*Table 1: Main categories representing tourist's experiences based on online reviews*

| **Natural Landscape** | **Accessibility and Transport** |
|---|---|
| Biodiversity and Protected Nature | Tourism Infrastructure |
| Cultural Heritage and History | Safety and Security |
| Cultural Events and Traditions | Cleanliness and Environment |
| Traditional Architecture | Prices and Value for Money |
| Hospitality and Local Community | Authenticity and Cultural Identity |
| Food, Wine and Gastronomy | Diversity of Activities |
| Adventure Activities | Marketing and Image |
| Beaches and Coastline | Family and Friendly Experience |
| Relaxation and Atmosphere | Tourism Sustainability |

Then, each category was reviewed to guarantee thematic coherence and to remove overlapping or redundant categories. The emotional tone of each review was analyzed based on VADER (Valence Aware Dictionary and sEntiment Reasoner), categorizing opinions as positive, neutral, or negative. Finally, each review received a compound sentiment score ranging from –1 (extremely negative) to +1 (extremely positive), my constructing a composite overall index which combined the average of feature-related scores with the average sentiment score. The resulting dataset captures both the content and tone of tourist experiences, leading the path identifying destination typologies through clustering methods discussed in the next section.

***Multidimensional Scaling and Cluster identification***

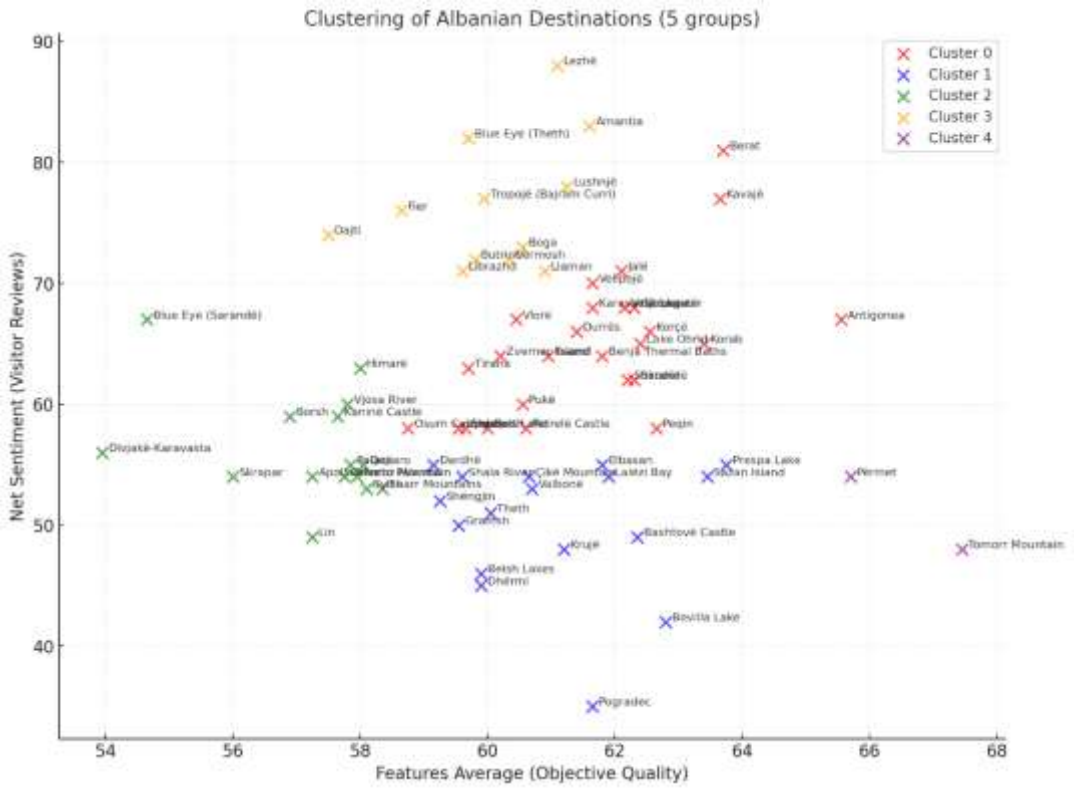
Multidimensional Scaling (MDS) is a statistical technique that illustrates the similarities or dissimilarities among data points within a reduced-dimensional environment (Kruskal and Wish, 1978; Borg and Groenen, 2005). This research employed MDS to transform high-dimensional feature-sentiment data into a two-dimensional visual representation, enhancing the intuitive understanding of links among destinations.

Each point on the MDS map represents a distinct location, and the distance between points indicates the variance in their performance and emotion profiles when integrated. Neighbouring destinations show similar characteristics, while distanced destinations typically demonstrate differing visitors' impressions or feature structures. A pairwise distance matrix was constructed using the previously obtained matrix of characteristics and sentiment ratings, reflecting the degree of similarity among all 77 destinations. The resulting structure served as input for MDS, which transformed the distances into a two-dimensional representation. The stress value, which is an indicator of the projection's reliability to the original distances, was pre-determined to be lower than 0.15, in compliance with theoretical acceptable parameters (Kruskal, 1964). Thus, the two-dimensional model precisely represented the relationships within the data. Figure 1 presents a two-dimensional MDS map that visually represents Albania's tourism landscape.

The horizontal axis mainly captures the differences in objective quality indicators, such as accommodation facilities, infrastructure, safety, accessibility, etc. The vertical axis

denotes the average emotional outcomes extracted from reviews, which is computed as net sentiment (the difference between computed positive reviews and negative reviews).

*Figure 1: The 2-dimensional MDS map of main Albanian tourist destinations*




*Source:* author's research

Then, to define and validate the resulting five clusters derived from MDS map, the agglomerative hierarchical clustering algorithm was employed. The process begun by considering each destination point as an individual cluster and then it iteratively merges the two most similar clusters based on their distance, until optimum grouping structure is achieved and further clustering does not yield reliable results.

The Ward linkage criterion was chosen because it minimizes the total within-cluster variance and results in well-defined clusters. After examining the produced dendogram, the optimal number of clusters was determined to be five (k = 5), based on elbow method and silhouette score analysis.

The five clusters demonstrated high internal consistency and apparent external variation, reflecting distinct combinations of cultural, natural, infrastructural, and experiential characteristics across destinations. Each cluster was evaluated in terms of feature composition, average sentiment score, geographical distribution and tourism typology. The resulting five clusters which can classify most famous Albanian tourist destinations were:

- Cluster 0: Heritage-rich destinations with moderate visitor satisfaction.

- Cluster 1: Emerging or low-awareness destinations with untapped potential.
- Cluster 2: Natural icons with polarized visitor reviews.
- Cluster 3: Balanced and high-performing destinations.
- Cluster 4: Niche and specialized destinations with unique appeal.

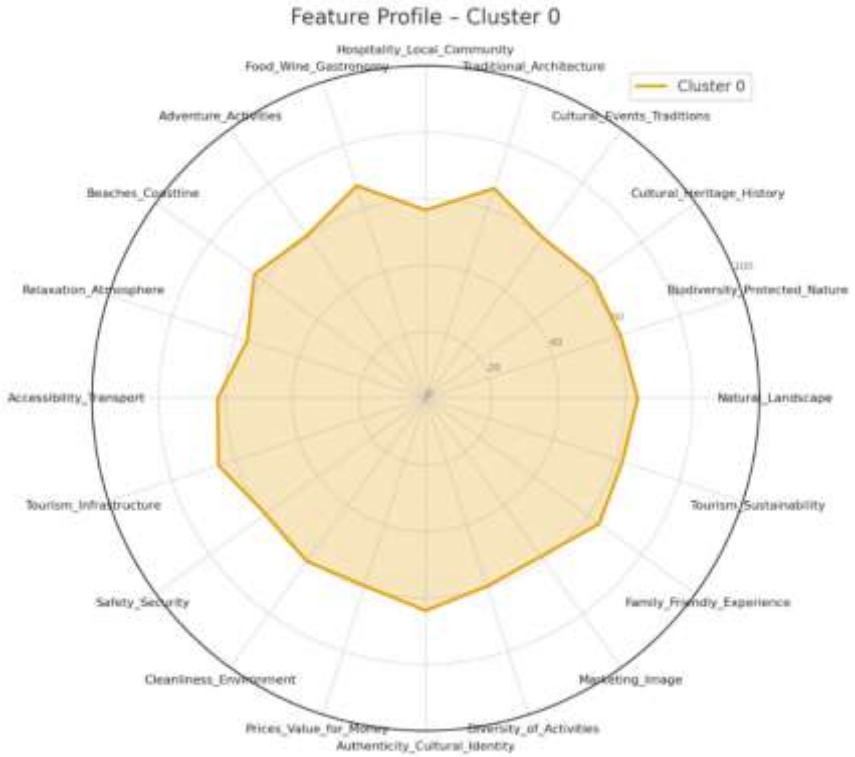
**Results and cluster interpretation**

The MDS and Hierarchical Clustering analysis identified five distinctive clusters, which vary in terms of visitors' satisfaction and perceived quality and their sentiments, based on 20 dimensions identified at the previous steps of the analysis.

***Cluster 0: Solid Heritage and Moderate Sentiment***

Cluster 0 includes some of Albania's famous historic towns and heritage sites, like Berat, Gjirokastër, Apollonia, and Antigonea. These destinations have high scores on dimensions like architecture, heritage, history, positioning them as important representatives of Albanian historical identity. However, they also demonstrate moderate visitor satisfaction, as indicated by the sentiment analysis. Tourists visiting these sites appreciate their aesthetic and cultural intensity but also, they mention service inconsistency, poor accessibility, and limited infrastructure. These findings suggest a misalignment between the core value of the destination and the quality experience that visitors perceive to have received.

*Figure 2: Solid Heritage and Moderate Sentiment Cluster*



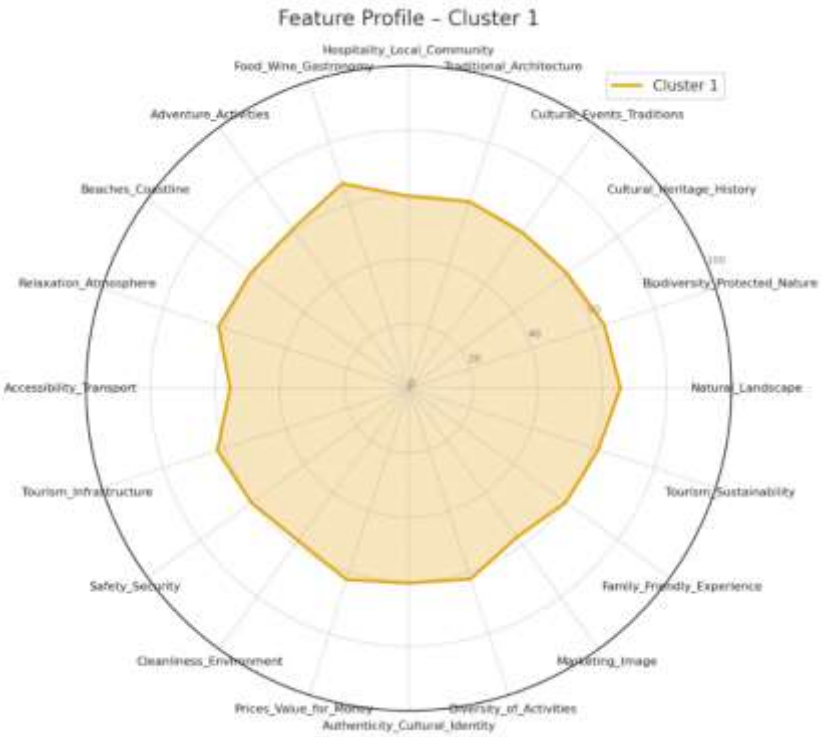

*Source:* author's research

**Cluster 1: Emerging or Low-Awareness Destinations**

Cluster 1 includes underdeveloped or lesser-known destinations such as Prespa Lake, Sazan Island, Elbasan, and Belsh. These locations possess little infrastructure, feeble marketing, and minimal awareness; yet, they exhibit significant potential for thematic diversification, particularly in nature-based, eco, and adventure tourism.

The individuals in this category predominantly exhibit neutral to slightly positive sentiments towards the visitors, characterized by a blend of curiosity and mild disappointment. Numerous reviews indicate that these locations are aesthetically pleasing or culturally significant; yet, they also note challenges regarding accessibility, accommodation, and information availability. Consequently, Cluster 1 represents Albania's "next frontier" in tourism advancement. These locations can emerge as competitive alternatives if effectively developed and marketed.

*Figure 3: Emerging or Low-Awareness Destinations Cluster*



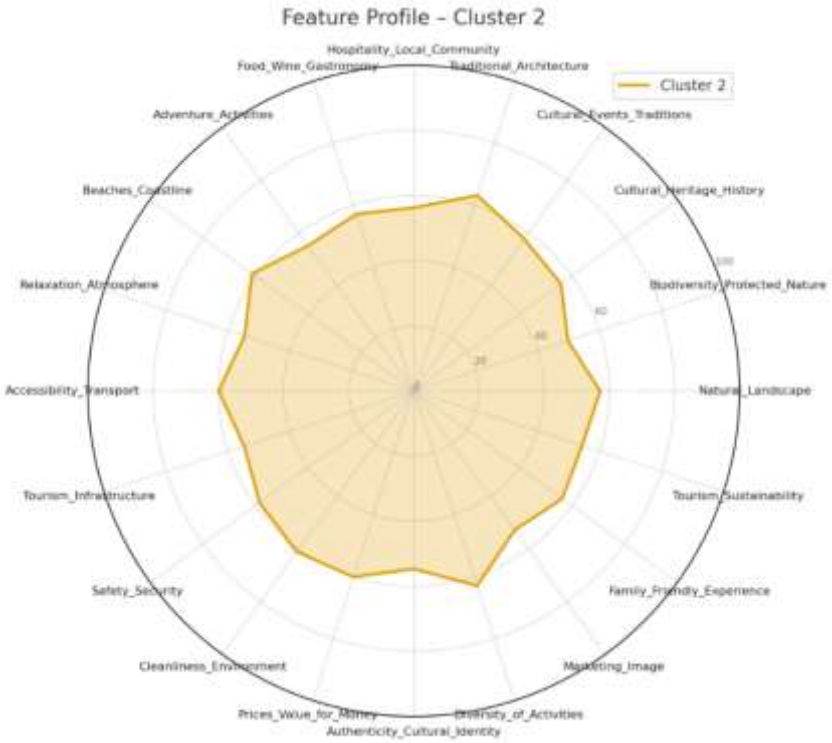

*Source:* author's research

**Cluster 2: Natural Icons with Contrasting Reviews**

Cluster 2 includes some of Albania’s most famous and most visited natural destinations, such as Himarë, the Vjosa River, and the Blue Eye (Sarandë). These sites score relatively high in dimensions like natural beauty, biodiversity, and landscape beauty, but also have highly polarized visitor sentiment.

Positive reviews about the destinations of this cluster highlight their landscape and beautiful nature, while negative feedback often mention overcrowding, littering, noise, and inflated prices. The cluster demonstrates how unmanaged destination popularity may threaten their long-term value.

*Figure 4: Natural Icons with Contrasting Reviews Cluster*




*Source:* author's research

**Cluster 3: Balanced Strong Performers**

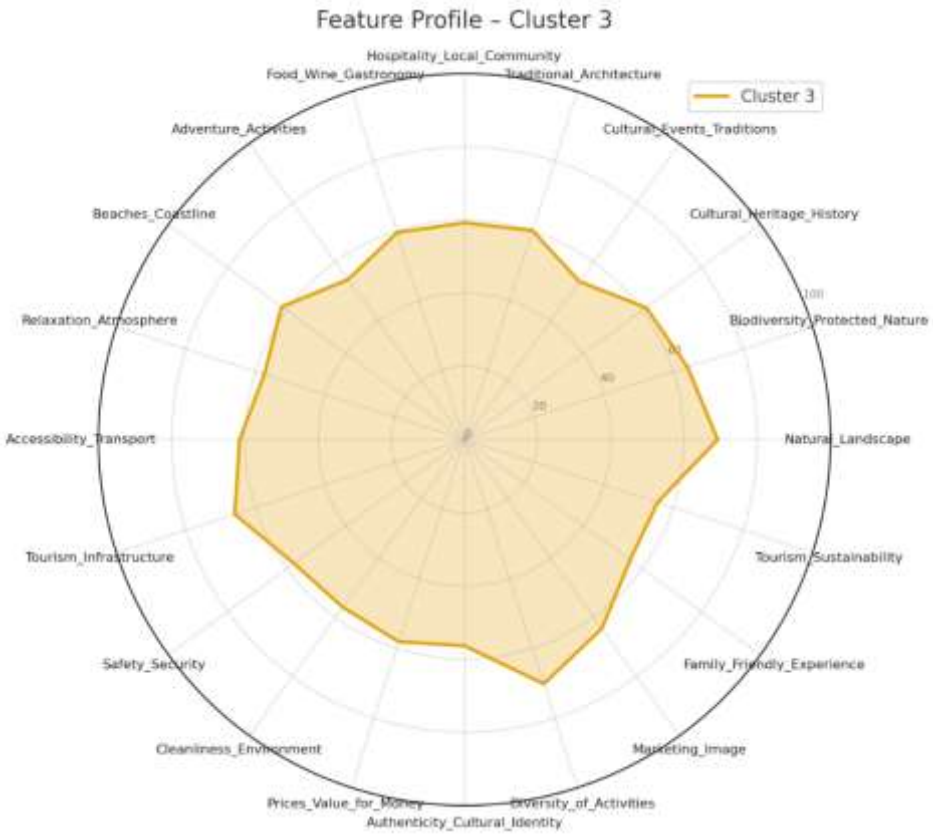
Cluster 3 can be considered as the benchmark group, with destinations such as Theth, Valbonë, Bogë, and Llaman, which combine natural and cultural values with high visitor satisfaction, acting as a balanced model of tourism development.

Mountainous destinations in this cluster, for example, are frequently positively mentioned for their authentic rural hospitality, alpine scenery, and local accommodation structures, according to reviews. Their positive performance implies that locally managed tourism eco-systems can generate both economic advantages for the community and high visitor loyalty.

Cluster 3's distinct strength is a result of the synergy between environmental value, local authenticity, and service excellence. Maintaining this balance requires continuous investment and consideration in sustainable infrastructure and capacity building, while at the same time make efforts in tourism offer diversification. Cluster 3 destinations represent

Albania's sustainable tourism exemplars, demonstrating that growth and quality can coexist when properly managed.

*Figure 5: Balanced Strong Performers Cluster*

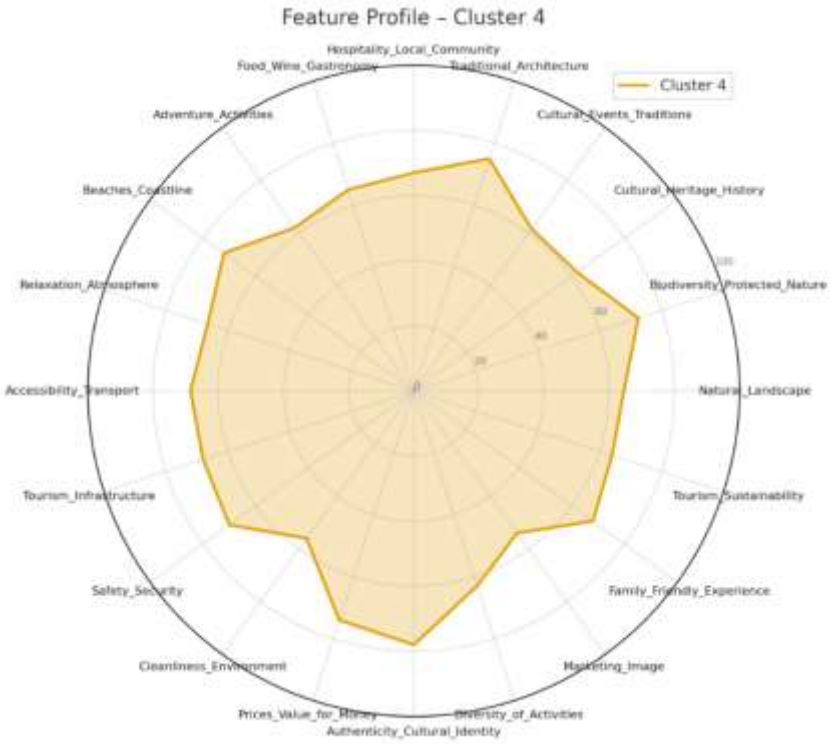



*Source:* author's research

**Cluster 4: Unique Niche Destinations**

Cluster 4 encompasses distinctive locations such as Përmet and Tomorr Mountain, which serve particular demographics of tourists. Their uniqueness lies in their spiritual, wellness, and nature-oriented appeal, distinguishing them from conventional tourist destinations. Përmet is recognized for its thermal springs (Bënjë), relaxing atmosphere, and local hospitality. On the contrary, Tomorr Mountain is preferred by individuals with interest in religious pilgrimages, especially during August. These locations are ideal for slow tourism and wellness-oriented models due to their tranquillity and deep cultural authenticity. However, their market remains limited and operates only during specific periods of the year.

*Figure 6: Unique Niche Destinations Cluster*




*Source:* author's research

## Conclusion

This study illustrates that Albania's tourist sector is vibrant, although characterized by unevenly developed locations, which exhibit different clusters highlighting both its successes and shortcomings. Heritage sites need adequate modernization, developing regions should increase their visibility and promotion, natural landmarks demand preservation, exemplary performers demonstrate best practices, and niche destinations represent the future of sustainable specialization.

The primary conclusion is that sustainability and competitiveness must progress concurrently. The country's tourism potential does not arise only from its natural and cultural resources but also from its ability to manage growth in a strategic way, to fairy distribute financial resources for tourism development, and to align this one with environmental and social responsibility.

This study also is subject to several limitations. The data used here derive exclusively from online reviews, which may not fully represent all tourist segments. It is known that not every customer chooses to express his/her satisfaction or dissatisfaction online (Imba and Antipolo, 2025). The data were collected focusing on a specific season of the year (summer), limiting the generalization power of the study. Furthermore, the automatic translation in

English language and sentiment classification may diminish cultural expressions or language nuances.

As for suggestions for further research, these types of studies can expand the collection of data through the whole year or even for several years, capturing seasonal or year-to-year trends. Moreover, by integrating economic indicators such as revenues, employment or spending per visitor, one could link tourism development with macroeconomic indicators. Finally, predictive modelling could simulate how changes in infrastructure, marketing or policies may influence visitors' sentiments and touristic destination performance.

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# DEVELOPMENT OF COOPERATIVES IN BULGARIA: REGIONAL DIFFERENCES AND BUSINESS MODELS IN BULGARIAN AGRICULTURAL COOPERATIVES*

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***Abstract***

*Due to the multifaceted nature of the researched topic, the aim of the present study is limited to analyzing the development and applicability of cooperatives in the economic life of Bulgaria. The research focuses on the business models of agricultural cooperatives in the country, with an emphasis on regional differences in their economic performance. The study is motivated by increasing regional disparities, particularly following Bulgaria's accession to the EU in 2007, which exacerbated rural depopulation and shifted development priorities toward market-oriented rather than socially driven strategies. The analysis, part of a national research project, covers 863 cooperatives across 28 districts (NUTS-3 regions), specializing in cereals (excluding rice), legumes, and oilseeds. Using official data from 2007 to 2021, the study identifies regional variations in key economic indicators such as income, costs, profits, labor productivity, and profitability, while cost-to-revenue efficiency remains relatively stable across regions. The findings highlight the importance of understanding cooperative business models and their regional economic and social impact, particularly in the context of sustainable and socially responsible development.*

**Keywords**: *cooperative model; agricultural cooperatives; regional development; economic indicators; Bulgaria*

**JEL Codes**: *D22, R12*

## Introduction

Modern cooperatives in Bulgaria emerged as a response to specific socio-economic conditions at the end of the 19th century. They represent a collective model of business management, which is distinguished from individual and capital companies by its specific character. Over time, the cooperative model has developed and established itself as one of the widely used ways of managing production resources and providing services in almost all economic sectors and countries around the world. In the process of their development,

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cooperatives have experienced both periods of significant growth and periods of stagnation, which determines the continuing interest in them both in theoretical research and in the practical business environment.

The contribution of a number of Bulgarian and foreign researchers who have analyzed the characteristics of the cooperative and defined it over the years is generally recognized, such as Dikov (1927); Pashev, (1936); Donev, Bonev, Valev (1941); Kanev, (1943); Palazov, (1946); Vulkov (1945); Kanchev, (2000); Kanchev and Doychinova, (2006); Yovkova, (2007); Aleksandrov, (2007); Boevski, ( 2020); Kaufman, (1907); Sombart, (1919); Baranovski, (1921); Draheim, (1952); Botcher, (1980); Ashof, (1995); Münkner (1995); Wilsson, (2017); Bachev, et al. (2022); Bashev, (2011); Boevsky, I., & Aliyev, A. B., (2023); Ivanova, (2005); Kopeva, et al., (2012); Koteva, (2011, 2015, 2017); Sarov, (2020, 2023, 2025) and many others.

Legislation in a number of European countries, including Germany, Switzerland, Austria, Spain and Portugal, where the cooperative movement has long-standing traditions and is widespread in various economic sectors, perceives cooperation not only as a business model, but also as a social instrument for sustainable economic development and support of communities (Gonzalez, 2018).

According to Art. 1 of the first Law on Cooperatives in Bulgaria (1907), "a cooperative is any company composed of an indefinite number of members, established for the purpose of developing the economic interests of its members and promoting credit, agriculture, industry and trade through cooperative performance of works or through reciprocity." The wording in the current Law on Cooperatives (adopted in December 1999 and amended fourteen times to date) is similar, which states that "a cooperative is an association of individuals with variable capital and a variable number of members, which, through mutual assistance and cooperation, carries out commercial activities with the aim of satisfying the economic, social and cultural interests of its members." Clear analogies are outlined between the old and the new law, and it is clear that the historical development of the cooperative movement has a direct impact on its modern regulation and practical functioning.

In 2012, the International Year of Cooperatives, the European Economic and Social Committee highlighted the multifaceted nature of the cooperative model. The Committee stressed that cooperatives not only manage economic change effectively, but also do so with social responsibility, while contributing to social and territorial cohesion. They create innovative business models that increase their competitiveness and sustainability by integrating economic activity with objectives of social and community relevance. In this context, there is a pan-European consensus that cooperatives are a key element of the social economy, combining economic efficiency and social integration.

From the studied literary and normative sources, it can be concluded that the definitions and views on the cooperative overlap to a large extent. The cooperative is understood as a voluntary association of persons aimed at mutual assistance and cooperation,

in which the members assume equal rights and responsibilities. By creating a cooperative enterprise, they delegate part of the management functions to democratically elected bodies that represent them and make decisions on behalf of the community. The main goal of cooperatives is to satisfy the needs and interests of members, and not to generate profit, which distinguishes them from traditional enterprises. Therefore, Shaarz and Casselman (1980) define the cooperative as an "economic system with social content", emphasizing its balance between economic and social goals.

Due to the multifaceted nature of the topic, it is necessary to focus the research on the development of cooperatives and their spread in the economic and business practice of Bulgaria. This limitation allows for a more in-depth analysis of the socio-economic aspects of the cooperative movement in our country, while at the same time clarifying their role in the modern economic environment. To achieve the goal, the following tasks are solved:

• The characteristics of cooperatives in Bulgaria, manifested over the last two decades, are studied;

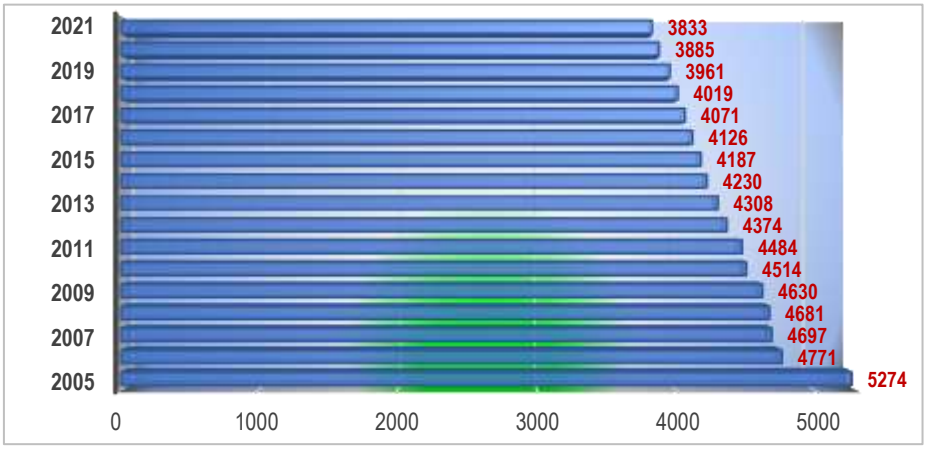
• With a view to the most numerous groups of agricultural cooperatives in the country, the trends manifested in their development since the beginning of the current century are analyzed.

The methodological approach used is based on statistical groupings of a large array of official data on cooperatives registered in the Commercial Register of Bulgaria from 2005 to the present year. Selected indicators have been established, reflecting trends in the development of cooperatives by planning regions, economic sectors, annual revenues, etc. Microsoft Office and a licensed version of Statistics Grad Pack under Windows are used to process the information.

**Aspects of the development of cooperatives in Bulgaria**

During the period 2005 - 2021, 9037 cooperatives were registered in the country. The largest number of active cooperatives was registered in 2005 - 5274, and the smallest in 2021 - 3833, with a distinct downward trend observed (Fig. 1).

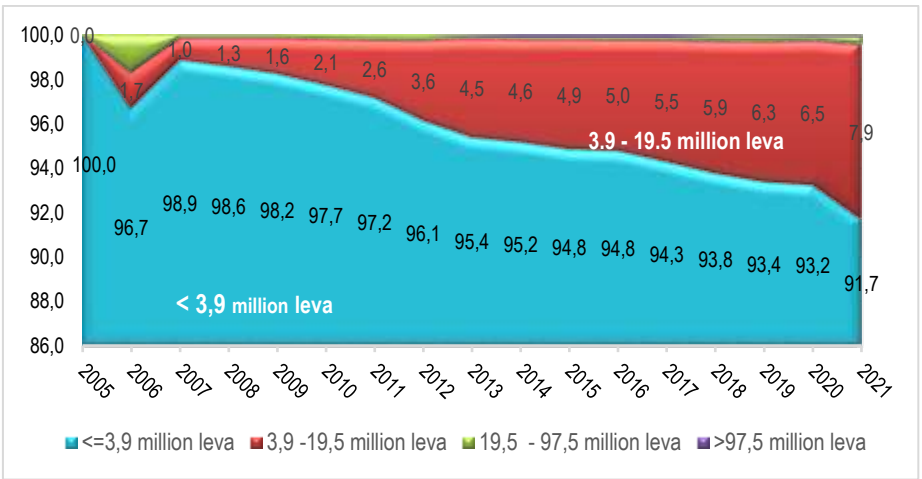
*Fig. 1: Change in the number of registered cooperatives in Bulgaria by year*




*Source:* Siela Norma and own calculations

The observed trend towards a decrease in the number of cooperatives, both nationally and in individual economic sectors, which can be largely explained by changes in their legal and organizational status. As of the beginning of June 2023, cooperatives with the status "active/operating" were only 2818, while those with the status "inactive/inactive" reached 4747. This corresponds to a relative share of 31.2% for active and 52.5% for inactive cooperatives of the total number registered. The group of "deleted" cooperatives is also significant, amounting to 871 or 9.6%, according to data from the Commercial Register. Additionally, 443 cooperatives (4.9%) have the status "ceased economic activity", and 104 cooperatives (1.2%) are in liquidation proceedings. The group of cooperatives that underwent restructuring in the form of merger or separation is relatively small – only 33 units.

*Fig. 2. Grouping of cooperatives by value of owned assets in %*

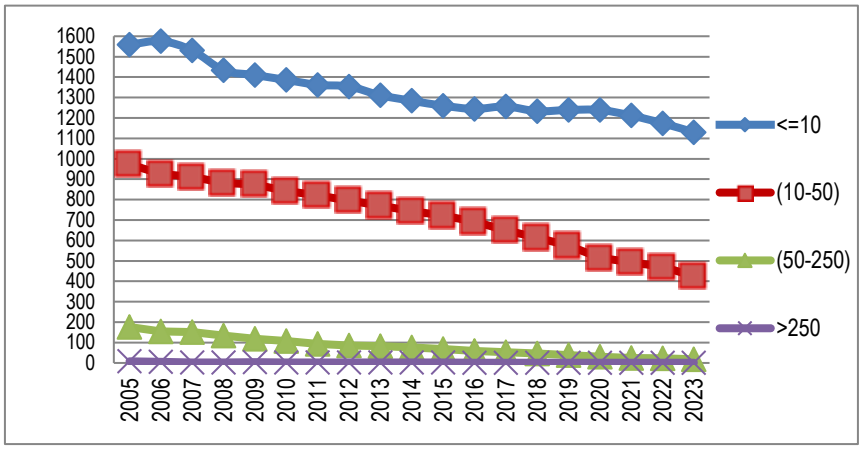



*Source:* Ciela Norma, 2023 and own calculations.

During the period under review, the largest group in terms of number remained the group of cooperatives with assets up to 3.9 million BGN, with its relative share decreasing from 100% to 91.7% (Fig. 2). Cooperatives with assets between 3.9 million and 19.5 million BGN occupy a significantly smaller share, which, however, gradually increases to 7.9%. The group of cooperatives with assets over 19.5 million BGN remains extremely small, under 0.5% of all.

In the employment structure, the largest share is occupied by cooperatives with up to 10 employees, in which, however, a tendency towards a gradual decrease in their number is noticeable. The second largest group is the group of cooperatives with employment between 10 and 50 people, while cooperatives with an average annual employment of 50 to 250 people form the smallest group. (Fig. 3)

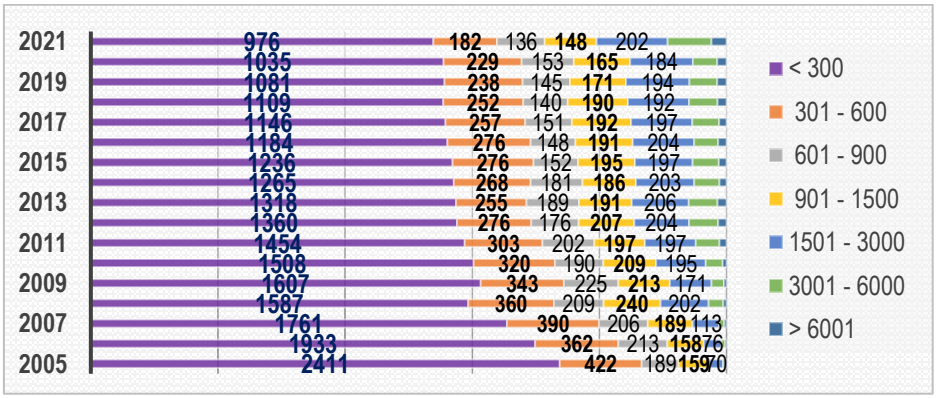
*Fig.3. Average annual number of employees in cooperatives: 2005-2023*




*Source:* Ciela Norma, 2023 and own calculations

The change in the status of cooperatives in Bulgaria reflects on the annual income from their activities (Fig. 4). We establish that the most numerous is the group of cooperatives with annual income up to 300 thousand BGN, followed by that with 301-600 thousand BGN. There is a tendency to reduce their number towards the end of the studied period compared to the beginning. At the same time, the smallest groups are cooperatives with annual income over 6 million BGN and from 3-6 million BGN. We establish a reverse trend towards a gradual increase in their number at the end of the period compared to the beginning. The latter is to some extent explained by the status of 30 cooperatives, which have the status “cooperative reorganization, form: merger”.

*Fig 4. Grouping of the cooperatives in Bulgaria according to the amount of annual revenues in BGN thousand: 2005 - 2021*



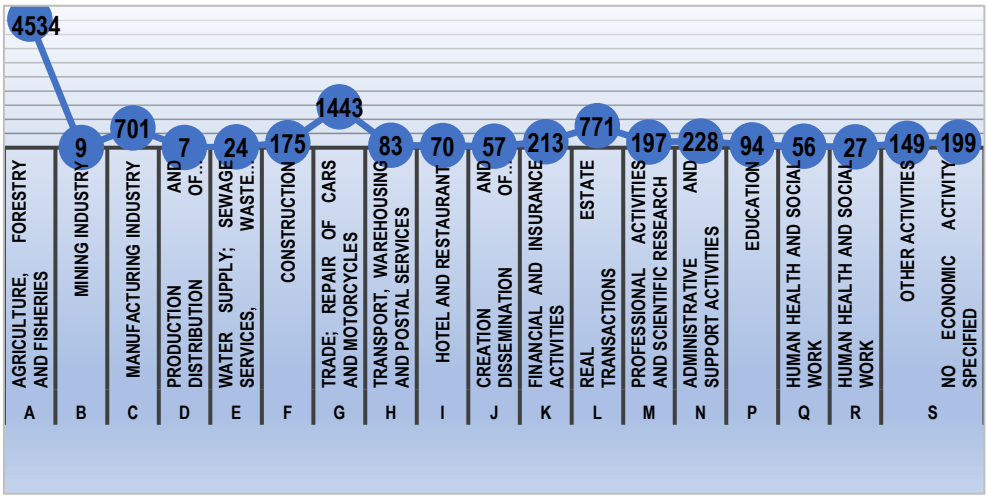

*Source:* Ciela Norma, 2023 and own calculations.

During the analyzed period, cooperatives demonstrated broad economic activity, covering almost all sectors of the national economy according to the NACE Rev. 2008 classification, with the exception of sector O. "Public administration" and sector T. "Activities of households as employers" (Fig. 5).

The highest concentration of cooperatives is observed in sector A. "Agriculture, forestry and fishing", where 4,534 organizations (mainly agricultural and manufacturing) operate, representing 50.2% of the total number. This sector is of leading importance for the cooperative movement, as it reflects its traditional production and regional profile.

In second place in terms of relative share is sector G. "Trade; repair of motor vehicles and motorcycles", within which 1,443 cooperatives (16%) are registered, mainly consumer, aimed at meeting the needs of local markets and households.

*Fig. 5: Grouping of cooperatives according to KID-2008: 2005-2023 (number)*




*Source:* Ciela Norma, 2023 and own calculations

The third largest sector is sector L. "Real estate operations", which includes 771 cooperatives (8.5%), among which consumer, labor-production and other forms of cooperative organization stand out. Their share reflects the trend towards diversification of cooperative activity and expansion of its investment functions (Fig. 5).

In sector C. "Manufacturing industry" 701 labor-production cooperatives are registered, which represents 7.8% of all cooperative structures.

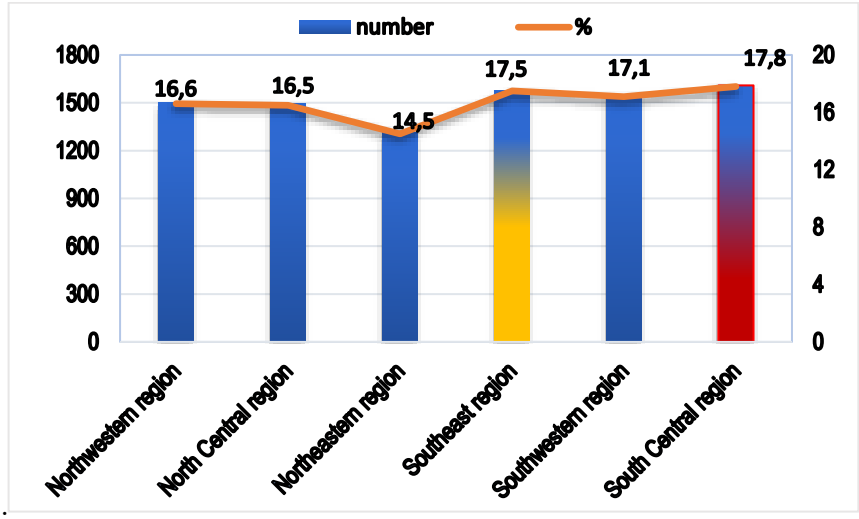
In sector K. "Financial and insurance activities" 213 credit cooperatives operate or 2.4% of the total number. They carry out credit activities, some of which, in their nature and functions, are reminiscent of the popular banks that existed in Bulgaria at the beginning of the 20th century.

A relative share of 2.5% (or 228 cooperatives) is occupied by organizations registered in sector N. "Administrative and auxiliary activities", including labor-production, consumer and other cooperatives. Their activity is mainly aimed at supporting vulnerable social groups and small producers, including beekeepers and artisans.

In sector M. "Professional activities and scientific research" a smaller relative share is reported - 2.2% or 197 cooperatives. This includes regional cooperative unions, as well as cooperatives with a more specific profile - youth, military disabled, design and others.

The analysis of the distribution of cooperatives by planning regions (Fig. 6) shows that the largest number is concentrated in the South Central region - 1609 cooperatives, which represents 17.8% of all registered in the country. The highest density is observed in the Plovdiv and Haskovo regions. In second place in terms of the number of cooperatives is the South-Eastern region with 1578 units or 17.5%, with the leading region in terms of activity being Stara Zagora.

*Fig. 6: Regional distribution of cooperatives in Bulgaria: 2005 – 2023*




*Source:* Ciela Norma, 2023 and own calculations.

The main conclusions that can be drawn from the analysis are:

• *Sectoral activity of cooperatives:*

Cooperatives in Bulgaria operate in almost all economic sectors, which emphasizes their role as a diverse element of the national economy. The most significant is their participation in sector A – "Agriculture, forestry and fisheries", where they occupy a leading position in terms of number and economic influence. This shows that the agricultural sector remains the main sphere of cooperative activity and is most likely related to the historical and socio-economic traditions of the country.

• *Trends in the number of cooperatives:*

During the observed period, a significant decrease in the number of operating cooperatives in the country as a whole was recorded. The decrease is especially noticeable in sector A – over 4 times, which suggests structural changes in the agricultural sector, probably related to asset consolidation, market transformations and changes in the regulatory environment. However, the sector remains dominant in terms of the number of cooperatives, which emphasizes the sustainability of this economic segment.

• *Financial indicators:*

The largest number of cooperatives have annual revenues of up to 300 thousand leva, which indicates the dominant presence of small and medium-sized cooperatives in the economy. This also suggests that most cooperatives operate at a local or regional level, with a limited scale of activity and lower capitalization.

• *Regional distribution:*

Currently, the largest number of operating cooperatives are registered in the South Central region, with a particularly high concentration in the districts of Plovdiv and Haskovo. This is probably explained by the long-standing tradition of developing agricultural activity in these regions, the presence of fertile soils and the better infrastructure for agricultural production.

**Regional differences and business models in Bulgarian agricultural cooperatives**

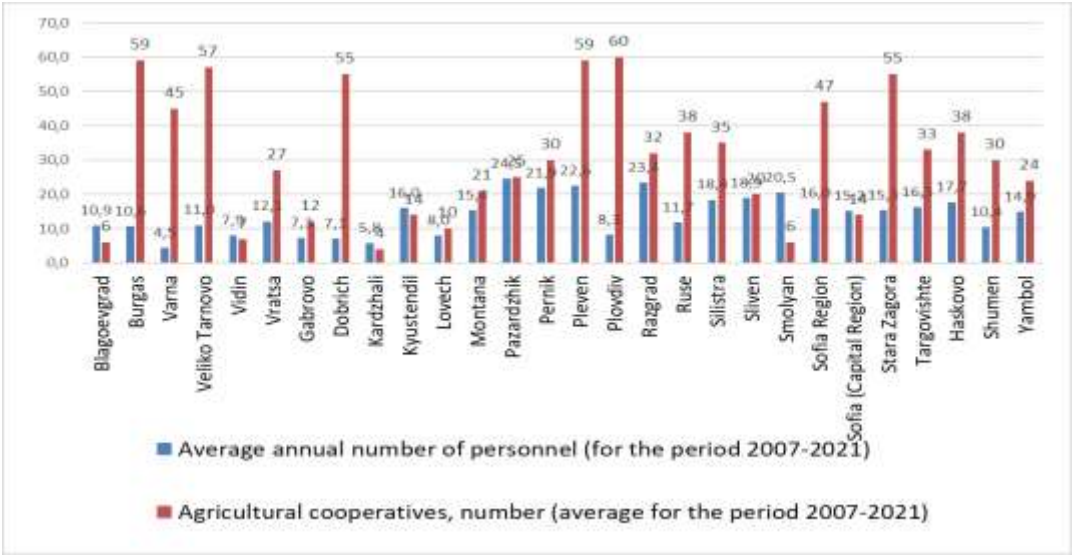
The analysis is based on a dataset of 863 agricultural cooperatives, distributed across the 28 statistical planning regions (NUTS-3 level) of Bulgaria, corresponding to the national administrative districts. The cooperatives are predominantly specialized in grain, legume, and oilseed crop production—sectors that represent the backbone of Bulgarian arable agriculture and account for a significant share of cooperative output. Empirical data were obtained from the Agrostatistics Department of the Ministry of Agriculture and Food (official statistical reporting) and Ciela INFO database (financial and structural indicators). The time frame covers 2007–2021, allowing the study to capture post-accession developments in Bulgarian agriculture following EU membership and subsequent Common Agricultural Policy (CAP) implementation.

*Agricultural cooperatives, number and Average annual number of personnel*

The districts with the highest and lowest average personnel are Pazardzhik - 24.5; Razgrad -23.4; Pleven - 22.6; Pernik - 21.9; Smolyan - 20.5. The districts with the lowest

personnel are Varna - 4.5; Kardzhali - 5.8; Vidin - 7.9; Dobrich - 7.1 and Gabrovo - 7.3. (Fig. 7). Smaller cooperative structures are observed here, probably with less land or oriented towards small local markets. In terms of the distribution of cooperatives, the districts with the largest number of cooperatives are Plovdiv - 60; Pleven - 59; Burgas - 59; Veliko Tarnovo - 57; Dobrich and Stara Zagora – 55.

*Fig. 7. Agricultural cooperatives, number and Average annual number of personnel (average for the period 2007-2021)*




*Source:* Ciela Norma, 2023 and own calculations.

The correlation analysis based on the number of cooperatives versus average staff shows a weak positive correlation ($r \approx +0.25$). For example: Pazardzhik district has few cooperatives (25), but many employees, which is typical of larger structures. In Plovdiv there are many cooperatives (60), but small average staff, they are clearly smaller structures. This means that the large number of cooperatives in a district does not mean larger cooperatives in terms of staff. On this basis, the following regional models can be proposed:

1. Northern Bulgaria (Pleven, Razgrad, Veliko Tarnovo, Dobrich, Plovdiv), which are characterized by many cooperatives, but smaller staff per cooperative. Grain-producing and mixed cooperatives with highly mechanized and seasonal work dominate there, i.e. lower staff requirements.

2. Southern Bulgaria (Pazardzhik, Pernik, Smolyan, Haskovo). In these regions there are fewer cooperatives, but with a larger cooperative staff. The focus is on livestock, perennial crops, vegetables - these are labor-intensive, complex activities. Mountainous regions compensate for smaller areas with a larger workforce.

In general, the following grouping can be made: Northern Bulgaria model: more cooperatives, smaller size (intensive, mechanized, grain-oriented). Southern Bulgaria: fewer cooperatives, larger size (labor-intensive, diversified production).

This reflects the average size of the agricultural cooperative workforce. On average, there are about 30.8 cooperatives per district. This shows that some districts have very small cooperatives, while others have few, but possibly larger ones. Districts with a higher average number of staff per cooperative may have larger, more centralized agricultural operations. Districts with many cooperatives but low numbers of staff per cooperative may have smaller, fragmented farms. The combination of the number of cooperatives and staff allows for clustering to identify different agricultural structures across Bulgaria. This implies the preparation of a Cluster Analysis, for which purpose districts are grouped by similar characteristics, in this case number of staff and number of cooperatives (Table 1).

*Table 1. Cluster assignment*

| District | Personnel, Av. | Cooperatives, Av. | Cluster (example) |
|---|---|---|---|
| Blagoevgrad | 10.9 | 6 | 1 (small/few) |
| Burgas | 10.6 | 59 | 3 (many, low staff per coop) |
| Varna | 4.5 | 45 | 3 |
| Veliko Tarnovo | 11.0 | 57 | 3 |
| Vidin | 7.9 | 7 | 1 |
| Vratsa | 12.1 | 27 | 2 (medium) |
| Gabrovo | 7.3 | 12 | 1 |
| Dobrich | 7.1 | 55 | 3 |
| Kardzhali | 5.8 | 4 | 1 |
| Kyustendil | 16.0 | 14 | 2 |
| Lovech | 8.0 | 10 | 1 |
| Montana | 15.4 | 21 | 2 |
| Pazardzhik | 24.5 | 25 | 2 |
| Pernik | 21.9 | 30 | 2 |
| Pleven | 22.6 | 59 | 3 |
| Plovdiv | 8.3 | 60 | 3 |
| Razgrad | 23.4 | 32 | 2 |
| Ruse | 11.7 | 38 | 3 |
| Silistra | 18.4 | 35 | 2 |
| Sliven | 18.9 | 20 | 2 |
| Smolyan | 20.5 | 6 | 1 (few but very large staff per coop) |
| Sofia Region | 16.0 | 47 | 3 |
| Sofia (Capital) | 15.2 | 14 | 2 |
| Stara Zagora | 15.3 | 55 | 3 |
| Targovishte | 16.3 | 33 | 2 |
| Haskovo | 17.7 | 38 | 2 |
| Shumen | 10.4 | 30 | 2 |
| Yambol | 14.9 | 24 | 2 |

*Source:* Ciela Norma, 2023 and own calculations.

1. *Cluster 1 (small/few)*: Blagoevgrad, Vidin, Gabrovo, Kardzhali, Lovech, Smolyan - few cooperatives or very small/large personnel per coop.

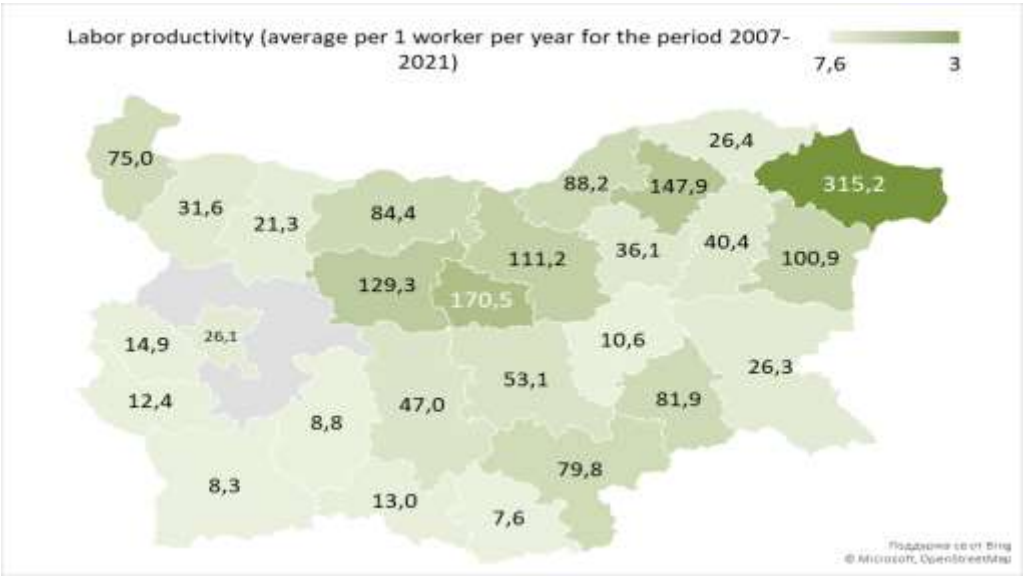
2. *Cluster 2 (medium/large staff)*: Kyustendil, Montana, Pazardzhik, Pernik, Razgrad, Silistra, Sliven, Sofia (Capital), Targovishte, Haskovo, Shumen, Yambol - moderate number of cooperatives with higher personnel.

3. *Cluster 3 (many small coops)*: Burgas, Varna, Veliko Tarnovo, Dobrich, Pleven, Plovdiv, Ruse, Sofia Region, Stara Zagora - many cooperatives, relatively low staff per coop.

*Analysis of Labor Efficiency in Bulgarian Agricultural Cooperatives (2007-2021)*

The empirical data for the 2007-2021 period demonstrate that Bulgarian agricultural cooperatives operate under conditions of moderate efficiency, reflected by an average labor productivity of approximately 75-80 thousand BGN per worker and an average profitability coefficient of around 5.2. These values suggest a stable yet suboptimal utilization of labor and capital resources, consistent with structural constraints in the sector-fragmented land ownership, uneven mechanization, and heterogeneous management practices (Fig. 8).

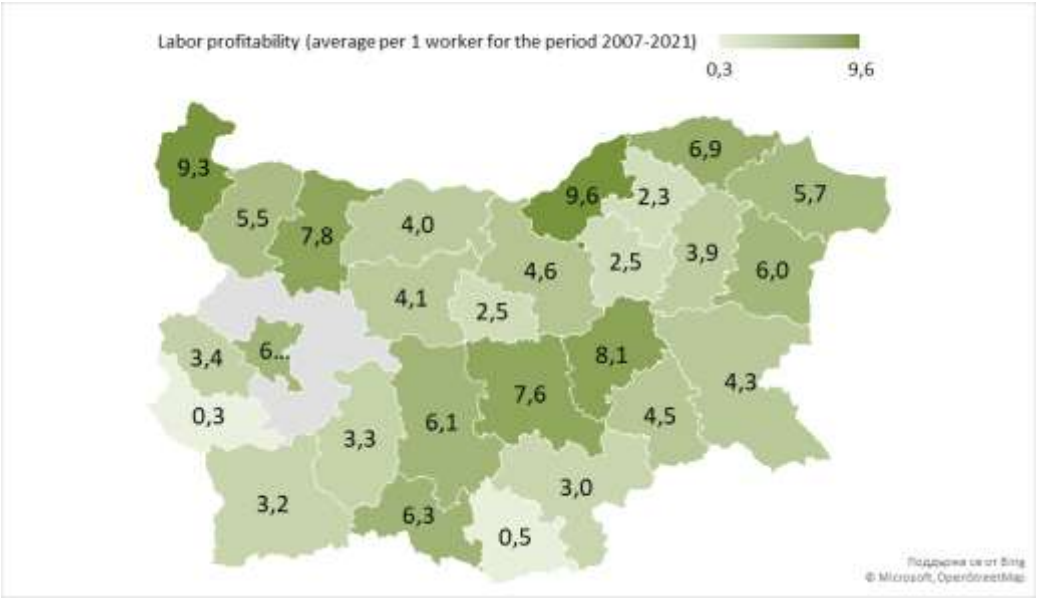
*Fig. 8. Labor productivity (average per 1 worker per year for the period 2007-2021)*




*Source:* Ciela Norma, 2023 and own calculations.

The Ruse (9.6), Vidin (9.3), Sofia (8.3), Vratsa (7.8), and Sliven (8.1) districts display the highest profitability coefficients, reflecting effective management models, developed mechanization, and strong market integration. These areas are predominantly characterized by larger cooperative structures and specialization in high-yield or high-value crops (Fig. 9).

*Fig. 9. Labor profitability (average per 1 worker for the period 2007-2021)*




*Source:* Ciela Norma, 2023 and own calculations.

In terms of productivity, Dobrich (315.2 thousand BGN/worker) dominates the national landscape, followed by Veliko Tarnovo (111.2), Ruse (88.2), Pleven (84.4), and Yambol (81.9). The Dobrudzha region (Dobrich) represents a clear outlier, as its specialization in grain and oilseed crops-commodities with high output-to-labor ratios-results in exceptional productivity. However, the region's profitability (5.7) remains moderate, suggesting lower value-added margins and higher sensitivity to market price fluctuations.

Conversely, Kyustendil (0.3) and Kardzhali (0.5) exhibit extremely low profitability, with corresponding productivity levels of 7.6 and 8.8 thousand BGN per worker, respectively. These regions are typified by mountainous and semi-mountainous terrain, fragmented holdings, and limited mechanization, leading to labor-intensive, small-scale production and diminished economic returns.

The Pearson correlation coefficient ($r = 0.47$) demonstrates a moderate, positive linear association between productivity and profitability. This result indicates that a 1-thousand BGN increase in labor productivity is associated, on average, with a 0.027 increase in profitability coefficient. Second, Productivity explains approximately 22% of the variation in profitability across regions. The remaining 78% of variability is likely driven by non-productivity factors (crop specialization, market conditions, input costs, governance efficiency, etc.).

While regions with higher productivity tend to achieve higher profitability, the relationship is not deterministic. This pattern implies that factors beyond pure output

efficiency-such as product specialization, value-chain integration, and market access-exert significant influence on profitability outcomes. For instance:

- Ruse combines high productivity (88.2) and high profitability (9.6), exemplifying an integrated and mechanized cooperative model.
- Dobrich achieves the highest productivity but only moderate profitability, illustrating a scale-dominant but margin-sensitive system.
- Sliven, in contrast, maintains high profitability (8.1) despite low productivity (10.6), likely due to specialized high-value crops (e.g., viticulture).

This heterogeneity underscores that profitability in agricultural cooperatives is a multifactorial outcome, influenced by crop composition, technological adoption, and management efficiency, rather than productivity alone.

Aggregated results by macro-region reveal that Northern Bulgaria (profitability 5.4; productivity 105.0) significantly outperforms Southern Bulgaria (profitability 4.9; productivity 52.1). Northern cooperatives benefit from: Larger average farm size and greater land consolidation; Higher mechanization rates; Predominance of extensive cereal production, enabling economies of scale. Southern Bulgaria, though more diversified in agricultural structure-emphasizing permanent crops, livestock, and mixed farming systems-faces higher labor intensity and lower mechanization levels, which suppress productivity. Nevertheless, the region maintains relatively stable profitability per product unit, indicating resilience and risk diversification through product variety. The observed disparities suggest a dual structure in Bulgarian cooperative agriculture: Highly productive, mechanized cooperatives in the North, oriented toward bulk crop production and scale efficiency; Smaller, diversified, but labor-intensive cooperatives in the South, focused on market niches and specialized crops. This duality has implications for agricultural policy:

- Targeted investment in mechanization and infrastructure in southern and mountainous regions could help narrow the efficiency gap.
- Policy incentives promoting value-added processing and cooperative integration into supply chains may enhance profitability even in high-productivity, low-margin regions like Dobrich.
- Encouraging digitalization and precision agriculture technologies could further strengthen the correlation between productivity and profitability by reducing inefficiencies.

To assess the interrelationship between labor productivity (LP) and labor profitability (PR) across Bulgarian regions, descriptive statistics were complemented with correlation and regression analyses. Given the cross-sectional structure (regional averages, 2007-2021), the analysis focuses on structural relationships rather than time dynamics. (Table 2).

*Table 2. Descriptive Statistics and Variability*

| Indicator | Mean | Min | Max | Std. Deviation | Coefficient of Variation |
|---|---|---|---|---|---|
| Labor profitability | 5.2 | 0.3 | 9.6 | 2.9 | 55.8% |
| Labor productivity (thousand BGN) | 75.8 | 7.6 | 315.2 | 73.1 | 96.4% |

*Source:* Ciela Norma, 2023 and own calculations.

The coefficients of variation (>50%) indicate high interregional heterogeneity, confirming that Bulgarian cooperative agriculture is not uniform in efficiency. The productivity distribution is particularly skewed, with Dobrich representing a statistical outlier (>3 SD above the mean).

*Table 3. Structural regional differences into Northern and Southern Bulgaria subgroups.*

| Region | Regression Coefficient ($\beta_1$) | $R^2$ | Significance (p) | Interpretation |
|---|---|---|---|---|
| Northern Bulgaria | 0.019 | 0.18 | 0.07 | Moderate positive relationship; productivity explains ~18% of profitability variation |
| Southern Bulgaria | 0.032 | 0.29 | 0.02 | Stronger effect of productivity on profitability, reflecting smaller-scale but more market-sensitive cooperatives |

*Source:* Ciela Norma, 2023 and own calculations.

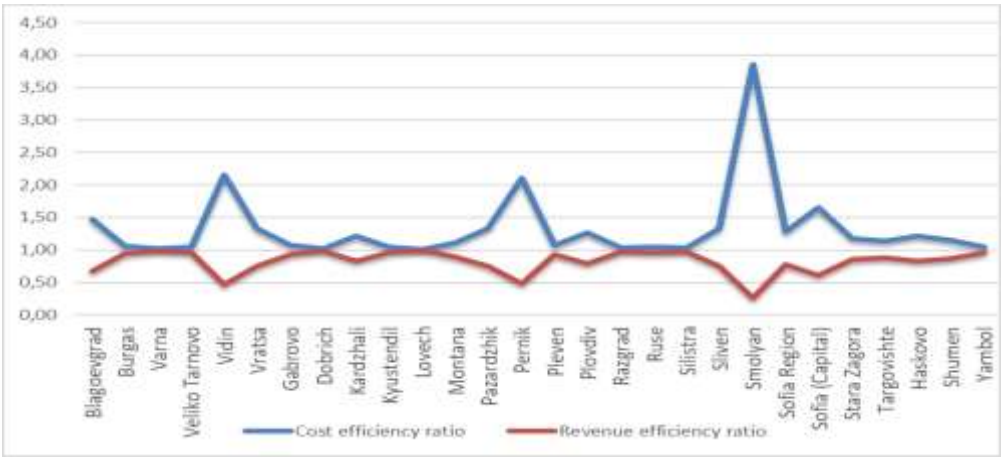
The elasticity of profitability with respect to productivity is higher in Southern Bulgaria, suggesting that marginal gains in efficiency yield greater profit sensitivity in smaller and more diversified cooperatives. A Levene's test for homogeneity of variances indicates significant interregional inequality ($p < 0.01$), particularly between the Dobrich-Ruse cluster and mountainous districts such as Kardzhali and Kyustendil. This variance pattern reflects structural dualism in Bulgarian cooperative agriculture: Capital-intensive, mechanized cooperatives (high productivity, stable profit ratios); Labor-intensive, small-scale cooperatives (low productivity, volatile profits). Thus, profitability emerges as a multifactorial outcome of technological, structural, and market-related variables, rather than a direct function of productivity alone.

*Cost efficiency ratio and Revenue efficiency ratio average for regions in Bulgaria*

The cost-effectiveness ratio shows how many times the profit covers the costs (Fig. 10). The higher it is, the more efficiently the costs are used. The highest values are Smolyan: 3.9 - extremely efficient costs; Vidin: 2.2; Pernik: 2.1 and Sofia (Capital): 1.7. Medium and lower efficiency (≈1.0-1.3): most districts such as Varna, Veliko Tarnovo, Dobrich, Lovech, Razgrad, Ruse, Silistra and Yambol. This means that the costs almost correspond to the revenues and the profit is relatively small.

Revenue efficiency ratio shows how efficiently the revenues lead to profit (profit/revenue). The lowest values (≦0.5) are Smolyan: 0.3 - a large part of the revenues is spent; Vidin and Pernik: 0.5 and Sofia (Capital): 0.6 With medium values (0.7-0.8): Blagoevgrad, Vratsa, Pazardzhik, Plovdiv, Haskovo, etc. The highest (≈0.9-1.0) are Varna, Veliko Tarnovo, Dobrich, Kyustendil, Lovech, Razgrad, Ruse, Silistra, Yambol – relatively good profitability of revenues.

*Figure 10. Cost efficiency ratio and Revenue efficiency ratio average for regions in Bulgaria (2007-2021)*




*Source:* Ciela Norma, 2023 and own calculations.

Districts with extremely high profit to cost ratio are Smolyan: although revenues are small (129.8), profit is 96.1- very high-cost efficiency (3.9), followed by Vidin with profit 79.5 at costs 68.7. And Pernik: profit 46.6 at costs 42.3. Districts with high revenues but low profitability are Dobrich: revenues 1968.1, profit only 32.5- almost everything is spent. Varna: revenues 1091.2, profit 23.2 - profitability ≈2%. Small districts (such as Smolyan, Vidin, Pernik) are distinguished by high-cost efficiency, but not always with a large overall impact on the economy. Large districts with high revenues (Dobrich, Varna, Veliko Tarnovo) have low-cost efficiency, which indicates that a large part of the revenues is spent. Sofia (Capital) has average revenue and good cost efficiency, but profitability to revenue is moderate.

**Conclusion and Recommendations**

In the context of diverse economic, social and institutional challenges, the study of cooperatives in Bulgaria should be deepened and upgraded. Answers must be found to a number of questions related to both their historical development and the prospects for their future functioning. Cooperatives as a form of association represent a sustainable organizational structure that over the years has played a significant role in the production, processing and trade of various types of agricultural and industrial products in Bulgaria. They continue to be important today, especially in the context of supporting vulnerable social groups, stimulating local employment and promoting social integration in rural areas.

The period 2007–2021 evidences a stable yet uneven pattern of cooperative efficiency across Bulgaria. Northern Bulgaria demonstrates approximately double the productivity of the South, with only marginally higher profitability. The moderate correlation ($r = 0.47$) between productivity and profitability confirms that output quantity does not necessarily translate into proportional economic gains. The regions of Ruse and Dobrich emerge as benchmarks of cooperative performance, while mountainous areas such as Kardzhali and Kyustendil remain structurally disadvantaged. Overall, the findings suggest that sustainable improvement of cooperative efficiency requires differentiated regional strategies, balancing mechanization, specialization, and market integration to achieve both productivity growth and equitable profitability. The **cost efficiency ratio** and **revenue efficiency ratio** further confirm the dual nature of cooperative performance. Smaller regions (Smolyan, Vidin, Pernik) exhibit high-cost efficiency-low expenses relative to profit—while large agricultural regions (Dobrich, Varna) show the opposite pattern: high revenues but limited profit margins, indicating higher operational costs or reinvestments. This asymmetry underlines the influence of scale economies and production type on financial efficiency. The overall pattern reveals a structurally dual agricultural landscape, where northern mechanized cooperatives outperform in scale efficiency, and southern diversified cooperatives compensate through market adaptability. Long-term competitiveness will depend on the integration of productivity growth with market-oriented strategies, emphasizing technological modernization, cooperative governance, and regional differentiation.

In addition to their practical role in the economy, the in-depth study of the cooperative sector also has a significant theoretical contribution - it contributes to a better understanding of the cooperative model as a specific form of socio-economic organization, combining market mechanisms with principles of solidarity and mutual assistance. Finding effective solutions to the problems faced by Bulgarian cooperatives is of key importance not only for enriching cooperative theory, but also for improving cooperative practice. Only in this way can it meet the requirements of the modern economy and the goals of sustainable development.

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# PARALLEL SESSIONS

## SECTION 1:

## COOPERATIVES IN SOCIO-ECONOMIC CONTEXTS: ROLE, SUSTAINABILITY, AND LEGAL CHALLENGES

# LABOR-PRODUCTION COOPERATIVES ARE NOT AND CANNOT BE START-UP COMPANIES

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***Abstract***

*This report provides a comparative analysis of labor-productive cooperatives in Bulgaria, on the one hand, and startup companies, on the other. The aim is not only to show the significant differences between them, but also to prove that labor-productive cooperatives must modernize in the conditions of market competition economy and cyclical economic crises, as well as crises with global dimensions. But they should not change their essence by copying the way other participants in economic life are created and function, for example, startup companies. This is especially important when creating new labor-production cooperatives.*

***Keywords****:* Labor-production cooperatives; National Union of Labor-Production Cooperatives; *start-up companies*

***JEL Codes:*** *P13, Q13*

## Introduction

Throughout their development, the labor-production cooperatives (LPCs) and their union – the National Union of Labor-Production Cooperatives (NULPC) combine traditions and modernity, fitting into the economic and social life of Bulgaria.

As we express it today, labor-production cooperatives are a truly active subject of the social and solidarity economy, but they have been fulfilling this role since their creation (Zhelyazkova, 2010, pp. 35 – 36).

"The innovativeness of LPCs is that they are built on the property and labor participation of their members. A new type of ownership of capital is emerging - cooperative ownership. This is group (collective) property, sole right of the cooperative as a legal entity, unlike private corporate property, which is personified in shares and/or shares of the owners. In LPC labor income is the main one, and the dividend received on the capital is additional. Social problems are put in the foreground" (Stoyanova, 2015, p. 15).

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In Bulgaria, after 2012 – the year declared by the UN as the International Year of Cooperatives – there has been a movement in state policy towards the revival of the cooperative sector. This can be judged by the measures taken to change the legislation (Andreev, 2012, pp. 22– 41).

It is important for the modernization of LPCs not to deviate from their essence by copying the way of creation and functioning of other participants in economic life, for example, startup companies.

**Legal definitions**

In the General Provisions of Chapter One of the Cooperatives Act, in Article 1, the following definition is given: „A cooperative is an association of individuals with variable capital and a variable number of members who, through mutual assistance and cooperation, carry out commercial activities to satisfy their needs. The cooperative is a legal entity.” Article 1a regulates State Support and Encouragement: The State may support and encourage cooperatives in their activities under the conditions and in accordance with the procedure set out in the relevant special laws (Cooperatives Law).

The concept of "cooperative" was defined by the anniversary congress of the International Cooperative Union (ICU) in 1995 as follows: "a collective democratically governed organization, being an autonomous and voluntary association of people, based on principles for the improvement of the common economic, social and cultural goods."

In 2002, the International Labour Organization (ILO) redefined the concept as follows: “an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a mutually owned and democratically controlled enterprise.”

**Essence of labor-production cooperatives**

The labor-production cooperatives in Bulgaria fully meets these definitions, but also has some peculiarities, namely: in them profit is not the main guideline and criterion for their efficiency; the applied technologies are more labor-intensive than capital-intensive; the level of competition is low; price levels (including labor costs) are lower than usual on the market, etc.

LPC is a special type of enterprise, it is created as an association of individuals who, through mutual assistance and cooperation, carry out activities to satisfy their economic, social and cultural interests, i.e. the cooperative is addressed to its members.

„The main goal of the cooperative is social support and protection of weaker groups of the population. The creation and functioning of cooperatives is based on cooperative values and principles adopted by the ICC. Shared values relate to mutual assistance, democracy, equality, justice, solidarity, honesty, openness, social responsibility, care for others“ (Stoyanova, 2015, p. 14).

Cooperative principles are the guiding principles in the life of LPCs. The shared basic principles are related to voluntary association and free membership; control exercised by the members (one member - one vote); participation of the members on an economic principle (with share capital); self-government and independence.

Labor-production cooperatives in Bulgaria operate in the conditions of a market economy and cyclical economic crises, as well as crises with global dimensions. Labor-production cooperatives have their place and play an important role in the socio-economic life of our country at the present time.

First of all, they participate in economic turnover as equal market entities and compete with all other participants in it. Every cooperative is a trader from the point of view of the law and as such fights for its existence and participation in the economic life of the country.

LPCs provide employment to their members and thus allow them to exercise the constitutionally guaranteed right to work, while at the same time the member-cooperators are participants in the legally established decision-making process in the cooperative.

The responsibility of cooperatives to contribute with their efforts to the development of our country as a social state with a strong social and solidarity-based economy is gaining particular importance at the present time and shows the significant place they occupy in socio-economic life.

An extremely important role in the development of labor-production cooperatives is played by their union – the National Union of Labor-Production Cooperatives (NULPC).

NULPC as an organization has a solid foundation in shared values such as unity, solidarity, mutual assistance and dedication to the common cause. The democratic spirit and the power of every vote in the election of the strategy and specific measures have long been adopted, legally consolidated, but even more importantly, they are an integral part of the cooperative organizational culture.

**What is a startup?**

**Startup literally – I start from.... start up**

A startup is a young company founded by one or more entrepreneurs with the aim of developing a unique product or service and, accordingly, launching it on the market.

One of the most famous definitions of a startup was created by Steve Blank. He is a popular figure in the business world who has taught at universities such as Stanford and Berkeley. Blank describes the difference between a startup and a small business. According to him, a startup is a "temporary organization seeking a repeatable and scalable business" while a small business operates according to a fixed business model.

By its very nature, a typical startup is usually resource-limited. One of the first tasks of a startup company is to raise a significant amount of money to further develop the product. To do this, entrepreneurs need to present strong arguments, and/or a prototype, to support their claim that their idea is truly new or represents a major improvement on an existing product or service.

The vast majority of startups fail. On the other hand, some of the most successful companies today, Microsoft and Apple, started as startups.

**How does a startup work?**

At the most basic level, a startup works like a regular company, namely – a group of employees working together to create a product that customers buy. What sets a startup apart from other businesses is the way the processes are run.

Ordinary companies duplicate what has been done before. This means that they work from an existing template for how a company should operate, while the startup, on the other hand, aims to create an entirely new business template.

Another key factor that distinguishes the startups from the rest is speed to grow. The startups strive to develop their ideas very quickly. Rapid growth through innovation is in service of one ultimate goal, and that is going public. When a company opens up to public investment, it creates an opportunity for compensation for early investors.

**How is a startup funded?**

Startups typically raise funds through several rounds of funding:

1. Seed round – the moment when the founders and their relatives invest in the business.

2. Seed investors – Next comes the initial funding from so-called “angel investors” – high-net-worth individuals who invest in companies in the early stages of development.

3. A, B, C, and D – This is followed by series funding rounds, led primarily by venture capital firms, which invest tens to hundreds of millions in startups.

4. Going public – Startup companies may decide to go public and open themselves up to external funding through an IPO, acquisition by a special purpose vehicle, or direct listing on a stock exchange. Anyone can invest, and startups' founders and early backers can sell their shares to realize a big return on their investments. THERE'S A DECEPTIVE SIMILARITY WITH LPC HERE.

It is worth noting that the initial stages of financing for startup companies are limited to individuals called accredited investors, as their high income and net worth help protect them from potential losses.

Although everyone wants to get the return they deserve on their startup investment, statistics show that about 90% of startups fail. This means that early-stage investors can end up with a 0% return on their investment.

Startups differ from traditional businesses primarily because they are designed for extremely rapid growth. This means they have a product or service that they can sell to a broad customer base, which is not the case for most businesses.

In the business world, the word “startup” doesn’t just refer to a company that has just started operating. The term is also associated with a business that is usually technologically or financially oriented.

Businesses of this type face difficulties, especially in terms of financing. This is because investors seek the highest potential return on investment, while balancing the associated levels of risk, which in these cases are quite high.

**Conclusions**

The creation and functioning of labor-production cooperatives is based on cooperative values and principles, adopted by the ICC. Shared values relate to mutual assistance, democracy, equality, justice, solidarity, honesty, openness, social responsibility, care for others.

Cooperative principles are the guiding principles in the functioning of labor-production cooperatives.

The shared basic principles are related to voluntary association and free membership; control exercised by the members (one member - one vote); participation of the members on an economic principle (with share capital); self-government and independence.

The labor-production cooperatives have their place and play an important role in the socio-economic life of our country at the present time.

What distinguishes the labor-production cooperatives from the startups is:

1. The current LPCs are not and cannot be startup companies. Their life cannot be determined by external investors who are looking for quick returns and give up when an startup company does not grow and has low returns.

2. The cooperatives are sold /sold out/ by the owners.

3. New cooperatives should not start as startup companies and the state should support them within the framework of the law.

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# THE ROLE OF COOPERATIVES IN SUSTAINABLE GROWTH

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***Abstract***

*Cooperatives have an extremely important and significant role in promoting sustainable development, by offering economic, social and environmental benefits. They are voluntary associations of people and businesses that share a common goal and work for mutual benefit. Working on democratic principles, cooperatives provide several basic opportunities for reducing unemployment, as well as facilitating access to diverse credit sources, increase the income of their members and promote social equality. They are also oriented towards sustainable practices and environmental protection. Ecological methods are one of the basic methods that cooperatives include in their activities to improve environmental sustainability and green innovations. Cooperatives promote the use alternative green energy, minimize waste and apply sustainable agricultural technologies. The main idea of cooperatives is to promote responsible ecological production and non-excessive consumption. The main objective of this report is to analyze the theoretical frameworks for the importance of cooperatives and their role in promoting and maintaining sustainable economic growth and development. The main research methods are content analysis, analysis and synthesis method, intuitive and systematic approach.*

***Key words:*** *Cooperatives; Sustainable Growth; Economic; Democratic Principles; Social Aspects*

***JEL codes:*** *P13, Q13, Q56*

## Introduction

Sustainable development is considered a significant strategic goal in the current and future global economy, which integrates a number of social, economic and environmental aspects. In this context, cooperatives represent a unique organizational model, which contains social commitment combined with high economic efficiency. They are fundamentally different from all other non-economic organizations with a democratic structure, which is built on the "principles of collective participation and mutual benefit." Famous scientists claim that cooperatives are exceptionally more stable and resilient during

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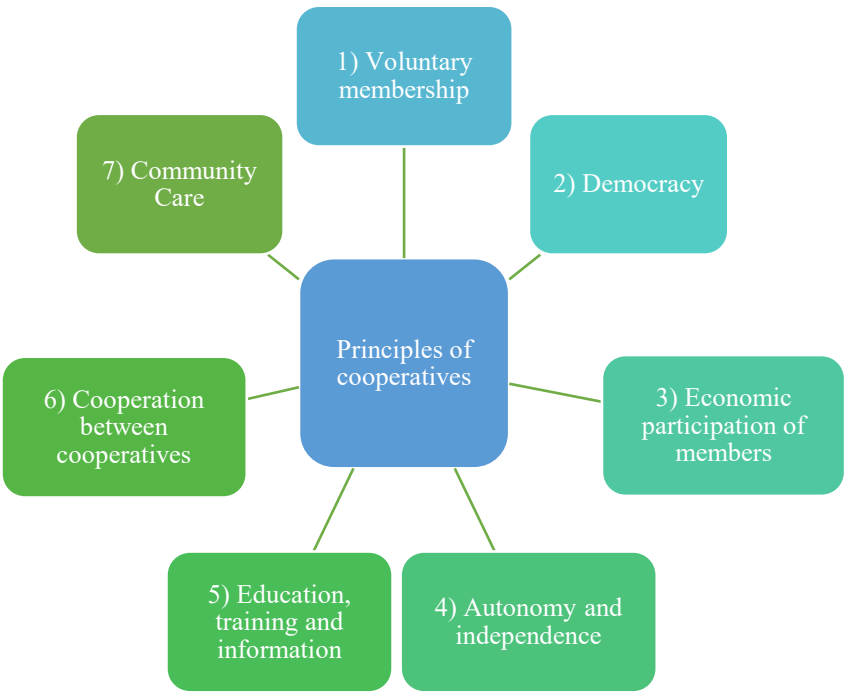
crises and crisis situations (Sanchez & Roelants, 2011). Other authors point out that cooperatives are "defined as important for society, as they can contribute to the stabilization of democracy by encouraging civil society to actively participate in a number of economic, social and political issues" (Brown, 1997). According to Stoyanova, "today, cooperatives are an important factor in the economic development and prosperity of a number of economies" (Stoyanova, 2020a). Sharing Stoyanova's opinion, cooperatives are a possible option "for addressing a number of challenges related to the economic and social areas of countries" (Stoyanova, 2020b). According to Kirov (2024, p.15), ”in the corporate world, the techniques refer to the process of engaging stakeholders, the community, and the media to listen to customer and public opinions, as well as sustainability issues”. This article examines the role of cooperatives as a factor for sustainable growth, focusing on their contribution to social integration, economic development and environmental protection.

**Theoretical Foundations of Cooperatives**

Cooperatives are a source of permanent employment and sustainable development. Thanks to their activities, the opportunities for generating greater economic growth and increasing the country's gross domestic product are increasing, create a favorable environment for innovation and for making socially significant entrepreneurial decisions. (ESC, 2011) The creators of the "Cooperative Movement" at the world level are identified as - Robert Owen, as well as the so-called "Rochdale Pioneers" - creators of the first consumer cooperative in the world in 1844 in the city of Rochdale, England. In the industrial heart of Great Britain, twenty-eight weavers united in an association in order to assist workers in textile factories by providing them with the opportunity to supply food products and housing at significantly more affordable prices compared to those offered by joint-stock companies of big capital. The activity of this first cooperative, named the "Society of the Fair Rochdale Pioneers", began with the opening of its own store. The organization's initial capital amounted to 16 pounds, 11 shillings and 11 pence. (COOP) The International Cooperative Alliance (ICA) defines a cooperative as “a fully autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise.” Fundamentally, cooperatives emerge as organizational forms established by individuals who identify a shared need and who commit to collective action in order to create and manage an enterprise designed to address that need. (International Co-Operative Alliance, 2025) The main purpose of a cooperative is to meet the economic, cultural and social needs of both its members and the wider community in which it operates. In this sense, cooperatives are not simply a form of economic organization, but socio-economic entities that integrate economic interest with the pursuit of public welfare. A characteristic feature of the cooperative model is its deep commitment to the local environment and its purposeful orientation towards strengthening and developing the community in which it exists or to which it provides services. When a cooperative achieves sustainable economic and financial results, the

benefits of its activities are not concentrated in a limited circle of external investors or shareholders, but are distributed to the benefit of its members and the entire community served. In this way, the cooperative combines economic efficiency with social justice, creating the conditions for wider participation in decision-making processes and for a more even distribution of the added value created. This model of functioning significantly distinguishes it from traditional corporate structures and makes it a significant instrument for achieving sustainable development and social cohesion. In this line of thought, cooperatives are based on several fundamental principles. Created in 1995, the values mentioned are based on several core principles, popularly known as the "Rochdale Principles", which were established around 150 years ago. It is the principles that co-operatives must adhere to that give them guidance and opportunities to implement these values in their activities and practices. (NCBA CLUSA, 2025) These principles are as follows: (Figure 1)

*Figure no. 1 Principles of cooperatives*




*Source*: author's research

The following clarifications can be drawn from the presented figure:

1) Voluntary membership – can be any person who is willing to take on the responsibilities of membership in a cooperative and wishes to use the services of a cooperative. In general, „the common goal is to strive for the benefits of its members“. (Bretos & Marcuello, 2017)

2) Democratic control by members - Cooperatives are controlled by their members. They have control over the creation of rules and policies for the cooperative, as well as the

right to make a number of management decisions related to the cooperative. By their nature, cooperatives can organize their members without a strictly defined hierarchy and leadership, or into different departments, since each member is democratically accountable for their actions to the other members. (Rey & Tirole, 2007).

3) Economic participation of members - the principle means that members increase the capital of the cooperative in a fair, legal, and democratic manner. Almost all of the capital of a cooperative becomes the property of the cooperative itself, which means that it is not distributed among the individual members of the cooperative.

4) Autonomy and independence - cooperatives are designed to be independent and self-governing, which means they are democratically controlled. This in turn, means they cannot be controlled by another external organization or enterprise.

5) Education, training and information - for the benefit of the cooperative, the members and managers (board of directors) are given the opportunity to undergo various courses, trainings or specialized education. As this will improve the cooperative and the possibility for it to develop. It is interesting that cooperatives make efforts for various information campaigns and public education related to the activities and mission of the respective cooperative.

6) Collaboration between cooperatives - to create a better society and a greener environment, cooperatives interact and work together by creating regional, national and global structures.

7) Caring for the community - the members of each cooperative must develop policies that are approved by all other cooperatives and contribute to the development and improvement of the community in a more sustainable way.

As mentioned above, each cooperative, either individually or in a community, plays an extremely important role in the national and regional economies of the respective country, and their contribution to economic growth is manifested in several interrelated directions. First of all, they play a key role in supporting small and medium-sized enterprises by providing easier access to resources, markets and cooperation networks. In this way, the cooperative model stimulates entrepreneurship and promotes competitiveness in sectors that are often vulnerable to the pressure of big capital. In addition, cooperatives are a significant factor in creating employment, especially in rural areas and economically less developed territories. Through their activities, they not only provide an alternative for employment for the local population, but also help to retain young people in communities, thus counteracting the processes of migration and depopulation. Another significant aspect of their economic importance is related to strengthening financial stability. Through cooperative banks and credit unions, members gain access to financial services and credit, which in the traditional banking system are often limited or subject to less favorable conditions. In this way, cooperatives facilitate investment and support the sustainable development of the local economy. Last but not least, cooperatives contribute to the reduction of social inequality. Unlike traditional corporate structures, where profits are distributed primarily among

shareholders, the cooperative model ensures a fairer distribution of income and benefits from business activities among all members. This creates the conditions for greater social cohesion, strengthening community ties and promoting social justice. According to Kirov (2023, p.23), “the organizational structure of cooperatives, as well as the prevailing culture, often leads managers to think completely rationally, strictly committed to the implementation of plans, to the achievement of operational objectives, elements that, of course, must be measurable”.

Solidarity cohesion and the promotion of social solidarity are some of the processes in which cooperatives play a significant role. They are seen as organizational structures that combine economic objectives with broader social functions aimed at building just and sustainable communities. One of their main characteristics is the desire to promote social justice and equality, which is achieved through the democratic principle of participation and through the equitable distribution of benefits among members. In addition, cooperatives actively participate in various community development initiatives, supporting the creation of social infrastructure, investing in educational and cultural activities and stimulating local projects that improve the quality of life. Their presence is particularly important for vulnerable groups in society, as through cooperative structures they gain access to basic services, employment opportunities and support in the process of social integration. No less significant is the impact of cooperatives on strengthening social capital. By building trust, mutual assistance and cooperation between members, sustainable social ties are formed that go beyond the framework of economic activity and contribute to a higher degree of social cohesion. In this way, the cooperative model combines economic efficiency with social responsibility, becoming a key tool for the development of inclusive and solidary societies. Within the framework of the social economy, cooperatives are considered as a specific organizational entity. By their origin and goal setting, they represent structures that integrate and balance the economic and social needs of society with the interests and expectations of their members, while at the same time promoting manifestations of social responsibility. The fundamental components of this process include: effective management and sustainable development; ensuring stable and secure employment; promoting business ethics; creating innovative and high-quality products and services; ensuring healthy and safe working conditions; protecting human rights and protecting the environment; active participation in the socio-economic life of local communities and forming models of socially responsible and tolerant behavior. In this sense, cooperatives fully embody the characteristics of social economy entities. According to Kirov (2025, p.27), “the trust, integrity and honesty of management and cooperatives are under constant stress. Business managers can face ethical issues at various levels: personnel, organizations, commerce, society and the globe”.

Despite their significant potential and their proven role in economic and social development, cooperatives often face a number of structural and organizational challenges. One of the main problems is related to the limited opportunities for access to capital and investment. Unlike traditional corporate structures that can rely on significant external

financial resources, cooperatives usually operate mainly on the basis of internal contributions from members, which limits their capacity to expand and innovate. Another significant factor is the insufficient awareness and promotion of the cooperative model. In many countries, there is limited knowledge about the principles, advantages and sustainability of cooperatives, which leads to an underestimation of their potential and to weaker participation of the population in such structures. This is also closely related to the administrative and legal obstacles that often hinder the creation and functioning of cooperatives, due to insufficiently adapted regulatory frameworks or excessive bureaucracy. In addition, modern economic conditions present cooperatives with the need to modernize and digitize their activities. In times of accelerated technological development and the digital economy, cooperatives need to invest in innovation, new business models and digital solutions to increase their efficiency and competitiveness. The lack of such transformation can lead to lagging behind traditional market actors and limiting opportunities for sustainable development. Kirov (2022, p.110) notes, that "the new technologies determine both stability and mobility, variability of the content and forms of activity in the cooperatives". According to Schwettmann (2020), „the ability of cooperatives to effectively contribute to the achievement of the SDGs is limited by five factors, none of which seems insurmountable:"

- The environmental challenge: In certain countries, there are policies and regulations, as well as laws, designed to support cooperatives that are in the process of development. This means that the establishment and proper functioning of democratic and truly controlled cooperatives are not normally accepted and therefore are not viable cooperatives. In this way, cooperative members and cooperatives themselves are exposed to a kind of fraud concerning the basic principles of cooperatives.
- The size challenge: Schwettmann also write that the „"It is of utmost importance that cooperatives be large enough to reach the point of economic profitability, and at the same time small enough to allow individual members of the cooperative to participate meaningfully. In such a case, the most optimal size of the cooperative is specified by some economic factors (for example, financial cooperatives can realize the point of profitability much earlier than some marketing cooperatives) and social and societal factors. This also explains why cooperatives are more prosperous in certain African communities than in others around the world. Appropriate and democratically managed vertical organizations provide the opportunity to resolve issues related to the "optimal size." (Schwettmann, 2014)
- The challenge of governance: the various members of the cooperative can be ordinary consumers, farmers, employees, fishermen, workers in the informal economy, artisans – this does not make them managers. For the purposes of the study, it is necessary to clarify that smaller cooperatives do not have the opportunity to hire professional managers and for this reason they need to trust the skills of pre-selected leaders who may differ in their craft, but have never seen balance. This is defined as the other side of the coin of "democratic governance", which needs to be resolved as leaders are qualified through a

series of training, education, consultations, etc. According to Kicheva-Kirova and Kirov (2020, p. 11), “there was an administrative-command system in Bulgaria for a long time. At its core was hierarchy, the most powerful management tool.”

- "The Innovation Challenge": Normally, cooperatives are most common in traditional sectors of the economies of a given country, such as agriculture, trade in small settlements, finance, retail, etc. We have all observed that in recent years the economy has become increasingly connected to the Internet, artificial intelligence, digitalization, online shopping and a variety of other sales, etc. which in turn requires new types of cooperatives. Accordingly, cooperative organizations such as Wikipedia, Mozilla and Linux have been extremely successful due to their accessibility, popularity and the availability of "open source". Also, new and new cooperatives are emerging to create green sustainable energy from renewable sources, recycling of waste materials, environmental protection technologies, etc.
- The challenge of flexibility: The Sustainable Development Goals are known as goals that require cooperatives to be cooperatives, which means that cooperatives can be of any type and can be initially registered and demonstrably full-fledged cooperatives. Some such examples are in the field of trade, electricity distribution, software programming, recycling, waste transportation, small insurance transactions, etc. This means that they are carried out by enterprises that are not strictly classified or labeled as cooperatives. McKinsey & Company writes that “it is imperative that cooperatives be loyal to their defined values, while adapting to modern technologies, dynamic markets and global changes.” (McKinsey & Company 2012)

The challenges outlined by Schwettmann (2020) show that while cooperatives have significant potential to contribute to the achievement of the Sustainable Development Goals, their effectiveness is tied to overcoming structural and organizational constraints. Factors related to the institutional environment, optimal size, management skills, innovation capacity and the necessary flexibility represent key dimensions of the sustainable functioning of the cooperative model.

**Cooperatives for More Sustainable Development.**

In the face of growing global challenges related to the protection of natural resources and overcoming climate change, cooperatives are establishing themselves as one of the pioneers in the implementation of environmentally responsible practices. Their organizational structure, based on collective responsibility and a long-term orientation towards the community, creates a favorable environment for the implementation of sustainable models of production and consumption. The efforts of cooperatives in the field of the use of renewable energy sources are particularly significant, through which they contribute to reducing the carbon footprint and achieving energy independence of local communities. In the field of agriculture, they actively promote practices related to sustainable and organic production, which simultaneously preserve ecosystems and provide

healthy food products for the population. In addition, cooperatives implement various measures to reduce and recycle waste, thus creating a model for responsible resource management. Support for initiatives aimed at responsible consumption and production is another dimension of their environmental commitment, which strengthens the link between economic activity and environmental protection. As a result of these efforts, cooperatives not only demonstrate an alternative approach to business, but also contribute to building a more sustainable and environmentally responsible society. The following sustainable development goals 2030 for Bulgaria have been published in Monitorstat at the National Statistical Institute, which are also key goals for cooperatives: (Monitorstat, 2024)

1) „Eradicate poverty in all its forms everywhere“;

2) „End hunger, achieve food security and improved nutrition, promote sustainable agriculture“;

3) „Ensuring healthy lives and promoting well-being for all at all ages“;

4) „Ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all“;

5) „Achieving gender equality and ensuring opportunities for all women and girls“;

6) „Ensuring the availability and sustainable management of water and sanitation for all“;

7) „Ensuring access to affordable, reliable, sustainable and modern energy for all“;

8) „Promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all“;

9) „Building resilient infrastructure, promoting inclusive and sustainable industrialization and stimulating innovation“;

10) „Reducing inequality between and within countries“;

11) „Transforming cities and towns into inclusive, safe, adaptable and sustainable places to live“;

12) „Ensuring sustainable consumption and production patterns“;

13) „Taking urgent action to combat climate change and its impacts“;

14) „Conservation and sustainable use of oceans, seas and marine resources for sustainable development“;

15) „Protect, restore and promote the sustainable use of terrestrial ecosystems, sustainable forest management, combat desertification, halt and reverse land degradation and halt biodiversity loss“;

16) „Promoting peaceful and inclusive societies for sustainable development, ensuring access to justice for all and building effective, accountable and inclusive institutions at all levels“;

17) „Strengthening the means of implementation and relaunching the global partnership for sustainable development“.

It is no coincidence that all of the goals mentioned above are tied to the real challenges facing people around the world, including climate change and its consequences on a global

scale, the increase in population in some parts of the world, i.e. "overpopulation", and last but not least, the increase in production of various goods with single use, harmful materials or with the impossibility of recycling. (Lafont, et.all, 2023) By uniting each type of cooperative with different sustainable development goals and addressing the challenges, different effective corporate social responsibility strategies can be implemented that are in line with the global sustainability goals. Cooperatives, due to their organizational structure based on democratic participation, solidarity and social responsibility, have a unique capacity to contribute to the implementation of almost all Sustainable Development Goals (SDGs). By creating jobs, providing access to financial services and supporting small producers, cooperatives ensure income and food security. Agricultural cooperatives help smallholder farmers increase their productivity and have access to markets, which reduces hunger and poverty - Eradicate poverty and end hunger (SDGs 1 and 2). Health insurance and consumer cooperatives often provide affordable health services and products, especially in regions where the state or private sector is limited, in line with SDG 3 Health and Well-being. Cooperatives invest in educational programs and training for their members, promoting lifelong learning. They provide opportunities for women to participate in economic and management activities, thus contributing to gender equality. (Education and gender equality (SDGs 4 and 5). Water, energy and environmental cooperatives implement sustainable practices – from access to clean water and renewable energy sources to waste management and biodiversity conservation. They stimulate environmentally responsible production and consumption, contributing to the fight against climate change. Characteristic of the goal Sustainable resource management - SDGs 6, 7, 12, 13, 14 and 15. Economic growth, industrialization and innovation (SDGs 8 and 9), as cooperatives support sustainable economic growth by creating decent jobs and by providing access to resources to small and medium-sized enterprises. They also promote innovation, especially in the field of social entrepreneurship. Reduced inequalities and sustainable cities (SDGs 10 and 11), through equitable income distribution and support for local communities, cooperatives reduce social and economic inequality. Housing and service cooperatives contribute for the development of more accessible and sustainable urban spaces. Peace, institutions and partnerships (SDGs 16 and 17), as the cooperative model is based on the principles of democratic participation, transparency and mutual accountability, which are the foundation of peaceful and inclusive societies. In addition, cooperatives often participate in international networks that support the global partnership for sustainable development.

**Conclusion**

Cooperatives are establishing themselves as a specific organizational model, combining economic efficiency with social responsibility and environmental commitment. The analysis of their role shows that they have the potential to be both an economic stabilizer and a catalyst for social cohesion, while supporting the achievement of the global goals for sustainable development. The development of the cooperative sector is of key importance

for the future of sustainable development, requiring targeted policies, support from the state and active participation of local communities. The main conclusions from the study can be presented as follows:

First, cooperatives create conditions for sustainable economic growth by stimulating entrepreneurship, creating employment and facilitating access to financial resources. They support small and medium-sized enterprises and thus strengthen the competitiveness and sustainability of local economies.

Second, the social dimension of the cooperative model is manifested in building solidary communities, reducing social inequality and providing opportunities for vulnerable groups. Through democratic participation and equitable distribution of benefits, cooperatives strengthen social capital and promote broader inclusion in decision-making processes.

Third, the ecological orientation of cooperatives is expressed in the implementation of sustainable practices – use of renewable energy sources, promotion of organic farming and waste management. In this way, they not only reduce the negative impact on the environment, but also form a new model of responsible production and consumption.

Despite their distinct advantages, cooperatives face a number of challenges, including limited access to capital, the need for digitalization and modernization, and the lack of promotion of their potential. Overcoming these barriers is a key condition for their full integration into sustainable economic and social policies.

Cooperatives are a sustainable organizational model that integrates economic, social and environmental goals. They make a significant contribution to social cohesion by reducing inequalities and strengthening community ties. The cooperative sector is a key factor in environmental sustainability, introducing practices that are responsive to global challenges. Targeted support – institutional, financial and regulatory – is needed to fully unleash the potential of cooperatives in the context of the 2030 Sustainable Development Goals.

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# SOCIAL COOPERATIVES AS A DRIVER OF THE SOCIAL ECONOMY IN THE EUROPEAN UNION

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***Abstract***

*The article explores the role of social cooperatives as a hybrid form between entrepreneurship and social responsibility in the context of the social economy of the European Union. It analyzes their legal framework, organizational structure, social function and impact on the labor market - particularly in Italy. By presenting some empirical data and historical context, it traces the transformation of the European social model and the contribution of social cooperatives to social innovation and sustainable development.*

**Keywords**: *social economy, social cooperatives, vulnerable groups, good practices in Italy*
**JEL Codes**: *P13, Q13*

## Introduction

As we enter the third decade of the 21st century, the globalization of the economy, low economic growth rates, the complexity of society and the growing need for new services pose challenges to the European development model. Demographic and economic changes in recent decades have led to significant changes in the social needs of the population: with increasing life expectancy, the need for new forms of care for the elderly has arisen; with the entry of more and more women into the labor market, childcare has become an important new area of intervention; with the attraction of more and more people from other countries and continents, the economic and social integration of migrants requires attention and new policy instruments; and with the shift to a knowledge-based economy, education systems have had to be diversified and improved.

## The concept of 'social economy' in a European context

First of all, it should be noted that the term 'social economy' first appeared in France in the 19th century, and by the beginning of the 21st century it had managed to become institutionalized in European Union policies. Over time, the evolution of European society in the context of the global economy has led to the emergence of new and more diverse needs, which in many cases require new types of responses. These responses sometimes come from the public sector or from private business, but some of the most significant innovations have originated within civil society and social economy organizations, and

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sometimes through completely new organizational forms inspired by the same principles – combining social and entrepreneurial elements, but using different institutional solutions.

This trend, driven by the new challenges facing the continent, finds fertile ground in the European tradition, since the European social model has always been characterized by the leading role of a multitude of organizations, other than both private corporations and public institutions. These are private organizations that usually pursue objectives other than profit: their main objective is not to generate financial benefits for owners or shareholders, but to provide goods and services to their members or to society as a whole. These organizations, which have been operating in Europe for almost two centuries, are regulated in many countries by specific legal forms, have their own representative structures for interaction with public authorities and contribute in various ways to the social and economic development of our continent.

The term used in the tradition of many European countries and recently also by the European Union to refer to these organizations is 'social economy' - a concept that emphasizes the special attention that these organizations pay to the social consequences of their activities, more than to profit maximization, as well as their participatory and democratic forms of governance.

**Growth and scope**

Based on available data, it is estimated that the social economy in Europe (considered as the totality of cooperatives, mutual societies, associations and foundations) has shown steady growth and employs over 14.5 million paid employees, representing around 6.5 percent of the working population in the EU-27 and around 7.4 percent in the EU-15. Interestingly, the social economy grew more significantly between 2002–2003 and 2009–2010, growing from 6 to 6.5 percent of total paid employment in Europe, and from 11 million to 14.5 million jobs.

| *Year* | *Employees employed (in millions)* | *Percentage of employment in the EU* |
|---|---|---|
| 2002-2003 | 11.0 | 6.0% |
| 2009-2010 | 14.5 | 6.5% |

According to recent data obtained from the study made for the European Economic and Social Committee on the evolution of the social economy within the EU there are 2.8 million social economy enterprises and organizations in the European Union, that employ 13.6 million people and represent 8% of the EU's GDP (https://www.socialeconomy.eu.org/the-social-economy/the-social-economy-in-the-eu/).

The social economy has only recently been recognized as a distinct set of economic entities. However, the organizations belonging to it have long been an important part of the social, economic and political history of Europe. The term 'social economy' first appeared in France in the first third of the 19th century, and its meaning has spread far beyond French

borders over the centuries, finding broad continuity throughout Europe. What social economy organizations share in common, and what distinguishes them from conventional businesses, is the main objective of their activities, which does not place profit and its distribution among the owners as the ultimate goal. In fact, the main objectives pursued by social economy organizations include both the provision of goods and services (including employment opportunities) to their members and the pursuit of public interests (activities that benefit society as a whole, such as the provision of services of general interest).

Social entrepreneurship initiatives have been created using legal forms provided by the different national legal systems, mainly non-profit, such as associations, cooperatives and foundations. In particular, social enterprises were initially created as associations in countries where the legal form of the association allows a certain freedom in selling goods and services on the free market, as is the case for example in Belgium. In countries where associations are more restricted in this respect, social enterprises have more often been created in the form of cooperatives.

### The Italian model: social cooperatives

Social cooperatives in Italy developed as a response to the need for services of public value and were institutionalized through Law 381/1991.

The analysis of social cooperatives and their characteristics reveals that these organizations are indeed a new type of institution that differs from both traditional private firms (including 'conventional' cooperatives) and non-profit organizations. Social cooperatives not only combine the social objectives of traditional non-profit organizations with the entrepreneurial characteristics of corporations and cooperative enterprises, but also have a unique ownership and membership structure. On the one hand, while owners of conventional firms have the right to both control the organization and benefit from the profits, and owners of non-profit organizations have no rights to either of these elements (Hansmann, 1996), in social cooperatives the members (the owners) have full control over the organization but not over the profits, since when distribution of part of them is allowed, the assets are usually protected.

On the other hand, it is pointed out that Italian social cooperatives often have a very specific membership structure at several different levels, involving in the management all participants in the production process: workers, volunteers, customers, as well as other private or public organizations (Thomas, 2004).

Social cooperatives can be considered a type of social enterprise and continue to be one of the most developed and successful models of social entrepreneurship. Since most of them arise as bottom-up initiatives, they represent an interesting example both for countries with well-developed social security systems and for those seeking to reform their social systems and services.

Cooperatives are in a way an exception in the Italian legal system: they are treated as fully entrepreneurial organizations, but at the same time they are recognized as having a

social purpose and purpose. Furthermore, they are limited in the distribution of profits and have a democratic management structure. In this way, they represent the legal form of enterprise that best meets the needs of emerging organizations committed to providing social services. For this reason, most of them choose the cooperative form, and in order to distinguish themselves from traditional cooperatives (which mainly serve their members), they define themselves as 'social solidarity cooperatives' (Borzaga et al., 2014).

This new type of cooperative received official legal status in Italy in 1991 with the adoption of Law 381. This law did not simply recognize a new form of cooperative, but rather created a new type of enterprise with a clearly defined purpose. According to the law, the purpose of social cooperatives is to "pursue the public interest by promoting the personal development and integration of people into society through the provision of social, social security and educational services and the performance of activities aimed at ensuring employment for disadvantaged people" (cited in Borzaga et al., 2014).

Italian law recognizes two types of social cooperatives, depending on whether they manage social, health or educational services (type A social cooperatives) or whether they carry out other activities (whether in agriculture, industry or commerce) integrating vulnerable people into the workforce (type B social cooperatives). While type A cooperatives have no requirements regarding the number of employees, type B cooperatives have a clear focus on the employment of disadvantaged people (defined by a specific definition given in the law), who must be fully remunerated and constitute at least 30% of the employees (Borzaga et al., 2014).

It should be noted that similar legislative framework related to social cooperatives appeared in the first and second decades of the 21st century in countries such as Poland, Hungary and Greece.

**Interaction with local authorities**

Commenting on the positive effects of promoting social cooperatives in Italy, one should not forget an extremely important point, namely their collaboration with local and regional authorities. For example, in 2005, almost half of public spending on social services in medium and large Italian cities was managed by private non-governmental organizations, with approximately 80 percent of contracts awarded by local authorities to social cooperatives. Only 30 percent of these contracts were the result of public tenders, while 70 percent were awarded through negotiated agreements between local authorities and social cooperatives. The direct contracting approach used highlights the public sector's trust in these organizations and their effectiveness (Borzaga et al., 2014).

**Entrepreneurship and social innovation**

Finally, social economy organizations also effectively promote entrepreneurship and business creation in several ways. First, they contribute to the development of economic activity in areas that have been neglected due to their low profitability. Second, they

introduce an entrepreneurial culture into sectors that have traditionally been considered outside the scope of entrepreneurial behavior (Spear, 2002). This is particularly true for social enterprises and social cooperatives, which apply an entrepreneurial approach to the provision of social, health and educational services (Pestoff, 1992; 1998). These organizations also unlock and foster an entrepreneurial culture among people who are more motivated by social goals than by financial rewards. It is also important to note that these new entrepreneurial initiatives often benefit groups that have difficulty accessing employment in the rest of the economy - such as women and young people.

**Conclusion**

Social cooperatives embody the transformative power of the social economy, combining entrepreneurial efficiency with social solidarity. The so-called Italian model could serve as an inspiration for other countries in their efforts to reform social systems through sustainable, innovative and inclusive mechanisms.

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# THE POTENTIAL OF COOPERATIVES IN PROMOTING INCLUSIVE EDUCATION

**Evangelia Metaxa**[1]

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***Abstract***

*The report will examine the potential of cooperatives to promote inclusive education. Cooperatives placing emphasis on community empowerment can tackle social inequalities and promote social inclusion in educational settings. The report will examine the various types of educational and social cooperatives so as to explore the ways in which cooperatives can support inclusive education. The significance of cooperatives to inclusive educational practices as well as their ability to address the needs of learners will also be addressed. In addition, the report will underline the challenges involved in integrating cooperative principles into educational settings.*

**Keywords**: *cooperatives; inclusive education; social inequalities; marginalized communities*

**JEL Codes**: *I24, I25, A13, 035*

## Introduction

Education has always played a key role in combating inequalities and it is not surprising that over the past few decades, discourse on education has started centering around the urgent need to make learning spaces more responsive to the needs of all learners, irrespective of their socio-cultural background. Educational institutions around the world strive to respond to diversity, especially in multicultural environments where multiple instances of discrimination are observed. Inclusive education has come to the forefront of these discussions as its principal aim is to ensure that every learner has access to quality education (UNESCO, 2020). Driven by the principles of equity and social justice, inclusive education attempts to identify and eliminate any barriers to learning, creating school environments where diversity is valued as an asset rather than as a challenge.

In modern western societies, the increasing presence of immigrant and refugee populations in public schools underscores the urgent need to design inclusive educational models which accommodate diversity and combat inequalities. Immigrant students often encounter barriers to their integration in local societies and experience discrimination affecting both their academic performance and psychosocial well-being. The implementation of innovative approaches and a reevaluation of how educational institutions are organized are more than ever needed (Slee, 2019). The necessity of integrating the principles of inclusive education into local curricula is pivotal should societies wish to

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provide equal educational opportunities to all their members. However, despite the widespread support that inclusive education has received, its practical application remains limited and as Ainscow (2020) observes, educational exclusion and marginalization persist.

In response to these challenges, alternative organizational models have made their appearance so as to embed the values of inclusive education in educational institutions. Cooperatives founded on the principles of solidarity and social responsibility, constitute a promising framework for inclusive education to be implemented (Zeuli & Cropp, 2004). Cooperative models render it possible for members of marginalized communities to be actively involved in the design and implementation of educational initiatives. The core principles of cooperatives are closely aligned with the primary aims of inclusive education and therefore, they constitute the perfect solution to combating educational discrimination and marginalization. However, despite their potential, the integration of cooperative models into mainstream education encounters multiple challenges. Insufficient funding, rigid bureaucratic frameworks as well as lack of awareness among educators and policymakers constitute some of the principal barriers encountered in their implementation in educational settings highlighting the need for both cultural and pedagogical shifts in how inclusion is understood and enacted.

This article aims to explore the potential of cooperatives in promoting inclusive education within environments which are characterized by cultural diversity by paying particular attention to Greek schools accommodating immigrant learners. The article initially addresses the theoretical foundations and the core principles which underlie inclusive education and cooperative models. It also examines the different types of cooperatives and the ways in which they can encourage the implementation of inclusive practices. The current landscape in Greek educational contexts is then discussed, analyzing the opportunities and the constraints which emerge when implementing cooperative approaches. The final section explores the interplay between cooperative education and social media, identifying ways that digital and community-based tools can foster socially responsive educational environments. In general, the article argues that cooperatives hold significant potential for advancing inclusive education in increasingly diverse and pluralistic societies.

## Theoretical framework: defining inclusive education and cooperative models

### *Inclusive education*

According to the Salamanca Statement (UNESCO, 1994), inclusive education constitutes a practice whose primary aim is to develop schools where everybody will feel welcome and diversity will be celebrated. In other words, schools will cater for individual needs and each student will participate equally in the educational process. Condeza & Mongas (2025, p. 2959) support that “inclusive education is a cornerstone of modern educational reform which emphasizes the need for all pupils, regardless of their abilities or disabilities, to learn together in general education classrooms”. Inclusive education is

founded on the principles of equity and its focus is to trigger important changes in the pedagogical practices, the curricula, and school cultures so as to accommodate the needs of a diverse student body (Booth & Ainscow, 2016). Moreover, inclusive education is not restricted to students who face disabilities, but applies to any student who belongs to a marginalized group such as immigrants. One of the most significant benefits to be reaped by the implementation of inclusive education is that it has a positive influence on the academic performance of all students. Furthermore, inclusive education significantly influences the social behavior of individuals since values, such as respect and solidarity, are fostered. In this way, a positive school climate is being created. A positive climate in school contexts facilitates the socialization of students and reduces the stigmatization of those who live on the margins of society. The interpersonal relationships of students are ameliorated and their self-confidence is improved since equal chances of success are granted to all students. A key principle that characterizes inclusive schools is acceptance of diversity. Diversity no longer constitutes a differentiating element, but rather is viewed as an asset that can enrich school life. Thus, respect and in general, positive stances towards diversity are developed and social equality can finally be achieved.

**Cooperative models**

Cooperatives are autonomous organizations which are formed and managed by individuals who work together to satisfy not only their economic, but also their socio-cultural needs (International Cooperative Alliance, 2022). Cooperatives date back to the 19th century and since then, they have developed into multifaceted institutions which operate across a wide range of sectors, including education. The International Cooperative Alliance (2022) outlines seven key principles which dictate cooperative activity: voluntary and open membership, democratic member control, member economic participation, autonomy and independence, education, training and information, cooperation among cooperatives, concern for community. These principles place particular emphasis on participatory governance and social responsibility and, in this way, cooperatives are differentiated from private or state institutions. Solidarity constitutes the core value that governs all cooperatives and assumes a central role in discussions concerning inclusion. In the context of immigrant integration, cooperatives have become highly promising especially in settings where mainstream educational institutions have failed to address issues of exclusion and inequality since they have been developed so as to serve as intermediaries between educational institutions and local communities. By actively engaging the immigrant population, cooperatives endorse culturally responsive education which is vital for inclusion (Putnam, 2020). Cooperative models manage to address immigrant students' needs for their democratic nature which contributes to the development of a sense of belonging and empowerment for students living on the margins. However, despite their multiple advantages presented in their implementation, cooperatives are often overlooked and are often thought to be peripheral to public education or are viewed as niche alternatives. Research, though,

suggests that cooperatives can introduce innovations which will enable the implementation of more inclusive and participatory educational practices (Davies & West-Burnham, 2020).

**Types of cooperatives**

Cooperatives take various forms depending on the goals being set and the organizational structures being adopted. When considering their potential to promote inclusive education, it is vital to acknowledge the different types of cooperatives because each one engages with education in a unique way even though they all place emphasis on equity and responsiveness to local needs. Educational cooperatives, commonly known as cooperative schools, are institutions actively involved in delivering educational services to communities. For instance, cooperatives in the educational field can offer after-school programs including language classes or specialized services for students with particular needs. They are generally owned and managed by the members of the local and school community, such as teachers, parents, and students, who collaborate in school governance and decision-making (Davies & West-Burnham, 2020). This participatory governance structure fosters inclusive education and has a significant influence on educational practices as all voices, especially those belonging to marginalized communities, are given space to be heard. Cooperative schools tend to follow pedagogies which adhere to the principles of inclusive education and their primary focus is on collaboration. The flexibility of governance that characterizes cooperative schools allows educators to adapt their teaching practices and strategies to cater for the needs of diverse learners since they are not obliged to adhere to rigid teaching practices and methods which are imposed by authorities. Personalized learning and emphasis on the individual needs of learners constitute the priority of cooperatives especially when they are operated by parents. Parent-led cooperatives are often formed in response to dissatisfaction expressed with mainstream educational institutions and include schools or learning centers which place emphasis on learner needs. In many cases, they are created to accommodate the needs of children who do not fit into traditional educational systems such as students facing racial discrimination. As parents become more active participants in the educational process of their child, a stronger connection is being built among the school and the home environment (Good2knownetwork, 2023) which both are of vital importance for the development of children's identities.

Social cooperatives constitute another type of cooperative which is especially designed to serve social objectives and often target marginalized populations. A characteristic that all social cooperatives share is that they are not seeking for financial profit but their primary purpose is to serve community members (Lipták, 2025). To be more precise, their principal purpose is to cater for the socio-economic needs of their members, to create opportunities in the field of employment for the unemployed or the socially disadvantaged members and to enhance the overall social conditions of the community (Kiss & Mihály, 2019; Zimnoch & Mazur, 2020). Thus, they can assume a cardinal role in unemployment, the reduction of poverty and in general, in the fight against exclusion (Kiss

& Rácz, 2024). Social cooperatives, like any other type of cooperative, is founded on the principles of community empowerment and democratic participation. These cooperatives can provide integrated services that include education, health, and social care. For instance, a social cooperative may run an after-school program for children originating from low-income immigrant families, offering not only language support but also meals and psychosocial counseling. The multi-disciplinary approach of social cooperatives is aligned with the principles of inclusive education, which underline the need to address apart from academic, emotional and socio-cultural barriers to learning as well (UNESCO, 2020).

**The current landscape of inclusive education in Greece**

As a result of the increasing presence of immigrant populations in Greek public schools, the issue of inclusive education has gained prominence in the country since efforts have been made to integrate immigrants in local communities. The demographic shift that has been observed in Greek educational institutions has had as a result their transformation into multicultural and multilingual learning spaces where students of diverse backgrounds are accommodated (Hachfeld et al., 2015). The migration crisis revealed the inequalities presented in the Greek educational system which is monolingual and monocultural in nature and cannot adapt with ease to diversity. Efforts have been made at both a national and European level to integrate inclusive policies in educational curricula, however, despite the fact that the necessity to implement the principles of inclusive education in practice has been recognized, barriers to the integration of immigrants in school communities still persist.

The Greek curriculum is heavily centered around national identity providing limited space for intercultural engagement and immigrant students are presented with fewer opportunities to enhance their academic performance. Immigrant students are confronted with linguistic challenges and often experience racism both within and outside the school environment and thus, they are not granted equal access to education (Siddiq et al., 2023). In addition, many schools lack the infrastructure and resources required and educators lack sufficient training to cater for the needs of immigrant students. Teachers who constitute the key pillar of education are not trained enough so as to deal with the complex nature of teaching in a classroom where diversity prevails (Panitsides & Vlachou, 2018). Teachers lack training not only in intercultural competence, but also in implementing collaborative learning and differentiated instruction which constitute vital inclusive teaching practices. In light of this, inclusive education can solely be viewed as a policy aspiration rather than a reality. What is more, the educational system in Greece addresses multiculturalism solely superficially. For example, reception classes whose purpose is to facilitate language acquisition, isolate students from the other members of the school community as they are being carried out in separate classrooms, reinforcing in this way, segregation. Immigrant students are further excluded from local societies as their families are not actively in the

educational process for the bureaucratic rigidity of public schools and the lack of platforms for collaborative participation.

Over the past few years, certain organizations have taken the initiative and have developed educational programs which can assist the integration of immigrants. Such programs are often managed by NGOs with the aid of volunteers and provide language support, cultural mediation, and psychosocial care (Essomba, 2017). In this context, cooperative models are being implemented and provide community members the chance to unite and collaborate in order to envision together inclusive programs that accommodate to the individual needs of all citizens. Some of the cooperative practices funded are managed by educators, trainers and social workers who adopt innovative and experiential, non-formal educational approaches (Roes Cooperativa, 2025) demonstrating that models founded on cooperative values and principles have the capacity to respond to the challenges that inclusive education presents. However, for such models to be widely implemented, there is urgent need for both policy recognition and institutional support to be integrated into national education policies.

In sum, while actions have been taken towards inclusive education in Greece, the integration of immigrant students continues to be a challenge. Cooperative models as they place emphasis on democratic participation and community empowerment can play a transformative role in overcoming discrimination. The flexible nature of the curricula proposed by cooperatives in conjunction with their collective governance positions them as alternative models which can eliminate exclusion and foster more equitable educational settings. Their success, however, depends on creating environments where educational innovation is supported.

**Cooperatives and educational inclusion for immigrant communities**

The increasing need to fully integrate immigrant populations in educational systems has prompted members of the school community to seek for alternative models that do not adhere to the principles of traditional and hierarchical structures. Cooperatives emphasizing participation, mutual support and responsiveness to local needs constitute a viable solution to the difficulties immigrants encounter in their integration and a response to exclusion (Zimnoch, 2018). In general, cooperatives can act as vehicles of inclusion particularly where public educational institutions have been observed to struggle to fulfill the diverse needs of students. Cooperative educational models facilitate the integration of immigrants as they endorse collective governance which signifies that even marginalized voices are allowed to participate in decision-making as far as the design of curricula and the management of educational institutions are concerned. This is perfectly aligned with one of the core principles of inclusive education which highlights the importance of assigning value to diversity and providing equal importance to the perspectives and experiences of all learners

(Ainscow, 2020). In schools which follow cooperative models, members of the school community with the aid of community members shape the educational environments. In this way, key components of integration such as community empowerment and equal participation, are fostered.

Another key characteristic of cooperatives that facilitates educational inclusion for immigrant communities is that they follow culturally responsive pedagogies. Shiholo (2024) supports that for the integration of all students into educational settings, culturally responsive teaching practices are indeed needed implying that educational policies should respect linguistic diversity and multilingual education programs be promoted. Overall, teaching methods and techniques adopted in cooperative schools are more flexible and thus, more inclusive and personalized methods than those which are usually encountered in traditional classrooms are opted. Moreover, cooperative models by respecting the socio-cultural and linguistic background of immigrants, they can actively involve immigrant parents, who are often excluded from traditional educational systems because of their lack of familiarity with the educational system and their limited language proficiency. Additionally, cooperatives constitute incubators for innovation particularly in areas where inclusive education is not applied to a great extent. The operational autonomy of cooperatives allows educators to experiment and implement innovative methodologies which otherwise, they would not be able to apply. In addition, initiatives which provide supplementary instruction to immigrant students who encounter learning difficulties make use of participatory curriculum design. These initiatives most of the times operate in informal spaces, such as community centers or even on online platforms. Thus, the adaptability of cooperative models in comparison with conventional learning environments becomes obvious.

Cooperatives with their emphasis on inclusive governance, cultural responsiveness and community engagement constitute an alternative to traditional frameworks adopted to integrate immigrants. However, despite their ability to achieve immigrant integration, they are still on the periphery of the Greek educational context since most of them do not acquire official recognition from the state or encounter significant challenges related to funding. Thus, systemic change in various fields of modern life and specifically in the field of education becomes difficult.

**Opportunities and limitations of cooperative models in practice**

Cooperative models have the potential to transform educational institutions as they can instill values such as equity and solidarity to the members of the community. Biolchi et al. (2025, p. 6) state that "school cooperatives act as catalysts for educational transformation, promoting cooperativism for positive changes in communities". Their structure which is founded on collective decision-making renders them particularly relevant and at the same time, valuable for diverse educational contexts where conventional educational systems fail to adapt and fulfil the needs of marginalized learners. One of the most important opportunities which are provided by cooperatives is their flexibility and responsiveness to

local needs. In contrast with more conventional schools which are governed by rigid hierarchies, cooperatives offer the space to stakeholders, including parents, teachers, students as well as members of the local community, to collaborate so as to design tailor-maded curricula and decide on the teaching practices to be employed that will accommodate to their socio-cultural realities. This participatory approach adopted is closely aligned with the principles of inclusive education which places emphasis on learner-centered instruction.

In the context of immigrant education, cooperatives have the capacity to bridge the gaps between schools and communities. For example, cooperatives which are run in urban areas across Europe have offered to immigrants services which state schools do not provide such as language support, cultural mediation and counseling. These cooperatives foster culturally responsive teaching which is pivotal should immigrant students are to be integrated in contexts where mainstream educational institutions neglect diversity. Multilingual approaches which incorporate elements of the heritage of all students are adopted and, in this way, they exhibit an appreciation of difference (Ferguson-Patrick & Jolliffe, 2018). Cooperatives further provide ample space for teacher innovation since the teaching staff is highly encouraged to implement several inclusive pedagogies such as collaborative learning and differentiated instruction that will support students belonging to marginalized groups. What is more, the emphasis being placed on collective responsibility creates a sense of belonging not only for students but also for staff and as a result, a more positive school climate exists and instances of exclusion are eliminated. Cooperatives can also employ digital tools and social media so as to sustain inclusive dialogue. Digital platforms provide the opportunity to cooperatives to mobilize communities and broaden access to their services. Virtual learning spaces specifically designed to meet the needs of all learners can easily be created with the aid of digital platforms. Moreover, the voices of the members of marginalized communities via digital platforms can more easily make their voices heard.

Despite their potential, there are several limitations in the implementation of educational cooperative models. A primary limitation often observed is institutional resistance to alternative governance structures. It is a fact that many public educational systems are not willing or are reluctant to recognize initiatives led by communities and in this way, authority cannot be decentralized. This can especially be observed in environments, like Greece, where bureaucracy prevails. Cooperative models remain peripheral to formal education policies in many countries including Greece. Even though initiatives have been proposed in this field, they are not integrated into the national educational system and thus, they lack any formal recognition or institutional support. There are no clear policies that legitimize cooperative schools as equivalent or complementary to public educational institutions nor are there any funding programs available that allow them to sustain long-term programming. Without legal recognition, cooperatives remain reliant on volunteer and community support or grants which are often short-term. As a result of their lack of legal

recognition, it becomes difficult to have a significant effect on the inclusion of marginalized members of society.

Another impeding factor in the effective implementation of cooperatives is that both educators and policymakers lack sufficient training as well as awareness with regard to the principles that drive educational cooperative models. Lack of adequate professional development implies that superficial rather than meaningful inclusion of all members of the community is to be expected. The absence of cooperative education from teacher training programs perpetuates the problems that cooperatives face in their function. What is more, it is very often the case to equate cooperatives with informal education, which can be seen as peripheral or even substandard if compared to formal educational institutions. This perception undermines their legitimacy and may deter members of marginalized communities from engaging with them. Additionally, their sustainability is fragile and rarely ensured (Váradi, 2016; Csoba & Sipos, 2020 as cited in Lipták, 2025) as they depend predominantly on voluntary engagement and they lack consistent funding. In other words, especially in communities that are under-resourced or marginalized this problem seems to be even more exacerbated. Cooperatives' function depends heavily on local fundraising or support from NGOs. While this fosters community ownership, it also creates multiple challenges in their effective management. For instance, they operate with minimal resources and lack access to important infrastructure such as school buildings, digital equipment, or qualified teaching staff. These limitations can restrict both the range and the quality of services that are being offered.

It is also worth mentioning that cooperatives themselves can often become unintentionally exclusive spaces. While they strive for inclusivity, they may reproduce exclusion when participation necessitates time and language proficiency or digital literacy. For instance, in the case of parent-led cooperatives, oftentimes they are accessible predominantly to middle-class or highly educated families leaving out those from lower socio-economic backgrounds or newly arrived immigrants who face barriers to participation in the host society. In this way, inequalities instead of being eliminated, are being reproduced. Without deliberate strategies to facilitate access and equal participation, cooperative models risk becoming exclusive.

**The interplay between cooperatives and digital platforms in fostering inclusive education**

The digitalization of modern life and the increasing use of new technological developments in the daily lives of individuals have transformed the way educational institutions engage with communities and foster inclusion. More particularly, the emergence of social media platforms has reshaped human communication and relationships. In general, social media constitute a tool with immense possibilities to foster community's engagement, communication and activism; elements which are strongly aligned with the participatory nature of cooperative models. According to Ernst et al. (2019), social media platforms

constitute a participatory means and as a result, users can more easily develop a sense of belonging. In addition, social media have the potential to expand the reach of inclusive practices that educational cooperatives implement and enhance community involvement most notably in multicultural environments where the voices of members of marginalized communities are silenced.

As cooperative models place emphasis on communication and collaborative decision-making, social media provide them with the necessary tools to engage their members more actively and easily in real-time communication. Social media platforms are being utilized by cooperatives to organize meetings, distribute material and ensure that all members of the community, including immigrant families, remain informed and empowered. In addition, these platforms allow rapid knowledge sharing and community-building across geographic, cultural and linguistic boundaries. What is more, as Nasuto & Rowe (2024) argue, social media promote dialogue and thus, they can mobilize solidarity among users (Michailidou & Trenz, 2019). For immigrant families who may encounter linguistic and cultural barriers in mainstream educational environments and do not have access to institutional informational channels, social media serve as a bridge and provides them with a link to educational opportunities and support services. In cooperative learning spaces, social media tools can further help create a bridge between formal and informal education by extending learning into homes and communities, encouraging in this way, more continuous and inclusive engagement. Cooperatives with the aid of digital platforms and their applications can include all members of the school community in school governance and educational planning in ways that traditional means do not allow. For instance, messages can easily be translated utilizing assistive technologies and become accessible to those encountering linguistic difficulties (Schulz et al., 2025) and their participation in community discussion groups is thus facilitated. Moreover, content delivered can be more easily culturally relevant.

Social media platforms further provide members of marginalized communities a space both to share their experiences and express their needs. Ekman (2019) supports that social media constitute a place where opinions are freely expressed. Platforms such as TikTok and Instagram allow students to engage in creative expression while at the same time, contribute to the social and cultural life of the learning community. In this way, exclusionary narratives that seem to be dominant in mainstream educational models are challenged. By having the ability to co-create content, it becomes feasible for them to be more actively involved in the educational process and create culturally responsive curricula. Digital storytelling constitutes an innovative practice which is increasingly adopted to promote inclusion and foster intercultural understanding (Manganello & Baldacci, 2024). By encouraging students to share their narratives through multimedia formats, they foster inclusion as well as visibility for marginalized students. Moreover, in educational contexts where members of minority groups are misrepresented or stereotyped in curricula and in general, in the local society, cooperative models with the aid of social media platforms can endorse more authentic representations of identity and community resulting in self-empowerment and

mutual understanding among students of diverse backgrounds. In other words, these initiatives exemplify how social media can be a pedagogical as well as a social bridge between diverse learners.

Digital platforms also facilitate collaboration between cooperative initiatives being taken across the world. For instance, teaching personnel in Greece can connect with their counterparts in other countries in order to exchange best practices. Such digital networks enhance professional development and also expand the knowledge base of inclusive pedagogies. In this way, decisions are made on the basis of real-world experiences. This collaboration among cooperatives is particularly significant when addressing the needs of cultural minorities as cooperatives can have access to culturally relevant models designed from other contexts which are more acquainted with the cultural norms of minorities and have already integrated them into inclusive teaching practices. Thus, homogeneity which often characterizes national curricula can be avoided.

The use of social media platforms from cooperatives is not however without any risks involved. Digital exclusion can constitute a barrier for families of a low-income background who have limited internet access, lack digital literacy and do not have device availability (OECD, 2001). If the incorporation of social media platforms in inclusive practices is not carefully planned, inequalities can be reinforced instead of being alleviated. It is very often the case that social media propagate misinformation and replicate social biases. This signifies that cooperatives should ensure that critical digital pedagogies are developed so that all members of the community navigate the virtual world safely and most importantly, reflectively. Moreover, issues of online safety and privacy arise when participants in inclusive practices are minors. Thus, for their use, it is imperative that ethical standards be respected and their usage does not expose students to risks such as cyberbullying or surveillance. What is more, over-reliance on digital tools might be another risk and direct human interaction may be hindered. Social inclusion should be based on face-to-face communication and endorse real relationships. Social media should solely complement communication because otherwise, the interpersonal nature of cooperative education is jeopardized.

Overall, the utilization of social media by cooperatives presents multiple opportunities to foster more inclusive, participatory and at the same time, culturally responsive learning environments. When their use is applied strategically, social media, as they strengthen human communication, amplify marginalized voices and connect diverse communities. For educational change to be triggered, digital participation should be equitable so that all members are actively involved in all learning spaces.

**Policy recommendations**

To meet the challenges involved in the implementation of cooperative models in the field of education several steps need to be taken. What is required most of all in order to enhance the role of cooperatives in promoting inclusive education is institutional

recognition. Legal frameworks which formally acknowledge cooperative educational initiatives are deemed pivotal. This includes enabling cooperative schools and educational collectives to operate with legitimacy within the broader conventional educational system. It further involves a multi-level collaboration between public schools and community-led cooperatives and partnerships with municipalities and European social inclusion programs. Hybrid models which incorporate elements from both formal schooling and community-led initiatives offer a more flexible approach to inclusive education. Another benefit is that in this way, institutional and community resources are bridged and thus, more responsive educational environments can be created. Support is also to be expressed through funding and infrastructure development. Cooperatives working with marginalized populations should be granted access to sustainable financial resources so as to provide services of a higher quality. As far as the funding of cooperatives is concerned funding agencies as well as NGOs and volunteers should opt for long-term projects so as to enhance the benefits that are to be reaped by the integration of cooperative models in education. However, it is of equal importance for cooperatives to critically reflect on their own practices so as to ensure that not only is inclusion a goal they have set but, via their practices, it can become a reality.

Another challenge that should be addressed is lack of teacher training. Teacher training programs should be designed in such a way that cooperative and community-based pedagogies are integrated. Moreover, these programs should place emphasis on democratic governance and participatory learning. In this way, prospective educators will be adequately prepared to implement inclusive practices both in the classrooms and their curricula. Moreover, training in the use of digital platforms is key as these platforms constitute powerful tools for expanding access and facilitating participation. Social media facilitate intercultural dialogue and extend learning opportunities. For digital equity to be achieved and in order to ensure that all members of the community are granted access to novel technologies and receive media literacy training, educators themselves should first be familiar with technological devices and their capacities in fostering inclusive education.

**Conclusion**

The potential of cooperative models to foster inclusive education especially in multicultural settings remains a pressing issue. Based on the principles of democratic participation, community engagement and social equity, cooperatives offer promising alternatives to conventional educational models which fail to address exclusion. Cooperative models present flexible networks which can accommodate to the needs of diverse learners. Priority is being placed on participatory governance and responsiveness to socio-cultural contexts. By involving all members of the community in decision-making, cooperatives can cultivate more inclusive and equitable educational environments. What is more, by integrating digital platforms into cooperative practices, additional avenues for inclusive education are fostered as intercultural communication becomes possible, underrepresented voices can be heard and the community outreach of cooperatives is extended.

However, despite the adoption of inclusive practices, many members of the community experience marginalization. Insufficient teacher training in inclusive education, rigid curricula and lack of infrastructure seem to contribute to the persistence of educational inequalities. There is urgent need for educational policies that recognize cooperative models. Alternative forms of school governance need to be employed and collaboration between public institutions and community-based initiatives is to be endorsed. Additionally, ensuring digital access and literacy among marginalized members of community is vital to making cooperatives effective. Ultimately, inclusive education should be viewed as a broader transformation of educational values and cooperatives are particularly suitable to lead this transformation. In contexts where diversity prevails, they offer educational opportunities for all learners and while cooperatives do not constitute a panacea for inequality in education, they offer a unique opportunity to reevaluate how the educational process should be experienced particularly for marginalized groups. By fostering collaboration, diversity and community engagement, cooperatives can contribute meaningfully to the realization of inclusive education.

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# OPPORTUNITIES FOR STRENGTHENING THE COOPERATION BETWEEN REGIONAL POLICE STRUCTURES AND LABOUR-PRODUCTION COOPERATIVES

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***Abstract***

*The aim of study is to analyze some aspects of the cooperation between regional police structures and labour-production cooperatives. The concept of building effective civil–police relations presupposes police activity aimed at developing sustainable partnerships with labour-production cooperatives and their regional structures, including the National Union of LPCs. This philosophy rests on the belief that police officers and citizens can together create a new model of cooperation to address modern social challenges.*

***Keywords****: regional police structures, labour-production cooperatives; civil–police relations*

**JEL Codes**: *P13, Q13, H7*

## Introduction

The profound political, economic, social, and spiritual changes that have taken place in Bulgarian society since 1989 have significantly influenced the transformation of civil–police relations in the Republic of Bulgaria.

The democratic concept of the state, understood as a system of public institutions, presupposes its primary role in guaranteeing security and protecting citizens' individual rights, thereby contributing to stronger relations between state authorities, local self-government, and the organizations of civil society. By its nature, the police is an institution of public authority whose activity is carried out in accordance with the Constitution and international standards, with the primary mission of enabling citizens to exercise their constitutional rights and freedoms.

The shift in focus from "state interests" toward issues such as human rights, the integration of marginalized groups, abuse of power, and the changing macro-framework of criminality highlights the need for the police to transform both its approach and its methods of work (Ivanov, 2002).

Bulgaria has already accumulated considerable experience in introducing structures of civil society and practicing democratic forms of governance and participation in the field

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of police work. The most significant attempt to reform the existing police system was the introduction of the "Police Close to Society" (Strategy "Police Close to Society", 2002). model. This initiative led to the adoption of related documents and pilot applications in some police departments across the country, yet it failed to achieve consistent and comprehensive implementation in practice.

Police reform remains one of the most necessary, yet complex and sensitive steps in democratizing the security sector. The evolution of police institutions toward openness to the community and the development of cooperative formats with citizens is a global phenomenon (Georgiev, 2018).

**Theoretical Foundations of Civil Society**

A comprehensive conceptualization of civil society first appeared in the works of John Locke and Adam Smith, while key aspects of its essence were further explored by Hobbes, Montesquieu, Aristotle, Hegel, Marx, and modern authors of the twenty-first century. They regard civil society as a phenomenon emerging at a specific stage in the evolution of humankind.

Drawing on the intellectual heritage of French, Anglo-Saxon, and German socio-political thought, Hegel concluded that civil society represents a distinct stage in the dialectical progression from family to state — part of the long and complex historical transformation from the Middle Ages to modernity. According to Hegel, the social life of civil society differs fundamentally from the ethical world of the family and the public life of the state. Unlike the family, the various components of civil society are diverse, unstable, and prone to conflict.

As societies evolve, individuals increasingly gain opportunities to protect and realize their private interests without infringing upon the rights of others. By the twentieth century, the essential conditions for a genuine civil society had emerged — relationships among free and equal individuals operating within a market economy and a democratic legal order. Unlike state institutions, civil society is characterized not by vertical (hierarchical) but by horizontal relationships — competition and solidarity among legally free and equal partners.

The term civil society is used in both broad and narrow senses. In its broad sense, it encompasses all areas of social life not directly governed by the state — those the state does not "reach." As such, it develops as an autonomous sphere independent from direct state control. Civil society in this broad sense can coexist not only with democracy but also with authoritarianism; only totalitarian regimes seek to absorb it entirely.

In the narrow sense, civil society is inseparable from the rule of law — neither can exist without the other. It represents a web of relationships among free and equal individuals, unmediated by the state, within a framework of market democracy and legal order. It is the domain of private interests and individual autonomy, a product of the bourgeois era that evolved spontaneously "from below" through the emancipation of individuals — their

transformation from subjects into free citizens and property holders endowed with dignity and responsibility.

Historically, the formation of civil society marks humanity's arduous ascent from oppression, political dictatorship, and state totalitarianism toward real democracy and individual freedom.

Its earliest interpretations emphasized the opposition between the public and private spheres: if the state embodies the first, the second finds its realization within autonomous civil society — the private domain of human life.

Civil societies do not arise overnight, nor within the brief period of drafting democratic constitutions or introducing market reforms. They are constantly at risk, as all state institutions possess an inherent tendency toward totality. The state always seeks more power — despite the repeated assertion that it merely represents the people who constitute it (Dahrendorf, 2000).

**Modern Civil Society and Labour-Production Cooperatives**

Contemporary political theory expands the notion of civil society by integrating it with democracy grounded in political pluralism, consensus, and partnership among competing social groups. According to the widely accepted theory of pluralism, the central task of modern democratic societies is to achieve civic consensus through the coordination of diverse interests, mitigation of conflicts, and pursuit of social harmony.

Civil organizations are not adversaries of the state. They defend and pursue goals that the state cannot accomplish — for example, in culture, science, education, and healthcare. Their strength lies in direct civic action and resistance, rather than in formal political representation typical of parties and parliaments.

Stable social functioning presupposes a certain degree of depoliticization in key sectors of civil society and a readiness among organizations not only to oppose but also to engage in constructive dialogue with the state. Modern civil society is composed of voluntary associations — families, cooperatives, professional and creative unions, sports, ethnic, confessional, and other public organizations.

In developed countries, cooperatives constitute an essential part of civil society.

In Bulgaria, labour-production cooperatives (LPCs) continue to play a significant role in the country's socio-economic life. They provide employment for their members, ensuring the constitutional right to work, while also enabling cooperative members to participate directly in decision-making processes.

The concept of building effective civil–police relations presupposes police activity aimed at developing sustainable partnerships with labour-production cooperatives and their regional structures, including the National Union of LPCs. This philosophy rests on the belief that police officers and citizens can together create a new model of cooperation to address modern social challenges.

Community-oriented policing encourages officers to seek innovative ways to promote collaboration between citizens and the police. Information shared by the community is the "lifeblood" of police work; thus, the acquisition of such information — which requires a minimum level of public trust — remains a major challenge.

Police officers must be trained to perform functions that may appear unconventional within traditional policing. Interaction with organizations such as LPCs exemplifies the need for specialized police training. In turn, LPCs are expected to expand their engagement by creating, coordinating, and maintaining channels of communication with police institutions, especially at the regional level (Organizational-Legal and Psychological Problems in the Activity of the District Inspector, 2005).

The police must become more open, capable of reflecting societal expectations in its activities while retaining its professional ability to respond effectively to serious crime. A civil-society-oriented police strategy should combine policing with community practices — achievable only through organizational reform, staff reorientation, and a redefinition of institutional values.

**Conclusions and Recommendations**

Efforts to strengthen cooperation between citizens and the police — and to ensure citizens' rights and freedoms — must be supported by secure police systems resistant to criminal misuse of such partnerships.

To implement the concept of effective civil–police relations and community-oriented policing, it is necessary to:

• Establish general and specific criteria for evaluating police performance, tailored to local conditions (including relevance, effectiveness, impact, and sustainability).

• Conduct public opinion surveys, interviews, and focus groups assessing police effectiveness and safety levels in local communities.

• Maintain registries of joint actions between the police and non-governmental organizations, particularly labour-production cooperatives.

• Perform detailed analyses of official and informal public forums engaged in evaluating civil–police relations.

The successful implementation of these measures also depends on the personal qualities of police officers — their education, legal awareness, professional competence, and ability to engage with the public, especially in matters of prevention. Prevention requires a proactive rather than reactive police approach to social issues. When effectively applied, prevention reduces community victimization and opens new operational opportunities. Local dialogues on prevention should culminate in formal agreements and lasting partnerships.

Local security councils can play an especially important role in facilitating cooperation between regional police structures and labour-production cooperatives. The most effective means of improving this cooperation is through maintaining up-to-date

information on risks related to property, production facilities, and the personal security of cooperative members. In this regard, it is advisable to develop a research map that assesses the socio-criminal environment of each community according to predefined criteria.

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# DIRECT VS. INDIRECT FINANCE AND SOCIAL INCLUSION: EVIDENCE FROM GREEK COOPERATIVES

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***Abstract***

*This paper investigates how direct and indirect finance shape social inclusion in Greece, focusing on cooperatives as inclusive financial and social institutions. Direct finance via capital markets reduces intermediation costs but favours larger issuers with disclosure capacity; indirect finance through banks screens borrowers and often rations credit to small producers and vulnerable groups. Drawing on a qualitative review and case evidence from agricultural, social, and renewable energy cooperatives, we show that member-based financing, programme funds, and emerging digital tools form hybrid models that mitigate credit constraints, expand participation, and anchor investment locally. However, thin capitalization, fragmented regulation, and dependence on subsidies limit scale and sustainability. Policy proposals include enabling cooperative banking and credit unions, guarantee schemes, and digital cooperative crowdfunding linked to the green transition. The Greek experience offers actionable insights for bank-dominated systems seeking inclusive and resilient development.*

**Keywords**: direct finance, indirect finance, financial inclusion, cooperatives
**JEL codes**: *P13, Q13, G00*

## Introduction

Financial systems affect not only investment and productivity but also who can access opportunities and on what terms. The classic distinction between direct finance where firms and communities raise funds directly in securities markets and indirect finance where banks and other intermediaries allocate deposits—implies different inclusion profiles. In bank-dominated systems, relationship lending can reduce information frictions, yet deleveraging cycles, collateral norms, and regulatory risk weights frequently curtail outreach to smallholders, micro-enterprises, and social ventures. In Greece, a decade of crisis amplified these constraints, while capital markets remained a channel primarily for larger corporates. Against this backdrop, cooperatives, embedded in long traditions of mutualism, offer democratic governance, local accountability, and the capacity to pool member resources for shared investment.

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This paper examines how these financing modes intersect with social inclusion, with a focus on evidence from Greek cooperatives.

We ask three questions:

i. How do direct and indirect finance shape access to credit and investment for marginalized groups?

ii. Through what mechanisms do cooperatives mobilize resources and govern investment to broaden participation?

iii. Which policies can scale inclusive outcomes in Greece without diluting cooperative identity? We contribute by integrating financial-structure theory with case-based insights on agricultural, social, and renewable-energy cooperatives, and by drawing comparative lessons from Italy, Spain, and Germany, where cooperative finance ecosystems are more developed. The analysis speaks to scholars and policymakers interested in inclusive growth, the social and solidarity economy, and the green transition (Clean Air Task Force, 2024; Soudias, 2024; OECD, 2025).

**Theoretical Background**

Direct finance allows issuers to tap investors via equity and bond markets. Advantages include price discovery, liquidity, and the absence of intermediation margins. Yet market access typically requires scale, credible disclosure, and investor relations capacity. Legal-institutional factors shareholder protection, contract enforcement, and disclosure standards shape the breadth and depth of market-based finance, as shown by the law-and-finance literature. Conversely, indirect finance relies on banks' screening and monitoring advantages. Relationship lending can alleviate information asymmetries, smooth cash-flow volatility, and support SMEs. However, under imperfect information, credit rationing arises, and lenders may prefer collateralized borrowers, systematically excluding those with limited assets or irregular income.

Social inclusion entails equitable access to markets, services, and decision-making. Financial inclusion effective use of payments, savings, credit, and insurance constitutes a core dimension. In practice, both market- and bank-based channels tend to underserve dispersed, low income, or informally organized communities. Cooperatives, situated within the social and solidarity economy, aggregate member capital, share risks, and embed democratic control ("one member, one vote"), aligning economic and social objectives. Their ownership and governance reduce principal agent conflicts and cultivate the trust required to pool resources within communities, thereby internalizing positive externalities that private investors may neglect (Soudias, 2024; OECD, 2025; World Bank, 2022).

Comparative experiences illustrate that the composition of financial systems matters for inclusion. In Italy and Spain, cooperative banks and credit unions provide dense local intermediation networks that complement market finance, while second tier cooperative federations supply shared services and guarantee schemes. In Germany, the Volksbanken-Raiffeisen sector exemplifies how cooperative banking can achieve scale

economies without sacrificing local anchoring. By contrast, Greece's financial landscape is more concentrated and market access is narrower, limiting both direct issuance by small entities and inclusive intermediation at the local level. This context elevates the role of non-bank cooperative finance, programme funds, and EU instruments in bridging gaps.

**Methodology**

We adopt a qualitative approach combining a structured review of peer-reviewed literature and institutional reports with case evidence from Greek agricultural, social, and renewable-energy cooperatives. Sources include international studies on financial structure and inclusion, Greek policy and legal documents on cooperatives, and European programme materials. We map financing instruments, governance practices, and documented outcomes (participation, employment, access to services). Rather than estimating causal effects econometrically, we aim to identify mechanisms that plausibly reduce credit constraints and to distill policy-relevant insights for bank-dominated systems (Clean Air Task Force, 2024).

**Findings: Evidence from Greek Cooperatives**

Greek cooperatives operate across agriculture, social services, and energy, typically combining member contributions with programme finance and, selectively, bank credit. Their hybrid financing reduces reliance on collateralized lending and aligns investment with local priorities. We summarize sectoral patterns and challenges.

Agricultural cooperatives especially in olive oil, wine, and dairy pool working capital for inputs, processing, and marketing. Member shares, retained surpluses, and EU rural-development funds finance storage, quality upgrades, and branding. Collective bargaining improves prices and export access. Importantly, the cooperative form internalizes scale economies in logistics and certification that individual smallholders could not capture. Where relationship lending is strong, bank credit supplements cooperative capital; where it is weak, cooperatives stabilize cash flows by synchronizing payment schedules with harvest cycles. Inclusion impacts include sustained smallholder participation, value added capture locally, and pathways for youth engagement in agri-food value chains.

Social cooperatives (KOINSEP) emerged to address employment gaps and service provision in care, culture, and circular-economy niches. Financing relies on modest member capital, service contracts with municipalities, and European Social Fund instruments. Although bank lending remains limited, KOINSEP generate inclusion by integrating vulnerable groups into formal work, co-producing affordable services, and building community capabilities. Governance practices transparent member meetings, participatory budgeting reinforce trust and accountability, essential for mobilizing local savings (Soudias, 2024; OECD, 2025; World Bank, 2022).

Energy cooperatives mobilize citizen savings for rooftop solar and community renewables under net metering and feed-in frameworks. By pre committing member capital and leveraging programme guarantees, they lower external finance needs while spreading

ownership of green infrastructure. The approach links environmental goals to community wealth-building and reduces energy poverty through preferential tariffs or dividend policies set by members (Clean Air Task Force, 2024; Electra Energy Cooperative & Heinrich Böll Stiftung, 2023; World Bank, 2022).

Persistent constraints include thin capitalization, fragmented legal frameworks, administrative burdens, and reliance on subsidies. Limited second-tier federations and scarce mutual-guarantee mechanisms restrict bargaining power and access to reasonably priced credit. Digital skills and governance capacity vary widely, affecting the ability to deploy crowdfunding or data driven management systems.

**Policy Design Considerations for Inclusive Cooperative Finance**

Designing inclusive cooperative finance requires translating high level principles into specific institutional arrangements. First, proportional regulation should differentiate member owned entities from investor-owned firms, aligning capital and governance requirements with cooperative risk profiles. Second, mutual-guarantee societies can pool default risk across cooperatives, reducing collateral requirements and loan pricing. Third, a public–private fund of funds could match member equity for eligible projects, crowding-in bank co-investment on a *pari passu* basis while preserving member control. Fourth, fiscal incentives such as deductibility for member contributions or reduced taxes on retained surpluses used for community investments can accelerate capitalization. Fifth, standardized impact metrics (participation rates, jobs for vulnerable groups, energy-poverty reduction) help align finance with inclusion outcomes and facilitate blended-finance structures. Finally, embedding cooperative projects in municipal climate action plans and social procurement frameworks stabilizes revenues and enhances bankability.

Implementation sequencing matters. Early wins can come from regulatory simplification and pilot guarantee windows in sectors with visible cash flows (agri food processing, rooftop solar for public buildings, community care services). Parallel investments in cooperative education board training, financial literacy, and digital tools strengthen governance and reduce execution risk. Over time, second-tier federations can assume shared services functions (audit, legal support, tendering, data analytics), lowering unit costs and enabling replication. Diaspora-engagement strategies, including community bonds, may broaden the investor base while preserving local control (Clean Air Task Force, 2024).

**Comparative Lessons from Italy, Spain, and Germany**

Italy's cooperative ecosystem combines cooperative banks (BCC/CR), mutual-guarantee institutions (Confidi), and strong sectoral federations. This architecture distributes capabilities across tiers and allows small entities to access credit on reasonable terms. Spain's cajas and cooperative banks, together with regional development tools, historically supported SMEs and social economy entities, while the Mondragón federation

illustrates the power of shared R&D, vocational education, and internal capital markets. Germany's Volksbanken-Raiffeisen network demonstrates how local banks can maintain relationship lending at scale through common back-office platforms and cooperative auditing. For Greece, the key insight is that cooperative finance thrives when local presence is complemented by federated infrastructure that professionalizes risk management without eroding community anchoring.

Transposition requires tailoring: Greece's smaller market size and legal specificities call for lightweight, modular institutions.

A realistic pathway could combine:

(i) a lean federation for training and shared services;

(ii) one or two sector-focused guarantee facilities;

(iii) partnerships with ethical-finance intermediaries;

(iv) an innovation sandbox for community crowdfunding with clear disclosure templates and escrow protections. Such an ecosystem can plug gaps left by conventional finance while avoiding mission drift.

**Measurement, Data, and Evaluation**

Credible measurement is essential for attracting finance and policy support. Cooperatives should track standardized indicators: member growth and participation, diversity metrics, jobs created for vulnerable groups, turnover and margins, leverage and liquidity, punctuality of payments to members, and community benefits such as lower energy bills or expanded services. For energy projects, energy-poverty metrics and emissions reductions should be reported. Digital dashboards can automate reporting and support continuous improvement. Public programmes can require and co-finance the development of open reporting templates and audit protocols to reduce administrative burden while improving comparability across projects (World Bank, 2022).

**Limitations and Directions for Future Research**

This study is qualitative and synthesizes existing literature and policy documents; it does not estimate causal effects. Future research could assemble a panel dataset of Greek cooperatives with financing structures, governance features, and inclusion outcomes to test hypotheses on the effects of guarantees, federation services, and digital crowdfunding. Comparative quasi-experimental designs leveraging policy discontinuities or staggered programme roll outs could strengthen identification. Micro-level fieldwork on member motivations, trust dynamics, and governance quality would complement quantitative analysis and inform capability-building interventions. Finally, the interaction between cooperative finance and fintech warrants study, including the design of community-compatible digital assets and compliant micro-investment vehicles.

## Discussion

Risk management and consumer-protection safeguards should accompany any expansion of community finance. Standardized disclosures, escrow arrangements for crowdfunding, tiered investment limits for retail participants, and proportionate supervision can mitigate mis-selling and concentration risks. Likewise, governance audits and fit-and-proper criteria for board members help sustain trust as cooperatives scale. These safeguards do not contradict cooperative autonomy; rather, they codify good practice and reassure external financiers.

The Greek evidence positions cooperatives as bridging institutions between market and bank finance. They convert social capital into investable capital, reducing transaction costs via collective action while internalizing social objectives. International comparisons suggest that sustained inclusion requires an ecosystem: cooperative banks and credit unions providing local intermediation; second-tier federations offering shared services, audit, and education; and public guarantee schemes crowding in private finance. The European Green Deal and cohesion policies create windows to align cooperative finance with decarbonization and regional development. Digital infrastructure further expands reach: cooperative crowdfunding platforms lower investment tickets, enable transparent project tracking, and can attract diaspora savings. Yet digitization also raises governance and consumer-protection demands clear risk disclosures, fit-for-purpose supervision for community offerings, and capacity-building for boards (Clean Air Task Force, 2024; World Bank, 2022).

A pragmatic roadmap for Greece would couple regulatory simplification with a pilot network of mutual-guarantee societies serving cooperatives and social enterprises; a sandbox for community crowdfunding; and incentives for cooperative-bank partnerships to extend relationship lending where conventional metrics undervalue local knowledge. Integrating cooperative finance into municipal climate and social procurement can stabilize revenue streams and unlock credit (Soudias, 2024; OECD, 2025).

## Conclusion and Recommendations

Operationalizing this agenda will require coordination across ministries (finance, energy, rural development), local authorities, cooperative federations, and ethical-finance intermediaries. A time-bound roadmap pilot, evaluate, scale can align incentives and contain risks. Embedding monitoring from the start ensures learning-by-doing and avoids one-off projects that fail to institutionalize capabilities.

In bank-dominated systems, conventional intermediation can entrench exclusion where collateral and track records are scarce, while market access remains out of reach for most community ventures. Greek cooperatives demonstrate viable, democratic pathways to mobilize local savings, align investment with community priorities, and deliver inclusive and sustainable outcomes.

To scale impact without eroding identity, policy should:

1. enable cooperative banking and credit unions, with proportionate supervision;

2. streamline cooperative law and reduce administrative frictions;

3. establish mutual-guarantee funds and microcredit windows tailored to cooperative cash-flow profiles;

4. support digital cooperative crowdfunding with investor-protection standards;

5. embed cooperative finance within green-transition and social-policy programmes.

Together these measures can widen participation, strengthen resilience, and anchor value creation locally (World Bank, 2022).

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# EVALUATION OF THE TAX ADVANTAGES FOR COOPERATIVES IN TÜRKİYE IN TERMS OF SUSTAINABILITY

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***Abstract***

*Cooperatives are democratic structures formed voluntarily to satisfy the economic, social and cultural needs of their members. They play an important role in empowering small producer and consumer groups. In Türkiye, cooperatives have a different tax structure than commercial enterprises. There are some tax benefits and exemptions in the Turkish tax system that have an impact on the sustainability of cooperatives and their activities. In this study, cooperatives will be classified in terms of their fields of activity and types, and their tax advantages in terms of economic, social and environmental sustainability will be evaluated and the effectiveness of the current tax policies will be discussed. This discussion will not only cover the practice in Türkiye, but will also take into consideration significant international examples.*

**Keywords**: Tax Advantages; Cooperatives; Sustainability
**JEL Codes**: H2, H25, Q0

## Introduction

Cooperatives have their own unique rules and procedures, unlike capital companies whose primary goal is to maximize profits. They generally have a dynamic structure with variable membership and capital. In the initial stage, they aim to improve the economic conditions of their members and meet their needs while protecting their interests. Therefore, the main focus is on increasing the cooperation volume between the cooperative and its members. In this regard, the general activities of cooperatives, which are an inward-looking form of cooperation, are to increase trade among members

The organizations established by people living together in society to meet their needs through cooperation and preserve their common interests continue to operate as economic entities under constitutional protection with the establishment of the rule of law. In Türkiye, cooperatives established to provide for the needs of their members at the minimum costs possible through mutual aid and solidarity have legal personality and, in this context, are obliged to fulfill various tax obligations to the state, as other legal entities do. In this context, cooperatives enable their members to collectively realize the activities that they cannot achieve individually, thereby contributing to social development.

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In this context, the legal basis for cooperatives in Türkiye is the Cooperatives Law No. 1163. According to this law, cooperatives are considered to be partnerships with variable membership and variable capital, established by natural and legal persons who have acquired legal personality and aim to provide and protect the specific economic interests of their members through mutual aid, solidarity, and guarantee, with their labor and financial contributions. The International Cooperative Alliance defines cooperatives as autonomous organizations formed by people who voluntarily come together to meet their common economic, social, and cultural needs and aspirations through a democratically controlled enterprise. This model, which provides the basis for commercial enterprises established to promote social development, is fundamentally based on business practices grounded in principles such as ownership by members, service to partners, self-reliance, democracy, equality, justice, solidarity, and unity. In short, cooperatives can be described as a sustainable business model created to improve the life conditions of the relevant group by strengthening local economies and empowering people through participation.

**Sustainability and Cooperative Practices in Türkiye**

The concept of sustainability is a concept that encompasses the long-term continuation of economic activities in environmental and social dimensions. Cooperatives stand out as organizational forms that can address the economic, social, and environmental dimensions of sustainable development together. It can be easily stated that their highly resilient structure in terms of economic sustainability stems from their structure, which is owned by their members and prioritizes long-term stability over profit maximization. In such an environment, not only cooperative members but also the community in which they operate will benefit from the existing positive externalities (Birchall and Ketilson, 2009). This structure, which prioritizes long-term interests over short-term gains, also makes cooperatives more responsible in areas such as the conservation of natural resources and the development of environmentally friendly production processes. Consequently, such a structure naturally encourages long-term environmental responsibility and supports sustainable resource management. Due to these characteristics, the existence of cooperatives is directly linked to the United Nations Sustainable Development Goals, and cooperatives are recognized as important actors in achieving these sustainable goals, as inclusive economic organizations that can internalize sustainability throughout the entire chain from production to consumption.

It is stated that cooperatives within society are quite beneficial in terms of evaluating labor and products and acting as a balancing factor in solving societal problems by preventing market competition and conflicts of interest that may arise among various business groups. The management of food, particularly in the agricultural sector, is very important in terms of its impact on the social, economic, and environmental aspects of society. In this context, it is also possible to determine agricultural policies and implement them effectively through cooperatives. The factors that make cooperatives powerful in rural

areas are that they bring together people with low income levels and inadequate capital, providing them with economic power. In addition to the opportunity to find solutions to problems together, the monitoring of transparency in business processes also increases trust. Thus, the fair development of the employment environment and the subsequent search for solutions to problems in the region through cooperation are carried out through cooperatives (Kılıç and Aydoğan, 2022, 49). The importance given to cooperatives has increased in order to achieve social and economic development in the country, and this importance has been demonstrated through the creation of state incentives. Particularly in rural areas, the process that began with the aim of achieving social and economic welfare has subsequently evolved to support the sustainability of agricultural cooperatives.

Over time, cooperatives have proven their sophisticated nature by operating in a wide range of sectors and offering innovative solutions to social problems. The tendency to impose high taxes on the poor carries with it the risk of triggering tax resistance. Therefore, rather than increasing tax revenues, the current preference is to build a reliable system and implement better tax systems for taxation activities. Consequently, organizing taxation systems in a manner consistent with economic growth will yield successful outcomes (Long and Miller, 2017).

Within the definition of the social economy, it is possible to list four main types of organizations that provide goods and services to their members or to the general community. These can be described as cooperatives, mutual aid associations, societies, and foundations. They are private organizations that are independent of public authorities and have a specific legal structure. The social economy traditionally plays a complementary and supportive role to the public sector's services, but does not replace this sector (EC, 2021:3). Cooperatives play an important role in the development of the social economy and take on important roles, just as they do in the economies of European countries. It is also expected that the tax reductions and exemptions provided to cooperatives in Türkiye will contribute to the development of the cooperative economy. In this context, when classified according to their type of activity, cooperatives in Türkiye are divided into production, consumption, credit, construction, workplace, and other cooperatives (Koçtürk, 2006:119).

It should not be underestimated that such sustainable tax advantages are created based on the theory of positive externalities. It should be noted that companies obtaining certain tax advantages by considering the environment in their production processes and following environmentally friendly production processes is not only a matter of reducing costs for sustainable businesses, but also an important building block in creating a mechanism for economic justice. It should be noted that these incentives, which are applied to private companies other than cooperatives, are particularly widespread in areas such as waste management and renewable energy consumption.

Although they are non-profit organizations, cooperatives ensure that more tax revenue is generated than the tax exemption provided to them when they carry out their tax-exempt activities in compliance with the rules of documentation and keeping records. Indeed, other

actors working with cooperatives are also required to comply with the tax obligations arising from their transactions within this framework (Koçtürk, 2006: 122). In order for cooperatives to be exempt from the corporate tax currently applied in Türkiye, they must possess certain characteristics. However, the business volumes of cooperatives vary depending on their type, and situations that may harm competition in market conditions may also arise. Therefore, the issue of which types of cooperatives will benefit from the tax advantages created specifically for cooperatives must be carefully determined.

**Tax Status of Cooperatives in Türkiye**

When evaluating the tax liabilities of cooperatives in Türkiye in terms of corporate tax, Article 4 of the Corporate Tax Law No. 5520, which regulates their exemption from corporate tax, comes to the fore. According to this, Article 4 states that "except for consumption and transportation cooperatives, cooperatives whose articles of association contain provisions stipulating that no profits shall be distributed from capital, no shares of profits shall be paid to the chairman and members of the board of directors, no reserves shall be distributed to members, and business shall be conducted only with members, and which actually comply with these provisions, as well as cooperatives that, in addition to these provisions and conditions, have, from the date of their establishment until the completion of construction, real persons undertaking the construction work in whole or in part, legal entity representatives, or persons deemed related to them under Article 13 of the Law, or persons in an employer-employee relationship with the aforementioned, and whose building permit and land title deed are registered in the name of the cooperative legal entity, are exempt from corporate tax. In Türkiye tax legislation, the exclusion of a taxable subject from the scope of taxation is referred to as an “exception.” The complete exemption of persons or groups that should be taxpayers from their tax obligations is called an exemption. For cooperatives, tax exemption means the complete or partial elimination of their tax liability.

In cooperatives, there is also the matter of cooperatives that fulfill certain conditions benefiting from the risturn exemption institution. First established in 1937 by the International Cooperative Alliance in 1937 and subsequently developed through various updates, the rebate exemption refers to the return to members of the excess amount collected in exchange for goods sold in consumer cooperatives, the difference in interest rates in credit cooperatives, and the difference between the advance payments and the sales prices in production and sales cooperatives. The risturn exemption, which was also granted to production and credit cooperatives for many years and was abolished in 2018 with an amendment to Article 5/i of the Corporate Tax Law. Accordingly, only risturns calculated based on the value of goods purchased by members of consumer cooperatives to meet their personal and family food and clothing needs are exempt from corporate tax. Therefore, for returns calculated based on the value of goods purchased by members in consumer cooperatives to benefit from the exemption, the purchase activity must be based on the purpose of meeting personal and family food and clothing needs. Profits generated from

goods sold by cooperatives to their members outside of these items shall be subject to corporate tax. In distinguishing profits arising from transactions with members as relating to personal property, the ratio of the volume of business conducted with members in relation to such goods to the cooperative's total business volume, including the volume of business not covered by this provision, shall be taken as the basis.

Cooperatives may generate income from both member (internal) and non-member (external) transactions. Member transactions refer to operations carried out exclusively with the cooperative's own members, in line with the activities specified in its articles of association. Cooperatives that conduct transactions solely with their members and meet the legal requirements specified in the relevant legislation are exempt from corporate income tax. Therefore, the possibility of applying any tax exemption becomes unnecessary.

However, cooperatives that engage in both member and non-member transactions are not eligible for this tax exemption. Instead, they may benefit from the 'risturn' (member refund) exemption with respect to the positive difference between income and expenses arising from transactions with their members. In contrast, the positive income–expense difference arising from non-member transactions is subject to corporate income tax.

Furthermore, if the positive difference generated from transactions with members is not distributed to members in proportion to their transactions with the cooperative, or is fully allocated to reserves and funds, the 'risturn' (refund) exemption will not apply. To calculate these refunds, it is essential to distinguish between transactions with members and non-members. Any positive difference between income and expenses from transactions with members outside their membership status is not eligible for the exemption.

According to Law No. 3065, dated 1985, all goods and services that are supplied or rendered in Turkey for commercial, industrial or agricultural and professional operations, including those undertaken by agricultural cooperatives. Although responsibility for paying the tax falls on the person who supplies or imports the goods or services, the real burden of VAT is ultimately borne by the final consumer. This This means that the cooperatives pay VAT on the goods and services they procure. However, Cooperatives benefit from partial tax exemptions in the following three areas: - the rehabilitation and promotion of agricultural activities;

- delivery and services that are provided as a legal obligation and free of charge
- water delivery services for agricultural purposes and land rehabilitation services.
- drinking water to rural areas

Cooperatives are unions of individuals established internally to develop the economies of their members. Therefore, they primarily do business with their own members. This is one of the fundamental characteristics that distinguishes cooperatives from other commercial companies. Internal operations allow members to leave a portion of the profit from transactions with the cooperative, which they can then receive back as a risturn. Therefore, the amount generated from transactions between the cooperative and its members and considered as cooperative profit is actually the savings that the member has entrusted to

the cooperative. It is not profit from the cooperative's perspective. When cooperatives conduct internal transactions, the amount accumulated in their accounts is the savings accumulated by the member in the cooperative's accounts. Since savings are not an element of income, they are essentially not subject to taxation. Therefore, profit for the cooperative stems from the amount obtained when conducting external transactions.

The risturn exemption applies only to profits arising from transactions conducted between partners within the scope of their partnership status. Therefore, profits arising from transactions with partners must be separated from profits arising from transactions with persons other than partners. In the allocation process, the annual transaction volume conducted with partners under the partnership status will be determined, and then this amount will be proportioned to the cooperative's annual total transaction volume, including the transaction volume with persons outside the partnership. If the dividends calculated in this manner are distributed to the cooperative members, these distributed profits will not be considered as profit distribution for the members. These amounts, which are not considered as profit and profit distribution, cannot be subject to tax deductions related to profit distribution or declared by the members in their income tax returns. One of the controversial issues in the taxation of cooperatives is whether the tax base is calculated correctly. In this regard, the correct method for calculating the tax base in cooperatives is not to include the positive income-expense difference arising from internal transactions within the financial profit. This is because Article 2 of Income Tax Law No. 193 lists the types of income that are subject to taxation, regardless of whether the person or institution is a natural person or a legal entity (commercial income, agricultural income, wages, freelance income, real estate capital gains, movable capital gains, other income and gains), and savings are not included among these (Üstün, 2023: 342).

**Conclusion**

The most significant tax advantage provided to cooperative members is seen to be the ability to increase their capital accumulation. In such a case, not only will the tax burden on members decrease, but the resources they obtain will also increase. When evaluated in terms of sustainability, it ensures that economic activities can be continued in the long term in terms of environmental, social, and economic dimensions. Cooperatives that focus on increasing the benefits of their members rather than maximizing profits support the three pillars of sustainable development. In addition to tax advantages and financial resilience, increasing capital accumulation, increasing investment capacity, and strengthening investment capacity and growth potential are seen to provide resistance to financial shocks.

In order to realize sustainable cooperative practices in Türkiye, it is necessary to clarify the legislation, as the profit institution does not actually constitute income derived from the savings of the members and, at the same time, causes confusion in terms of tax practices. However, as in other countries, it can be stated that cooperatives are leading economic actors in Türkiye's market economy and provide effective benefits in developing

sectors. Cooperatives, which carry out activities that support sustainable production policies in very different areas, are seen to contribute to the sustainability of the economy.

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# LEGAL REGIME OF THE TAX TREATMENT OF COOPERATIVE SUPPLIES IN BULGARIA

**Kostadin Stanoev**[1]

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***Abstract***

*The present report examines the legal framework and tax treatment of supplies made by cooperatives in Bulgaria. The analysis focuses on the specifics of value-added tax (VAT) regulation, distinguishing between taxable and exempt supplies, as well as on the rules applicable to intra-Community transactions. The report outlines the main challenges faced by cooperatives in applying national and EU tax provisions, including the obligation for VAT registration, the implications of exempt supplies, and the documentation requirements for intra-Community acquisitions and deliveries. Illustrative practical cases are provided to demonstrate the legal and financial consequences of improper application of tax rules. The study highlights that the correct and consistent tax treatment of cooperative supplies is of critical importance for their financial sustainability, legal certainty, and long-term competitiveness within the integrated European market.*

**Key words:** *Cooperatives; Tax treatment; Value-added tax (VAT); Intra-Community supplies; Intra-Community acquisitions*

***JEL Codes:*** *P13, Q13, G00*

## Introduction

Cooperatives in Bulgaria have historical roots, forming in the early 20th century. They represent a form of cooperation between people with common interests, pooling their efforts to achieve economic, social, or cultural goals. According to the Bulgarian Cooperatives Act (latest amendment 2020), "Cooperatives may be established for the pursuit of various objectives, with the main principles of their governance including voluntarism, democratic management, and social responsibility." In Bulgaria, cooperatives are widespread across different sectors – from agriculture and manufacturing to social activities and trade – and play an important role in the sustainable development of the country. The tax treatment of cooperatives is of essential importance for their activity and development potential. Pursuant to the Value Added Tax Act (latest amendment 2021), "Cooperatives, when performing taxable supplies, are obliged to register for VAT and comply with all requirements applicable to commercial companies." The law also provides for exemptions in the case of specific supplies, such as social services (National Revenue Agency, 2009; Balans.bg, n.d.). Correct application of tax requirements concerning the supply of goods and services is crucial for

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the successful functioning of cooperatives. They must register for VAT when performing taxable supplies, but may also benefit from tax reliefs and exemptions for certain types of activities, such as social services. The topic of tax treatment of cooperatives in Bulgaria is highly relevant for several reasons. First, with Bulgaria's accession to the European Union, cooperatives must comply with EU rules on intra-Community operations, including intra-Community acquisitions (ICA) and intra-Community supplies (ICS), which significantly affect how they conduct their transactions. Second, tax reforms and amendments to the VAT Act in recent years have created new opportunities and challenges for cooperatives. In this context, the topic is not only important but also extremely timely, since the proper application of tax rules affects not only the financial results of cooperatives but also their legal and economic stability. The purpose of this report is to analyze the legal framework and tax treatment of cooperative supplies in Bulgaria in light of national and European legislation. To achieve this, the report presents the normative basis for the functioning of cooperatives, systematizes the types of supplies and their tax treatment, analyzes the specifics of intra-Community operations, and outlines key conclusions and recommendations for improving tax practice.

**Legal framework of cooperatives in Bulgaria**

The Bulgarian Cooperatives Act, last updated in 2020, regulates the functioning of cooperatives as legal entities. According to this law, cooperatives are associations of individuals who jointly engage in economic activities with the purpose of achieving economic, social, or cultural objectives (Cooperatives Act, 2020). They differ from commercial companies, as their governance is democratic and participation of members is voluntary. According to the Bulgarian Association of Cooperatives (2020), "First and foremost, cooperatives are established on the basis of voluntary membership, and any person may become a member if certain conditions are met." Each member has the right to participate in the management of the cooperative and to receive a share of the profits, if generated. However, unlike commercial companies, a significant portion of profits is usually reinvested into social or economic projects of the cooperative. In the European context, the legal framework of cooperatives follows the principles established by the International Co-operative Alliance (2015) and the European Cooperative Society Statute (Council Regulation (EC) No 1435/2003). These regulatory frameworks emphasize voluntary membership, democratic governance, and prioritization of social objectives over profit maximization. Bulgarian legislation largely reflects these principles, but the specific characteristics of national practice – such as reinvestment of profits and emphasis on social activities – demonstrate certain adaptation to local economic and social conditions. In this way, Bulgarian cooperative law not only aligns with core European standards but also combines these principles with the traditional socio-economic functions of cooperatives in the country.

**Types of supplies provided by cooperatives**

The activities of cooperatives in Bulgaria are characterized by a variety of supplies whose tax treatment is regulated by the Value Added Tax Act (VAT Act, Ministry of Finance, 2021). Taxable supplies are defined in Article 12 of the VAT Act and include all remunerated supplies of goods and services carried out within the scope of the cooperative's business activities. Examples include the sale of agricultural products, industrial goods, or services provided to third parties for payment. These supplies are subject to VAT and create an obligation for registration once the turnover thresholds defined in the law are exceeded (Article 96, VAT Act). Exempt supplies are regulated in Article 46 of the VAT Act and cover a range of activities reflecting the social role of cooperatives – for example, services in the fields of education, healthcare, and social activities. The exemption from VAT on these supplies aims to alleviate the tax burden on sensitive public sectors. At the same time, exemption from taxation limits the possibility of deducting input VAT, which may pose challenges to the financial sustainability of cooperatives (National Revenue Agency, 2009). A specific feature of Bulgarian practice is that cooperatives often combine economic and social objectives within a single organization, which means they simultaneously provide both taxable and exempt supplies. This creates the need for clear distinction and correct accounting and tax treatment. In the European context, VAT exemptions for social and educational services are widely applied, but in a number of Member States they are accompanied by special schemes for support or subsidies for social enterprises (European Commission, 2020). Such an approach contributes to a more balanced support for the cooperative sector and minimizes the financial impact of restrictions on VAT credit recovery.

**Tax treatment of cooperative supplies**

According to Article 96 of the Value Added Tax Act (VAT Act, Ministry of Finance, 2021), "Cooperatives performing taxable supplies are obliged to register for VAT if their annual taxable turnover exceeds the threshold for mandatory registration." This threshold is identical for all business entities but poses specific challenges for cooperatives, particularly smaller ones that combine economic and social objectives. In such cases, registration may increase the administrative and accounting burden; however, voluntary registration provides the opportunity to recover input VAT on goods and services, which enhances their competitiveness. It is particularly important to draw a clear distinction between taxable and exempt supplies. "Services provided in the social or educational sector may be exempt from taxation," pursuant to Article 46 of the VAT Act, as confirmed in the guidelines of the National Revenue Agency (2009). On the other hand, commercial transactions involving goods and services for external clients are subject to taxation. An example of a taxable supply is the sale of agricultural produce or machinery to another company. Intra-Community acquisitions are regulated in Article 13 of the VAT Act and occur when goods are acquired from suppliers in other EU Member States. According to the European Commission (2020), "Cooperatives carrying out such acquisitions are liable for VAT in Bulgaria through the

reverse-charge mechanism and declaration in the relevant VAT returns." For instance, if a cooperative in Bulgaria purchases goods from Germany, it must self-assess Bulgarian VAT on the acquisition and record it in its tax documentation. Non-compliance with these rules may lead to penalties and denial of expense recognition. Intra-Community supplies are regulated in Article 7 of the VAT Act and refer to sales of goods from one EU Member State to another. According to the European Commission (2020), "If a Bulgarian cooperative sells goods to a client in Germany, the supply may be exempt from VAT provided it is duly documented." This means that the transaction is invoiced without Bulgarian VAT, but evidence of transportation and the recipient's VAT registration in the other Member State must be provided. Failure to present the required documentation creates the risk of denial of exemption and subsequent financial sanctions. In practice, cooperatives frequently engage in intra-Community acquisitions and supplies as part of their business activities. For example, "if a cooperative purchases machinery from France, it must declare the acquisition and charge Bulgarian VAT. If the same cooperative sells products to a client in Italy, the intra-Community supply mechanism applies, and the invoice is issued without VAT" (European Commission, 2020). However, improper documentation of these operations may result in denial of exemption and significant financial losses.

**Conclusion**

The correct and consistent tax treatment of supplies carried out by cooperatives in Bulgaria is of critical importance for their financial sustainability, legal predictability, and institutional development. The harmonization of the national tax framework with European Union law places cooperatives within the broader context of the integrated European market and requires a high degree of compliance with dynamic regulatory changes. Of particular significance are the mechanisms of VAT taxation, including intra-Community acquisitions and supplies, which create strategic development opportunities but at the same time pose considerable organizational and legal challenges. Official guidelines of the European Commission (2020) emphasize that "the correct application of VAT rules in cross-border operations is a prerequisite for legal certainty and protection against financial sanctions." A similar position is reflected in the VAT Handbook of the National Revenue Agency (2009), which stresses the need for clear distinction between taxable and exempt supplies and their proper documentation. In this sense, the effective adaptation of cooperatives requires not only strict compliance with tax obligations but also institutional support, strengthening of managerial capacity, and adoption of good European practices. Tax policy toward cooperatives should be considered as an integral part of Bulgaria's national strategy for sustainable economic development and social integration within the EU. This outlines the need for a comprehensive policy that combines regulatory clarity, institutional support, and orientation toward the long-term competitiveness of the cooperative sector.

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# LEGAL STATUS OF CREDIT COOPERATIVES IN BULGARIA

**Olga Petkova - Mihaylova**[1]

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***Abstract***

*The Bulgarian National Bank maintains a Register of financial authorities under Art. 3 of the Credit Authorities Act (CA), which is public and contains basic data on both registered companies operating on the territory of the Republic of Bulgaria and deregistered financial institutions. Register the provision of information also on officially registered credit cooperatives under § 12 of the Preamble to the CA, funds established under the BDB Act, and foreign financial institutions that meet the requirements of the CA. (Bulgarian National Bank, n.d.)*

*The activities of financial authorities are defined in Art. 3, para. 1 of the LCI, as it is in line with the requirements of Directive 2013/36/EU on the degree of failure of the activity of credit countries and with regard to the prudential supervision of credit institutions of investment intermediaries, amending Directive 2002/87/EC and amending Directives 2006/48/EC and 2006/49/EC and Regulation (EC) No. 575/2013 on prudential requirements for credit countries and investment intermediaries and amending Regulation (EC) No. 648/2012. The financial administration of the BNB applies a registration regime to those entered in the Register under Art. 2 of the LCI. The data in the Register is updated through a single automated system based on the information from the financial institutions. (Directive 2013/36/EU, 2013)*

*This report will present the requirements for the operation of credit institutions and the conditions for their registration through a legal-institutional lens, situating national legislation within the broader European Union (EU) prudential framework. Drawing on the Bulgarian Credit Institutions Act (LCI), the Credit Authorities Act (CA), and the supervisory competencies of the Bulgarian National Bank (BNB), the study details the registration regime, ongoing supervision, and the content of prudential requirements that apply to cooperatives. Bulgaria's experience is compared with Germany, France, Italy, and Spain cases. Discussion is offered about the pressure for consistency of EU banking regulations and the continuing pressure between cooperative principles-member control and local development (Bulgarian National Bank, n.d.).*

**Keywords:** Banking Union, Regulatory Harmonization, Financial Stability, Legal-Institutional Analysis

**JEL Codes:** G21, G28, K23, F36, O52

## Introduction

Credit cooperatives are member-owned financial institutions designed to mobilize savings and extend credit on the basis of mutuality and democratic control. Their social

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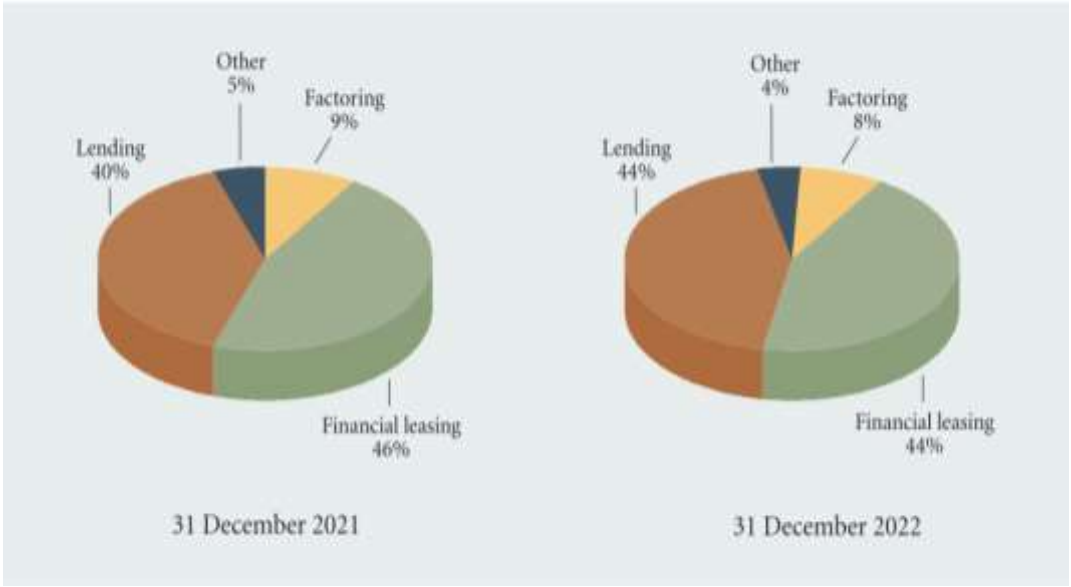
purpose can be summarized as providing safe, affordable financial services to communities that are often underserved by commercial banks. In Bulgaria, these organizations must navigate a regulatory framework that combines national legislation with EU-level requirements. The resulting framework is comparatively dense for small institutions, yet it is also a gateway to credibility, depositor protection, and financial stability.

*Figure 1: Financial Institutions' Assets by Type of Business*




*Sources:* BNB

This paper addresses three questions: (I) What is the legal status of credit cooperatives in Bulgaria under the Credit Authorities Act (CA) and the Law on Credit Institutions (LCI)? (II) How do Bulgarian rules interact with the EU's Capital Requirements Directive (CRD IV) and Capital Requirements Regulation (CRR)? (III) What challenges and opportunities follow from this configuration, especially for the inclusion of rural and low-income communities?

The table below outlines the regulatory framework on which the credit union sector in Bulgaria is built and its compliance with European standards. This legal framework provides clarity and predictability, but its effect is manifested in the context of the overall dynamics of the financial system.

*Figure 2: Summary Table: Key Laws and Instruments governing credit cooperatives in Bulgaria and the European Union*

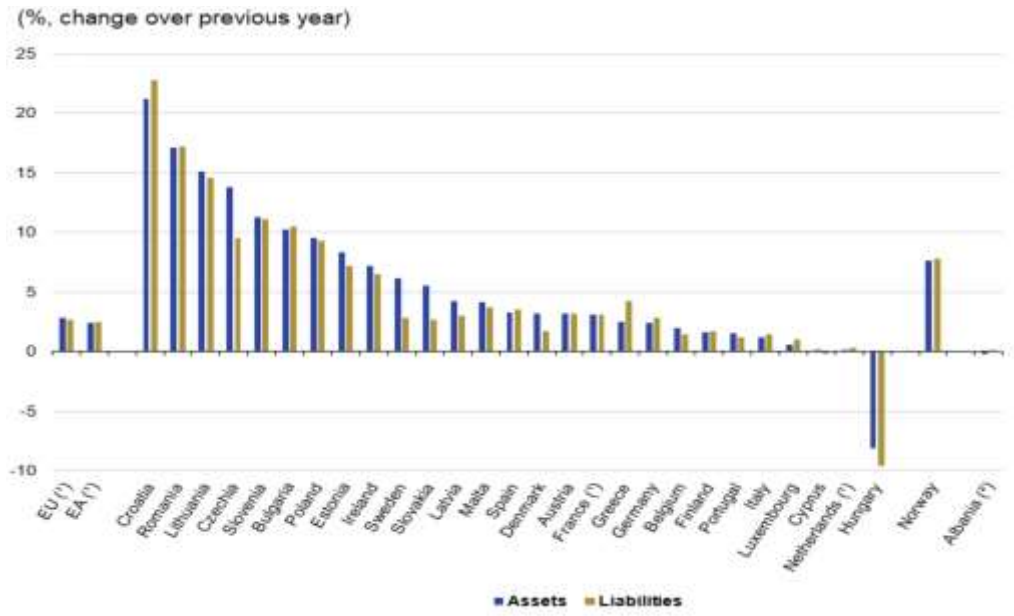
| Instrument | Scope / Relevance | Key Articles/Notes |
|---|---|---|
| **Credit Institutions Act (LCI), Bulgaria** | Defines licensing, activities, and supervision of credit institutions including cooperatives | Art. 2 (registration), Art. 3 (activities), governance and prudential norms |

| | | |
|---|---|---|
| **Credit Authorities Act (CA), Bulgaria** | Establishes the Register of financial authorities under BNB and related regimes | Art. 3 (scope), §12 Preamble (credit cooperatives) |
| **Directive 2013/36/EU (CRD IV)** | Prudential supervision of credit institutions and investment firms | Governance, capital buffers, fit-and-proper, remuneration |
| **Regulation (EU) No 575/2013 (CRR)** | Prudential requirements—capital, liquidity, large exposures | Pillar 1 metrics, leverage ratio, LCR/NSFR |
| **Directive 2002/87/EC (Financial Conglomerates)** | Supplementary supervision of banks/insurers within conglomerates | Group-level risk control, reporting |
| **Regulation (EU) No 648/2012 (EMIR)** | OTC derivatives clearing and risk mitigation—relevant to treasury risk | Clearing obligation, collateral, reporting |
| **EBA Guidelines (various)** | SREP, internal governance, ICT/outsourcing—applied proportionally | GL 2017/11 (ICT risk), GL 2019/02 (outsourcing) |

*Sources:* Bulgarian legislation; EU Directives and Regulations; EBA Guidelines

To put this framework into an economic perspective, the following chart presents the annual rate of change of total financial assets and liabilities of financial corporations in Bulgaria in 2023. The data illustrate trends in the growth and stability of the sector, in which cooperatives can play an increasingly significant role.

*Figure 3: Annual Rate of Change of Total Financial Assets and Liabilities of Financial Corporations, 2023*




*Source:* Eurostat

Data for 2023 show that the assets and liabilities of financial corporations are growing at a moderate pace, reflecting a stable but cautious expansion following the period of increased interest rates. In this context, credit unions can play a balancing role - maintaining access to financing for households and small businesses without taking on excessive risk.

Methodologically, the paper uses a legal-institutional approach. It analyzes statutory texts, supervisory guidance, and secondary literature on cooperative banking, integrating insights from comparative institutional analysis. Rather than treating law as static, the discussion emphasizes the dynamic interaction between rules, supervisory practices, organizational capabilities, and historical legacies.

The contribution is twofold. First, it offers a consolidated account of how Bulgarian cooperative finance is regulated and supervised within the EU acquis. Second, it distills practical steps to strengthen the sector: federation-building, proportional supervision, and digitalization. The analysis aims to remain rigorous while retaining a human perspective on why cooperatives matter - for trust, for inclusion, and for local development.

## Historical Background and Evolution

The cooperative idea arrived in Bulgaria in the late nineteenth century, traveling with agrarian reform and self-help movements that swept across Europe (Birchall, 2013). Early rural credit associations emerged as a response to usury and the volatility of agricultural incomes. Their core innovation was social capital: members pooled risk and information to extend credit locally, using character and reputation as collateral.

During the interwar period, Bulgarian cooperatives expanded in number and reach. Legislators recognized their role in rural modernization and crafted enabling statutes that eased their access to capital. Cooperative unions provided education, audit services, and representation among others. Despite this progress, scale remained limited; localism was a strength for monitoring but a weakness for resiliency (Zaimova et al., 2012).

During the socialist period of 1946 to 1989, democratic governance was dismantled, and the cooperatives were state-owned entities. The outcome was that the movement’s identity blurred as centralized plans dominated. This legacy still shapes public perceptions. Many Bulgarians associate 'cooperative' with coercive collectivization rather than voluntary mutual aid, which complicates contemporary efforts at trust-building.

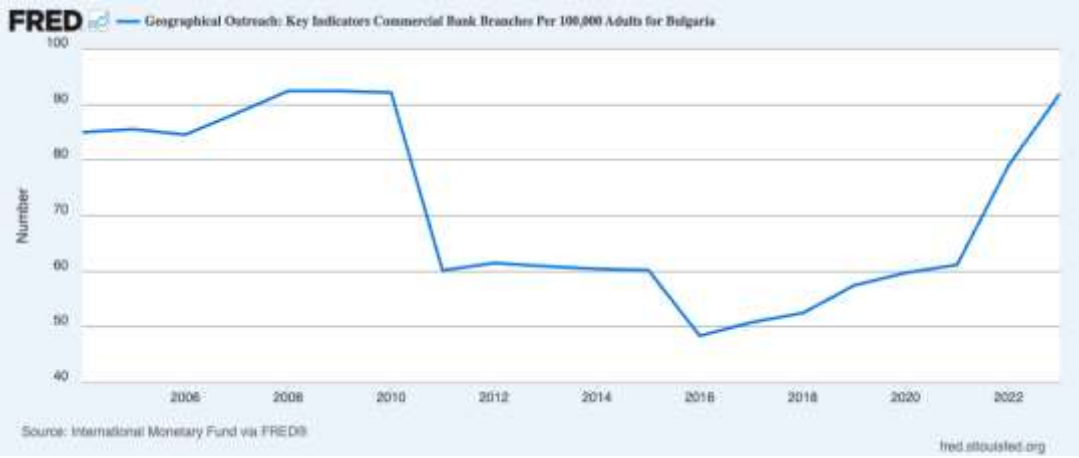
The post-1989 transition brought shock therapy to the sector. Some entities collapsed; others re-founded themselves as member-owned organizations in a competitive market. Pragmatically, the rise of EU-aligned prudential rules improved governance but also raised fixed compliance costs. Without a dense federation to share IT, audit, and liquidity support - as seen in Germany or France - Bulgarian credit cooperatives struggled to realize economies of scale.

## Legal Framework Governing Credit Cooperatives

The Credit Authorities Act (CA) defines how the Bulgarian National Bank (BNB) maintains its public register of financial institutions. This register includes both active and deregistered entities, such as credit cooperatives listed under §12 of the Preamble, funds created in accordance with the Bulgarian Development Bank (BDB) Act, and approved

foreign financial institutions. Operating as a transparency infrastructure, the Register is updated through an automated system fed by reporting from supervised institutions.

*Figure 4: Commercial Bank Branches Per 100,000 Adults for Bulgaria*




*Source:* Federal Reserve Bank of St. Louis.

The Law on Credit Institutions (LCI) outlines the activities that require authorization and oversight, bringing Bulgarian regulations in line with European Union standards. Article 3 of the LCI incorporates the provisions of Directive 2013/36/EU (CRD IV), which governs the supervision of credit institutions and investment firms, and complements Regulation (EU) No. 575/2013 (CRR) concerning prudential requirements Together, they operationalize a regime of capital adequacy, liquidity, concentration limits, and governance - adapted via proportionality to the size and complexity of each institution. (Regulation (EU) No 575/2013, 2013)

A core legal tension follows from this alignment. Cooperative banks exist to serve members; they are not shareholder-wealth maximizers. Yet prudential standards remain largely technology-neutral, focusing on identifying and managing risk regardless of its source. The Bulgarian framework, therefore, aims to protect not only the depositors but the overall system without diluting the cooperative identity. Practical implementation depends on supervisory judgment and institutions' ability to build internal controls commensurate with their risk profile.

### EU Instruments and Their Domestic Effect

The CRD IV sets the governance requirements regarding board composition, standards, internal control mechanisms, and remuneration policies. These provisions extend to the Bulgarian credit institutions, including cooperatives including, with the principle of proportionality guiding how strictly the rules are applied.

CRR translates prudential requirements into binding, directly applicable EU law: common equity tier 1 (CET1), total capital ratios, leverage ratios, large exposure limits, and liquidity coverage (LCR) and net stable funding ratio (NSFR). For small cooperatives, meeting CRR metrics requires careful balance sheet management and, ideally, access to federation-level services that reduce idiosyncratic risk.

Other instruments also matter. However, episodically: EMIR constrains derivatives use; the Financial Conglomerates Directive applies if groups span banking and insurance; EBA Guidelines interpret and refine supervisory expectations, including ICT risk management and outsourcing. As Bulgaria deepens its participation in EU structures, convergence with these norms increases.

**Registration and Supervision in Practice**

The registration starts with a review of the required documents - its statutes, organizational chart, proof of minimum required capital, business plan, and risk management policies. The Bulgarian National Bank examines whether the cooperative's setup meets the standards in the LCI and CA and whether its leadership is suitable for oversight. Approval confers entry but not immunity: supervision is continuous.

Off-site supervision uses periodic reporting to track capital adequacy, asset quality, earnings, liquidity, and sensitivity to market risk. On-site examinations probe internal controls, audit trails, credit underwriting, and IT security. Findings translate into supervisory measures - recommendations, corrective action plans, or sanctions. In severe cases, authorities can limit activities or initiate deregistration.

Coordination occurs within the European architecture. While the ECB directly supervises significant institutions in the Eurozone, Bulgaria coordinates with the Single Supervisory Mechanism (SSM) as part of its EU commitments. EBA guidelines and the peer learning that accompanies them raise supervisory consistency and expectations.

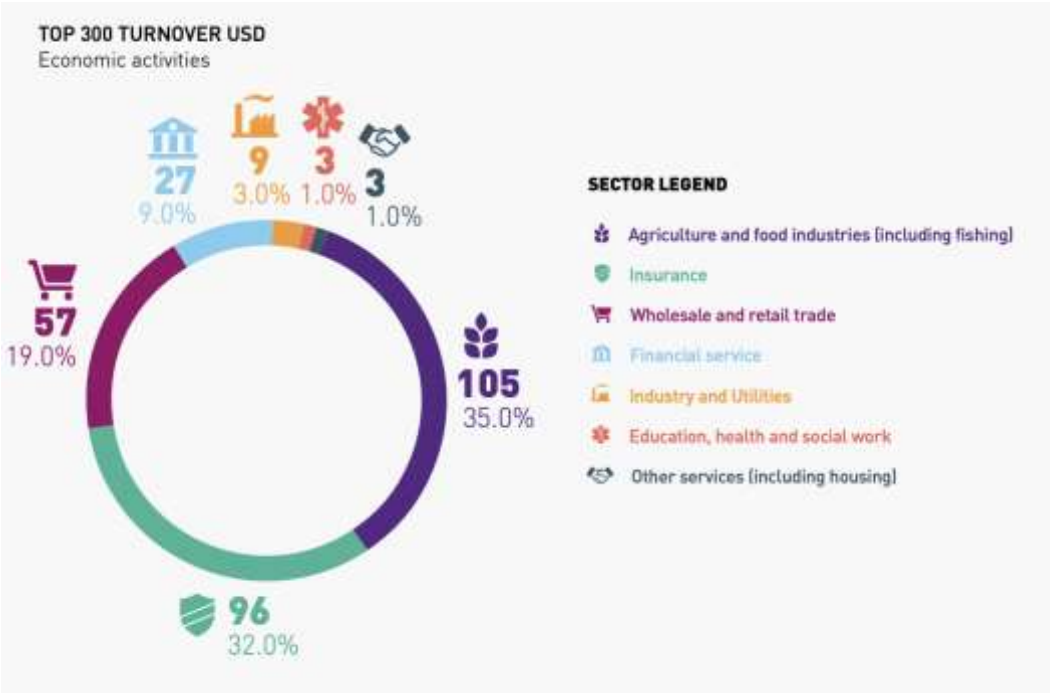
**Comparative Analysis within the EU**

Germany's cooperative banking sector is a good example for scallability. Two of their banks - Volksbanken and Raiffeisenbanken - operate with a common brand and shared IT platforms. The banks are regulated by central institutions, which in turn provides liquidity support, audit, and ongoing training. This mechanisms helps cushion shocks while the local knowledge sustains the relationship lending. The overall result is a resilient, decentralized network that competes credibly with commercial banks. (Groeneveld, 2015)

In France, Crédit Agricole demonstrates how cooperatives can evolve into universal banks without abandoning member orientation. The federated structures balance local autonomy with group-level prudential capacity - risk models, compliance, and market access. In Italy - Banche di Credito Cooperativo (BCCs) - after reforming process, have strengthened central coordination to meet EU expectations while maintaining local roots. (Ayadi, Llewellyn, Schmidt, Arbak, & De Groen, 2010)

Spain's caja rural network illustrates cooperative diversity: regional savings banks and credit cooperatives vary in scope but share mechanisms for solidarity. In the Central and Eastern Europe, the examples of Poland and the Czech Republic show progression through federation-building, while Romania continues to grapple with fragmentation. These experiences reinforce the importance of shared services and credible group-level governance (Fonteyne, 2007).

*Figure 5: Distribution of Top 300 cooperatives worldwide by sector*




*Source:* International Cooperative Alliance (ICA) (2023).

*Figure 6: Top 10 financial cooperatives worldwide by turnover USD*

| Rank 2021 | Organisation | Country | Economic Activity | Type | Turnover 2021 (Billion US$) | Number of Employees 2021 | FTE or Headcount |
|---|---|---|---|---|---|---|---|
| 1 | Groupe Crédit Agricole | France | | Consumer/ User | 117.01 | 147,000 | Headcount |
| 2 | REWE Group | Germany | | Producer | 82.03 | 257,996 | Headcount |
| 3 | Groupe BPCE | France | | Consumer/ User | 64.06 | 99,900 | Headcount |
| 4 | Nonghyup (National Agricultural Cooperative Federation - NACF) | Republic of Korea | | Producer | 61.17 | 27,865 | Headcount |
| 5 | ACDLEC Leclerc | France | | Producer | 60.56 | 138,000 | Not indicated |
| 6 | Cooperative Financial Network Germany - BVR | Germany | | Consumer/ User | 59.82 | 170,614 | Not indicated |
| 7 | Talanx Group | Germany | | Mutual | 53.82 | 23,316 | Headcount |
| 8 | Edeka Zentrale | Germany | | Producer | 51.97 | 83,534 | Headcount |
| 9 | Groupe Crédit Mutuel | France | | Consumer/ User | 49.36 | 83,141 | Headcount |
| 10 | Nippon Life | Japan | | Mutual | 49.07 | 92,737 | Headcount |

*Source:* International Cooperative Alliance (ICA) (2023)

*Figure 7: Top 300 USD Turnover Bracket*

*Source:* International Cooperative Alliance (ICA) (2023)

**Lessons for Bulgaria**

First, federation matters. The existence and opportunity of shared IT, audit, training, and liquidity facilities let small institutions achieve compliance at reasonable cost. Second, brand coherence builds trust. A common mark of quality - underpinned by peer review and external audit - can shift public perception. Third, the structured solidarity reduces the possibility of failure risk: mutual guarantee and central liquidity pools prevent local shocks from becoming systemic.

These lessons are not prescriptions but design prompts. The Bulgarian context - history, scale, legal traditions - will shape feasible paths. Yet the comparative record suggests that cooperative identity and prudential rigor are complements rather than substitutes when institutions collaborate at scale.

**Case Studies of Bulgarian Credit Cooperatives**

In the case of a rural cooperative - a small rural cooperative founded in the early 2000s illustrates the basic trade-off between outreach and resilience. Its initial model relied on relationship lending to farmers and micro-enterprises. Early delinquency spikes prompted an overhaul of underwriting and the introduction of member savings plans with withdrawal notice periods to stabilize liquidity. The cooperative survived by tightening controls and building partnerships with a regional federation for audit and training. (Zaimova, Zheliazkov, & Gaidardjieva, 2012)

When examining the urban niche cooperative, the intense competition from fintech lenders comes to the forefront of the urban cooperative serving self-employed professionals. It differentiated through financial coaching and bundled payment accounts. Compliance burdens were mitigated by outsourcing transaction monitoring and IT security to a shared service center. The member engagement was conducted in town halls, with transparent reporting, and patronage dividends - it proves that it was essential for retention. (EACB, 2024)

The transformation and merger - it is a legacy cooperative with weak governance entered a corrective plan after supervisory findings. The member accounts are protected and their ratios improved when the Board renews along with planned merger, which ultimately creates a stronger regional entity. This case shows how blended supervision can combine decisive intervention with a structured path toward long-term viability (European Banking Authority, 2017–2019)

**Key Challenges**

Capitalization: Thin capital bases constrain growth and amplify sensitivity to credit losses. Access to subordinated debt or cooperative capital instruments remains limited. Public-private schemes could catalyze recapitalization while preserving member control.

Compliance Costs: Fixed costs of AML/CFT controls, ICT security, and reporting weigh heavily on small balance sheets. Shared utilities help protect investments.

Trust and Legacy: Historical associations with collectivization depress demand. Transparent reporting, community projects, and independent audits are tools for reputational repair.

Digital Gaps: Outdated core systems slow product delivery and raise operational risk. Cooperative service bureaus can close the gap by providing cloud-based cores, APIs, and cybersecurity as shared utilities.

Competition: Commercial banks and fintech platforms target profitable niches, leaving cooperatives to serve high-touch, lower-margin segments. Strategic focus on member value - advice, community investment, and inclusive credit - can sustain differentiation.

**Opportunities and Policy Implications**

Financial Inclusion: Cooperatives can deepen outreach in rural and remote municipalities where branch networks have thinned. Microcredit paired with savings products and financial education addresses both sides of household balance sheets.

Sustainable Finance: EU initiatives - taxonomy-aligned lending, Just Transition funds, and green guarantees - open avenues for cooperatives to finance energy efficiency, small-scale renewables, and local adaptation projects.

Digital Transformation: Shared cores, instant payments, and open-banking APIs reduce unit costs and enable partnerships with fintechs. Proportional cybersecurity frameworks and pooled SOC services improve resilience.

Federation-Building: National-level audit, training, and liquidity support can be structured as optional but incentivized services. Over time, a credible mutual guarantee scheme could emerge, supervised under clear rules.

Regulatory Proportionality: The BNB can continue to tailor supervisory expectations to cooperative scale, focusing on outcomes—sound risk management, transparent reporting—rather than prescriptive processes.

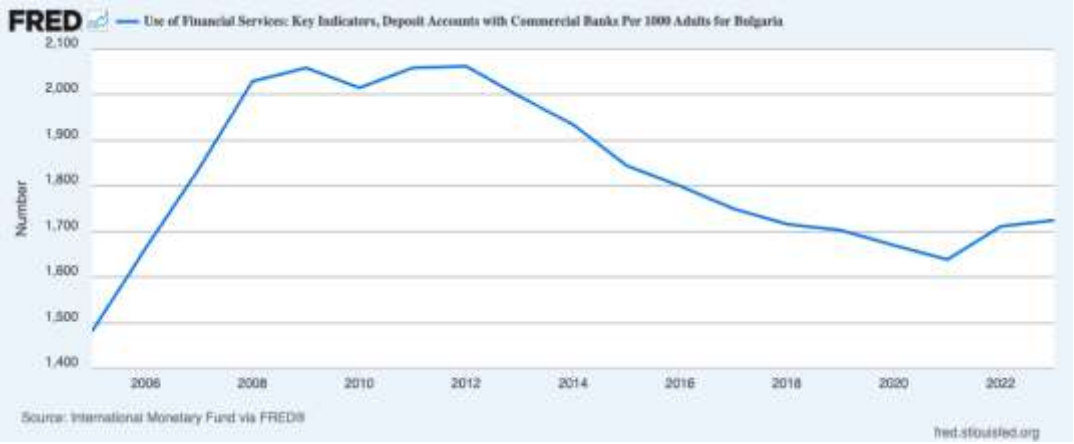
**Conclusion**

The exploration in this work, shows that the Bulgaria's legal framework for credit cooperatives is well aligned with EU prudential standards. The CA and LCI, applied through the BNB's registration and supervisory regimes, provide clarity and predictability. Yet legal harmonization is only a foundation. The vital organizational capabilities - governance, IT, risk management, social capital trust, and participation, are key components to a successful outcome. Ultimately, credit cooperatives can advance financial inclusion and resilience in Bulgaria while remaining consistent with EU standards.

For a better understanding of the financial environment in which credit cooperatives operate, the following charts present key indicators of the banking sector in Bulgaria – the

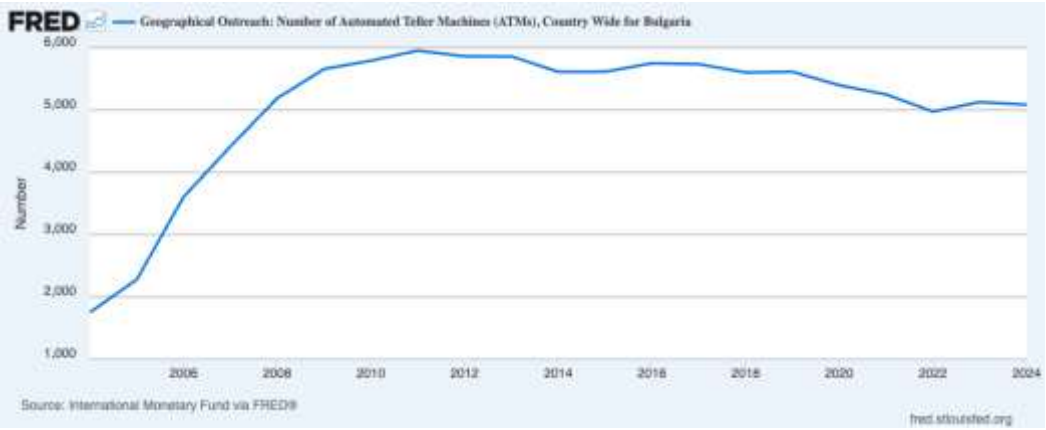
volume of deposit accounts and the accessibility of ATM infrastructure. The data illustrate the level of financial intermediation and the spatial distribution of services that credit cooperatives can complement.

*Figure 8: Deposit Accounts with Commercial Banks Per 1000 Adults for Bulgaria*



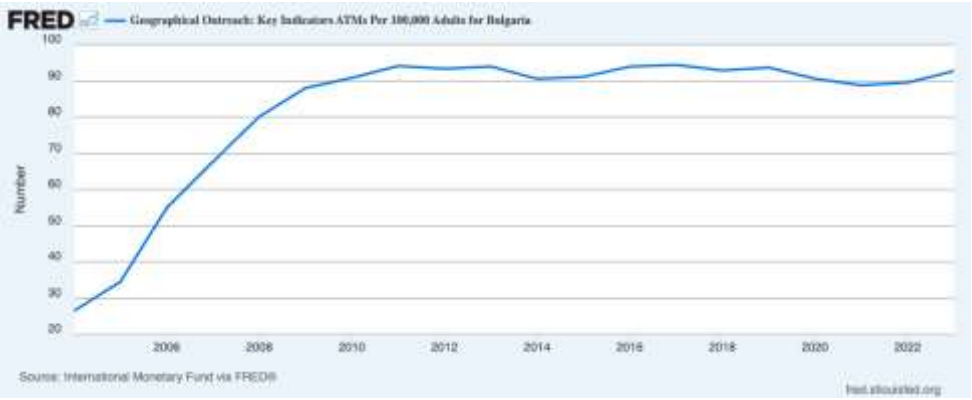

*Source:* Federal Reserve Bank of St. Louis.

*Figure 9: Number of Automated Teller Machines (ATMs), Country Wide for Bulgaria*




*Source:* Federal Reserve Bank of St. Louis.

*Figure 10: ATMs Per 100,000 Adults for Bulgaria*




*Source:* Federal Reserve Bank of St. Louis.

The data show that even though there is a relatively high banking density in urban centers, access to financial services in smaller settlements remains limited. In this context, credit cooperatives can complement commercial banks, especially through digital channels and community financing.

The comparative experience across the EU suggests that small size need not imply fragility if institutions collaborate through federations. Shared utilities lower costs; mutual support reduces failure risk; common brands build trust. For Bulgaria, the path forward involves patient institution-building, proportional supervision, digital upgrading, and sustained investment in member engagement.

The credit cooperatives are more than just a legal category. They are vital for the community. When rigor and cooperative reinforce one another, the result is a financial ecosystem that is both safe and inclusive.

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# PEER-TO-PEER (P2P) INSURANCE – A NOVELTY OR A DIGITAL RETURN TO COOPERATIVE FINANCIAL PRACTICES

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***Abstract***

*The report aims to present the development of peer-to-peer (P2P) insurance in the context of its cooperative principle, which is expressed in the union of people for the purpose of covering common risk exposure through the accumulation of common resources. Starting from the historical genesis of insurance, which began on the basis of mutual aid, contemporary P2P insurance, viewed as a return to the cooperative roots of insurance practice, is presented with an emphasis on the possibilities of digital technologies for uniting large masses of participants, with the role of intermediary technology companies as organizers and administrators of individual types of P2P insurance schemes being brought to the fore. The two approaches to the implementation of P2P insurance schemes related to the practice in China, on the one hand, and Europe and the US, on the other, are examined, with an emphasis on their advantages and disadvantages.*

***Keywords:*** *peer-to-peer (P2P) insurance; sharing economy; cooperative finance; self-organizing P2P insurance model; broker P2P insurance model; collaborative P2P insurance model; modern mutual aid*

***JEL Codes:*** *O30, M50, M13*

## Introduction

Insurance activity, both as a concept and in practice, arose and was organized around the principle of cooperation in the organization of protection against loss-causing events. A brief overview of the historical genesis of insurance practices, which evolved and led to the establishment of the supremacy of insurance companies as the main organizer of insurance protection in the present day, cannot fail to take into account that the first quasi-insurance forms of protection arose spontaneously and without the intervention of a specialized intermediary. These quasi-insurance associations of those threatened by the occurrence of a common risk were organized on the basis of the existence of a community of mutually interacting members united by the performance of a common commercial and economic activity. The first examples of such associations date back 5,000 years to the association of Chinese merchants transporting goods by river. This association prompted the adoption of a special organisation for the transported goods so that in the event of the loss of a transport ship, some of the united merchants would not suffer a total loss of the transported goods. The quasi-insurance practices that followed at a later stage in other parts of the world were again centered around trade and the transport of goods, as exemplified by their mention and legal codification in the earliest written laws, those of King Hammurabi. The formation and

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legal coverage of the financial practice of "maritime credit," which passed from Ancient Greece through the Roman Empire and reached the Theodosian and Justinian codes of the Eastern Roman Empire, not only outlines the existence of quasi-insurance protection in the event of loss of a ship and/or cargo, but also plays an important role as the basis on which the first insurance contracts were built, marking the beginning of modern insurance relations. The impoverishing link in the evolution and historical continuity of these quasi-insurance practices is the existence of a common social and/or professional group of people threatened by the occurrence of a given risk exposure, who organize a common resource for protection and support. The initial impulse for the creation and effective organization of this common resource may be linked to the possibility of establishing personal contact between the participants in the quasi-insurance association on the basis of the limited geographical area of the organization – usually these cooperative insurance assistance unions were organized, on the one hand, between merchants and craftsmen, and on the other, by the general population concentrated in individual cities and regions. This created conditions not only for the spontaneous and rapid organization of those at risk into common protection schemes, but also for a better understanding of risk exposure, given the common environment and activities of the participants, which allowed them to directly influence the manifestation of moral hazard. History provides evidence of the existence in the Roman Empire of numerous associations based on professional affiliation, called collegia, which covered and offered quasi-insurance protection to their members on the basis of professional affiliation - collegium veteranorum – the association of veterans who had served in the Roman legions, collegium fabrum – an association of artists, etc. (Ginsburg, 1940), (Perry, 2006). Quasi-insurance associations in the Roman Empire were also created on a social basis – collegium tenuiorum served to cover an important expense for its members – that of meeting funeral expenses related not only to the necessary ceremonial procedures, but also to financing the construction of a tombstone, allowing the memory of the deceased to remain for history. The name Collegium tenuiorum, which can also be translated as an association of ordinary people, clearly indicates the comprehensive focus of this quasi-insurance scheme aimed at developing the activity with the widest possible range of participants who, by making cash contributions to a common financial fund, finance the costs necessary to compensate those for whom the basic risk has materialized. The combination of social and/or professional principles with the aim of meeting the costs of common risk exposure formed by the collegia in the Roman Empire continued in Medieval Europe with the new structures of guilds and associations, i.e., the associations of craftsmen and merchants, while maintaining cooperative participation and a geographically concentrated base for association around the settlement and region.

With the establishment and increasingly widespread use of digital technologies today, the need to bring together those threatened by common risk exposure has gained new momentum for development organized around digital technology solutions, competing with the established insurance model. It is precisely the mediation of digital technologies that has

made it possible to overcome the limitations of the old models of quasi-insurance pooling associated with territorial and professional constraints in the formation of communities of participants. This digital impulse to redefine the organization of insurance protection has also provided new tools for analyzing and managing risk exposure, both personal to individual participants and communal to the entire group. In this respect, peer-to-peer (P2P) practices are important in that they most fully responded to the spontaneity of the new associations of those threatened by common risk exposure, but also brought the cooperative principle back to the forefront in the implementation of insurance activities: common risk => common means of addressing it => common management => common responsibility.

**The current insurance models**

In order to clearly highlight the advantages of the cooperative model of P2P insurance, we must examine it in the context of the classic model of insurance relations. The established and current model of insurance activity is based on risk averaging and standardization of the relationship between the insured and the insurer. Averaging the risk exposure associated with the entire pool of insured objects helps the insurer to perform its insurance calculations and determine a uniform average price for insurance protection. The effect of the statistical law of large numbers and the implementation of insurance activities on a larger scale, with the resulting economies of scale and more adequate quantitative assessments of the predicted realization of risk, give the insurer an advantage in carrying out its activities, but at the same time form uniform, common, and average conditions and prices for the implementation of insurance protection applied to all insured persons. This is most directly evident in the existence of standardized contracts with standardized conditions offered to a large number of customers, who also receive standardized prices for insurance protection that do not fully reflect their personal level of risk exposure. This standardization based on risk averaging is also evident in the structural implementation of insurance protection offered by the classic insured-insurer model (Figure 1). The insurer is the leader in this model, offering standardized contracts to all its customers, accumulating the funds received from insurance premiums in a single fund (ISF), and paying out claims from this fund. The insurer plays a leading role here, organizing and managing the financial flows to and from the fund and assessing the risk exposure of each customer and the customer base as a whole.

An important aspect of the classic insurance model is that the insurance company independently determines and manages the movement of financial flows related to insurance protection, once accumulated, the financial resources related to insurance protection can be considered its property with different levels of functional purpose depending on the stage of implementation of insurance protection. This becomes most evident in the final stage of the financial functioning of classic insurance protection, when the unutilized funds become the property of the insurer after the expiration of the insurance contracts.

Another important point related to the classic model of insurance protection is that insurers remain solely responsible for combating moral hazard. The involvement of

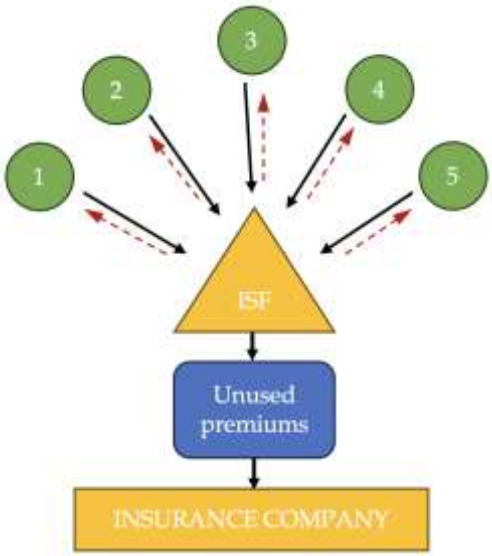
policyholders in this process is indirect rather than direct. The application of practices such as "Bonus-Malus" aims to influence individual policyholders to reduce their personal risk exposure, but the individual insured cannot influence the risk limitation associated with other customers of the insurance company, and therefore cannot influence the overall risk exposure of the insurance pool. Consequently, they cannot influence the amount of insurance premiums and claims paid, or ultimately influence the overall financial effectiveness of the insurance coverage.

Having said that, we cannot fail to emphasize that the standardized and centralized model of conducting classic insurance business also has its advantages, namely:

1. Economies of scale. The reduction in costs associated with carrying out insurance activities on a broader basis can be seen in two ways: A) the standardization of insurance contracts makes it possible to offer them to a wide range of customers, thus enabling the costs of their legal preparation and operational management during their term to be shared among a large group of customers; B) the inclusion of a large number of customers in an insurance pool allows the insurer to better manage the risk it has assumed, as the specific risk associated with individual insured parties is mutually neutralized, leaving the overall (systemic) risk, which is more successfully submitted to mathematical modeling and forecasting.

2. Each insured person is in a commercial and legal relationship with only one entity, namely the insurance company, which accumulates significant financial resources, making it more solvent and able to cover significant loss-making events involving the payment of larger claims. In this respect, it could be said that the level of credit and counterparty risk associated with the insurance company is significantly low, given the fact that insurance companies are subject to strict regulations by the state with the aim of ensuring their solvency at all times, regardless of the magnitude of the planned and unexpected risk exposure of their customers, which they must assume in the form of compensation payments.

*Figure 1 - Classic model of insurance business centered around the role and functions of the insurance company*




*Source*: author

However, the positive aspects of the centralized insurance model also reveal shortcomings that provide opportunities not only for its improvement but also for the creation of new forms of insurance protection. The shortcomings of the classic centralized insurance model can be broadly seen in the following areas:

- The formation of insurance premiums. Considering two important points, namely, on the one hand, the profit margin sought by the insurance company and, on the other hand, the formation of additional reserves in order to meet extraordinary risk developments, we can assume that the amount of insurance premiums set by the insurer is always higher than the level of risk expected by the insurer, i.e. the level of damages that the insurer expects to cover during the term of the insurance coverage (Carlin, 2009).

- Management of funds in the insurance fund. Once they have paid their insurance premiums, insured persons have no influence over how the funds in the general insurance fund from which claims are paid are managed financially, which means that insured persons cannot influence the overall financial efficiency of the insurance business (Achman and Chollet, 2001). This distance between the insured and the financial management and ultimate financial efficiency of the insurance business is also evident in the fact that, in the classic insurance model, the released and unutilized funds from the insurance fund, due to the expiration of the insurance coverage for which they were created, become the property of the insurance company rather than being returned to the insured, thereby encouraging them to suppress both their own risk exposure and that of all participants in the insurance pool.

- Lack of trust in the insurer. Due to the concentration of market power in the insurer as a result of the use of standardized contracts and coverage, it is possible that the organization of insurance protection will lead primarily to the coverage of the profit margins sought by the company, rather than the pursuit of insurance protection under the conditions of best financial efficiency for the insured. Furthermore, given the specificity and, very often, the difficulty for the insured to understand the mechanism of implementation of the individual stages of insurance protection, it is possible for the insured to be at a disadvantage vis-à-vis the insurer when defending their interests – a situation that is particularly evident in the claims settlement process (Abdikerimova & Feng, 2020), (Guiso, 2012).

**The Peer-to-peer (P2P) insurance**

The necessary environment for the emergence of P2P insurance was created by the combination of the imposition of digital technologies and the accompanying development of social Internet platforms. These factors, which are mutually reinforcing and interdependent in the context of a changed economic model linked to the changing consumption preferences of the new generations (the baby boomers versus the millennials), have led to the development of the so-called sharing economy based not on the principles of ownership but on shared consumption (Hamari, Sjoklint, & Ukkonen, 2016). It was precisely the need to find a specific new organizational framework for shared consumption that initially led to the emergence of peer-to-peer schemes for access to goods and services (Stephen & Toubia, 2010). The example of companies such as Uber and AirBnB, which built and established their business model on the shared consumption of transport and tourism services, was followed in the retail sector (Craigslist, eBay, OLX, and others), where the same product can be subject to successive acquisition and consumption by different users over time (Jiang and Tian, 2018), (Benjaafar et al., 2019), (Bellos et al., 2017), (Bimpikis et al., 2019).

Focusing on the shared consumption of financial services, and in particular on the emergence and establishment of peer-to-peer insurance, it should be noted that these have not only provided a new channel for the implementation of insurance protection, but have also recalled the historical development and evolution of insurance relations. Based on principles such as cooperation and mutual assistance, insurance has gained not only a new channel for digital expression in the practical application of P2P insurance schemes, but has also returned insurance practice to its roots and fundamental principles. Bringing self-insurance organizations to the forefront of the community of those threatened by the occurrence of a risky event helped not only to reject the unfavorable characteristics of the classic insurance business model, mainly expressed in the need to pay a higher price for protection from insurance companies, but also made it possible to resolve the main issues facing the insurer related to the management of information asymmetry and moral hazard, to be addressed and resolved with a different set of tools based on mutual control between the insured and the financial incentive to limit personal and group risk exposure. It should

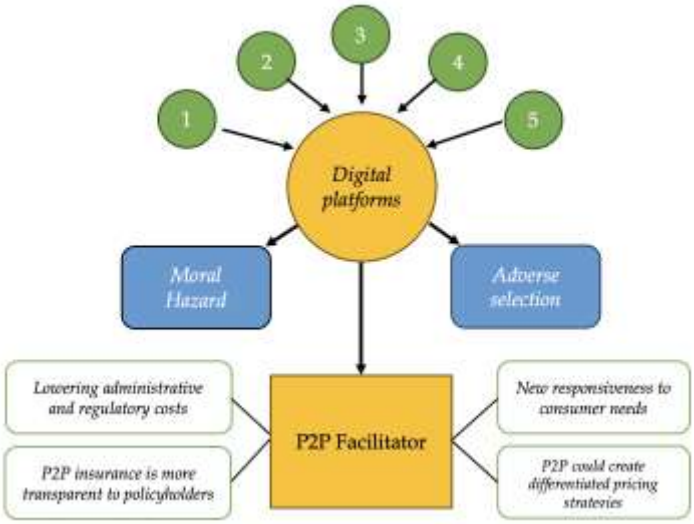
be noted that, in addition to the purely financial and economic reasons related to the reduction in the cost of insurance protection, the transition to P2P insurance schemes also has social significance – the sense of belonging to a common group that independently and with joint efforts pursues its financial goals definitely forms not only a sense of satisfaction among the participants in this form of insurance protection, but also provokes a feeling of special status and prestige (Lucas, 2017).

The essence of P2P insurance can be seen in the emphasis on seeking and achieving ever greater personalization of insurance relationships, not only in terms of the needs of the insured, but also in terms of the organization of compensation when an insured event occurs. In practice, the P2P model involves the existence of a mobile electronic platform where acquaintances and friends who would like to organize insurance protection can gather in a group. The insurance fund is formed from the premiums of the group members and is used to pay compensation in the event of a loss-causing event to any of the group members. This is where the two main differences between P2P and the classic model of insurance protection lie:

1. The P2P model assumes the existence of a group of insured persons consisting of a circle of friends or close acquaintances. This not only helps to establish mutual trust within the group and in the insurance scheme as a whole, but also improves the collection of more accurate and reliable information about the specific object of insurance. The provision of reliable and realistic personal data – age, health status, current condition of the object of insurance, etc. is easier and more transparent in a reference group and helps to determine more accurately the insurance premium payable by each member of the group. The preventive function of insurance related to avoiding the existence and consequences of moral hazard is also more adequately performed within a specific group of known people than in the conditions of "classical" insurance and participation in an anonymous, from the insured's point of view, group of people covered by the insurance pool. In summary, we could say that more precisely defined risk exposure and adequately limited moral hazard in the context of a reference group of insured persons who know each other contributes to the formation of a lower price for insurance protection.

2. The insurance fund formed under P2P covers the collected insurance premiums, which remain the property of the insured even after the insurance coverage period has expired. When this moment occurs, the remaining amount of the fund, not used for the payment of claims, is returned to the members of the group. This is the difference from the classic insurance model, where, after the insurance contracts have expired, the remainder of the technical reserves becomes income for the insurance company. In order to reflect the possibility of a more extreme risk development than previously expected when forming the P2P insurance fund, the practice of reinsuring part of the insurance risk is applied. In this way, even in the event of extreme risk development and full utilisation of the insurance fund, the completeness and continuity of insurance protection is guaranteed by the reinsurer.

*Figure 2 - Structure of the P2P insurance model reflecting the main advantages of the model*




*Source*: author

**Advantages of the P2P model**

The advantages of applying P2P insurance can be seen in the organizational structure used, which aims to maximize the coverage of the shortcomings of the classic insurance model and give priority to the cooperative principle in the organization and implementation of insurance protection:

1. Decentralization. Removing the central role of the insurance company makes it possible to achieve two very important advantages:

- Strengthening the participation of the insured in the management of insurance processes and achieving better understanding and trust of the insured in the risk management process, leading to a significant impact on adverse selection and moral hazard;

- Greater transparency of financial processes not only leads to greater trust and involvement on the part of policyholders in P2P insurance compared to traditional insurance companies, but also eliminates the frequent mismatch between the interests of the policyholder and the insurance company, especially in the process of settling claims and determining the compensation due.

- The decentralization characteristic of P2P insurance gives it an operational advantage in being more flexible in understanding and responding quickly to the changing needs of policyholders. Using their technological advantage and the fact that they do not offer a standardized insurance service in terms of scope and price, P2P insurers can respond very quickly to the needs of their customers, both in terms of creating new insurance products and insurance pools, but also in offering personalized services. The ability to

flexibly change the size and composition of insurance pools directly affects the ability to apply different and flexible pricing policies in practice.

2. Optimization of the financial structure of insurance protection. The absence of an insurance company that burdens the cost of insurance protection with administrative and management expenses, as well as with its expectation (demand) for a profit margin, has a direct and immediate impact on reducing the amount of financial flows required from the insured and necessary for the formation of the insured fund for the payment of compensation. In addition, this effect of financial optimization is complemented by the absence of capital requirements and the need to form additional reserves to meet liquidity requirements, which are characteristic and required by law and state regulators in order for an insurance company to operate legally.

3. Technological capability. Based on the central role of digital platforms as a means of reaching and interacting with customers the P2P insurance models achieve not only financial but also technological efficiency - seen both as an opportunity for more direct contact with customers and as having enormous potential to attract new ones by leveraging the capabilities of large global social networks such as Facebook, LinkedIn, and others.

**Challenges facing the implementation of the P2P model**

The successful implementation of P2P insurance models requires the resolution of certain organizational issues, the answers to which will not only determine the specific organizational parameters and the P2P model chosen for application, but will also outline the essential differences that define and distinguish the different types of P2P insurance models:

1. What will be the access to the P2P insurance scheme? Will scheme participants be responsible for making the initial selection, thereby assuming responsibility for the quality of the added risk with each new participant, or will an intermediary approach be used, relying on selection based on the decision of an intermediary (broker) using, among other things, automated selection based on a technologically implemented algorithm for checking risk exposure according to predefined criteria?

2. What will be the chosen model of organization and management of the P2P scheme – will the independent administration and control functions continue to be performed by all participants in the scheme, through the approach of decision-making by common vote and consensus, or will the operational management be entrusted to a specially appointed facilitator (broker)?

3. How will financial flows be managed – will a common insurance fund be created to collect insurance premiums from the insured, or will compensation be paid post factum – once the total amount payable for all compensation due for a given period has been determined, it will be divided by the number of participants in the P2P scheme and each will pay their contribution. If the option of forming an insurance fund is chosen, who will manage it and in what assets will the funds be invested?

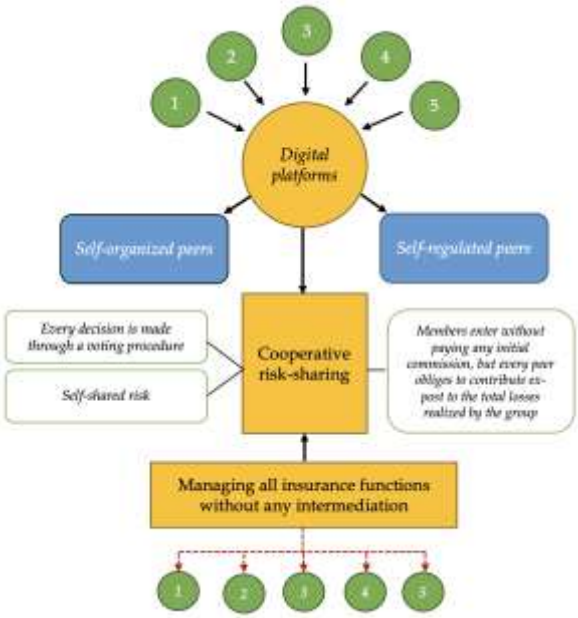
**Types of P2P insurance models**

In general, we can outline the types of P2P insurance schemes into three main groups, the differentiation between which is generally achieved by whether the scheme is completely self-organized or whether an intermediary, facilitator (broker) is included for the operational and administrative servicing of the insurance processes:

- Self-organizing model;
- Broker model;
- Carrier or collaborative model.

1) ***A self-organized model***, in its structure and overall functioning of insurance processes, achieves the highest degree of democratization of P2P insurance schemes. This is most evident in the structure of the model (Figure 3), where there is a clear absence of any intermediary (facilitator) in the operational and administrative management of insurance processes—not only is there no such internal organizational intermediary within the model, but there is not even an external one, given the lack of participation by an insurance company to take on the extreme and unexpected development of risk. All processes in the self-organized model are based entirely on the cooperative principle of shared responsibility: participants organize themselves independently on digital and social platforms, all decisions on the functioning of the P2P scheme are taken by vote and majority, and operational control over organizational and financial processes is exercised by all participants. Joining the scheme means that new participants do not make an initial contribution but sign a participation agreement, which obliges them in the future when the costs of paying insurance claims for a given period have been established as an exact amount, they will jointly and severally participate in their financial security with the other participants. Since participants in P2P insurance schemes join them on the basis of common interests and risk exposure, achieving further differentiation of the insurance services, offered in the model, based on the objects of insurance (health, property, motor insurance, etc.) is entirely expected. However, in order to group participants into homogeneous risk groups, additional selection is made on the basis of social status, regional location, profession, and others. Examples of functioning self-organised P2P insurance schemes can be seen in the Chinese TongJuBao, which started its existence in 2015 and gave rise to this model. Another example is the Russian Teambrella, which also started its existence in 2025 introduced a self-organised and self-managed P2P scheme built around the use of digital wallets by its participants and deepened the financial decentralisation process by organising all financial processes around the use of the Bitcoin cryptocurrency.

*Figure 3 - Structure of a self-organized P2P insurance model*

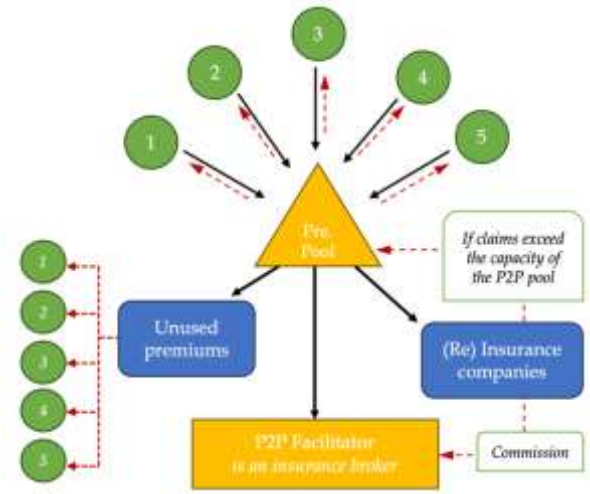



*Source*: author

2) ***The brokerage model*** is based on the inclusion of an intermediary (broker or facilitator) in the P2P insurance scheme, who organizes the insurance processes in the scheme administratively and financially (Rego and Carvalho, 2019). The establishment of the brokerage P2P model begins with the cooperative association of participants within the digital platforms, but the operational processes of creating homogeneous risk groups in the scheme, their servicing, and administration are undertaken by the broker-intermediary. New participants are included both through online contact with the P2P scheme via its digital platforms and directly through direct contact with the broker-intermediary. From a financial point of view, it should be noted that the inclusion of a new participant is linked to the obligation for them to make a predetermined cash contribution to the P2P scheme at the time of their joining. The cash contribution is determined on a cooperative basis and is the same for all participants. The funds collected by the broker-intermediary are directed to an insurance fund (Figure 4), from which insurance claims are paid. The formation of this insurance fund not only helps the P2P scheme to have high liquidity, enabling immediate payment of insurance claims, especially those related to insurance events with a higher frequency of occurrence and small amounts of damage, but also allows for a more precise determination of the amount of contributions in the context of the results of the financial management of the fund and the insurance risk, which leads to a more effective impact in terms of limiting the occurrence of moral hazard associated with the insured. All this could lead to the formation of a competitive financial advantage for the P2P scheme over

traditional insurance companies, resulting in lower insurance premiums (contributions) compared to the average and higher prices of insurance protection offered by insurance companies. It should be noted that insurance companies are not excluded from participating in this P2P insurance model, but their role is more like that of a reinsurer, which must cover the extraordinary and extreme development of the risk that may give rise to the need to pay compensation in excess of the capacity of the P2P scheme's insurance fund. In order to ensure the participation of insurance companies in the scheme, the broker-intermediary allocates part of the accumulated financial contributions from the participants and uses them to pay for insurance coverage from a selected insurance company. This not only achieves greater financial security for the P2P insurance scheme, all approved insurance claims will be financially covered, whether by the scheme's insurance fund or by the participating insurance company, but it also provides an opportunity to finance the activities and participation of the broker-intermediary (Figure 4). A successful example of the practical application of a brokerage P2P insurance model can be seen in the activities of the German company Friendinsurance, which started operating in 2010.

*Figure 4 - Structure of the brokerage P2P insurance model*




*Source*: author

3) Of all types of P2P schemes, the ***carrier or collaborative P2P insurance model*** offers the greatest opportunity for the inclusion and expanded participation of traditional insurance companies:

- both in terms of ensuring the financial stability of P2P schemes through their reinsurance pool;

- and in terms of the opportunity to harness the potential of digital platforms to expand the scope of insurance companies' activities by providing even more customer-centric services in the context of digital redefinition and - fully meeting the needs of policyholders

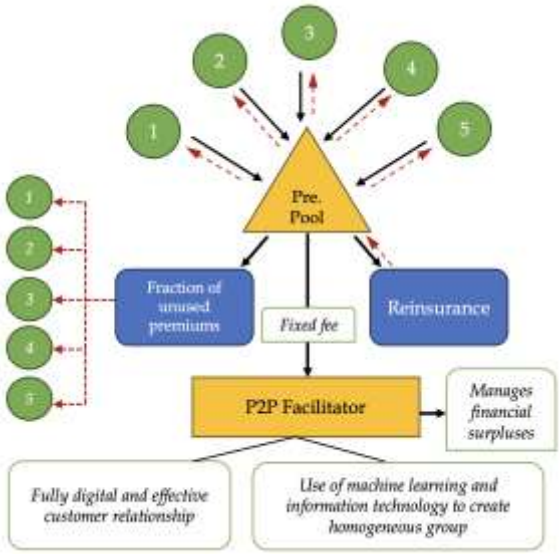
within their overall customer journey and participation in the individual stages of the insurance process.

In the carrier P2P insurance model, the organiser or facilitator of the scheme is an independent insurance company that operates on a digital basis by carrying out all stages of the insurance process solely within the insurance platform used. When a participant joins the P2P scheme, as in the brokerage model, they pay a cash contribution, which is used to form the insurance fund. Continuing the similarities with the brokerage P2P model, the scheme facilitator also includes an external insurance company to play a reinsurance role. The differences between the brokerage P2P model start with the fact that the facilitator in the carrier model charges each participant a fixed fee for the organizational and administrative activities related to the insurance process (Figure 5). The second significant difference is that, unlike the previous two types of P2P insurance models, in the carrier model, if there are funds remaining in the insurance fund at the end of the insurance coverage period, these funds are not returned to the participants, as is the case with the self-organized and broker models, but the facilitator, taking into account the wishes of the participants, directs the financial surpluses of the insurance fund to charitable causes. This effectively removes the possibility for participants to directly manage and use the financial surpluses at the end of the insurance coverage period, thereby reducing their incentives to limit the potential for moral hazard. This effect of the carrier P2P insurance model is offset by the facilitator's digital activity in terms of accurately determining risk exposure. In order to establish the current risk exposure of individual participants and direct them to the appropriate risk groups within the P2P scheme, the facilitator uses digital technologies such as machine learning to achieve not only better coverage of the actual risk exposure, but also to offer lower insurance protection prices compared to the risk averaging-based pricing models characteristic of the classic insurance model and companies. A very successful and illustrative example of the application of the carrier or collaborative P2P insurance model can be seen in the practice of the US company Lemonade, which started its operations in 2015.

In searching for essential distinctions between the three models of P2P insurance, we must outline another structural difference that leads to the formation of an essential one. The coverage of the risk of individual participants and, on this basis, the formation of homogeneous risk groups in digital platforms is carried out on a different basis. In the self-organized model, risk selection is by definition a priori—members of the P2P scheme belong to a single regional, professional, or socio-economic group, which is why determining the risk characteristics of each new member does not require extraordinary effort and resources, given the common risk profile of all participants. The opposite position in this regard is held by intermediary P2P models. By establishing contact and making an initial selection through the intermediary and within the confines of a digital platform, participants cannot gain a complete picture of the personal risk exposure of each new member joining the P2P scheme. This predetermines the need for the intermediary (facilitator) to use automated algorithms based on digital technologies to make the risk selection and form homogeneous risk groups.

This necessity not only predetermines the need for the development of digital innovations related to risk assessment and classification of participants in P2P insurance schemes, but the way in which digital insurance mediation is carried out may also determine the need for and manner of implementation of state regulations over this insurance activity. For example, within the European Union, the current regulator EIOPA defines three types of P2P insurance models: insurer, insurance intermediary, and technical service provider (EIOPA, 2019). In the first model, P2P insurance is offered by an insurance company which, due to the nature of its business, is subject to licensing and ongoing regulatory control by national and supranational regulators within the established regulatory and procedural practices. Similarly, the P2P intermediary model must take into account the regulatory and legal requirements for licensing and organizing the activities of insurance intermediaries established in the current legal framework. A broader interpretation can be found with regard to P2P technical service providers. A typical example can be seen in the self-organizing P2P insurance model, where insurance companies or insurance intermediaries such as brokers, as participants or administrators of the P2P model, are completely absent. This also highlights the lack of any direct or indirect regulation within the established regulatory framework for insurance companies and activities to date. The need for such a regulatory framework for the entire range of existing P2P insurance schemes is not only to protect the interests of participants from inadequate and unlawful actions by the organizers of these insurance schemes, but also to protect the interests of participants from inappropriate actions by the state in its efforts to eliminate regulatory gaps. An example of the latter can be seen in the history of the largest P2P insurance schemes of the self-organizing mutual aid type – Xianghubao. Although the Chinese P2P scheme experienced some difficulties in settling claims for compensation towards the end of its existence, the decision by the Chinese banking and insurance regulatory commission to declare such online insurance platforms illegal further accelerated the demise of Xianghubao.

*Figure 5 - Structure of the carrier or collaborative P2P insurance model*




*Source*: author

### The P2P insurance model vs. Modern mutual aid

In the practical development and dissemination of P2P insurance models, two distinct approaches to organizing the participation of those involved in the scheme and managing financial flows are emerging. Given the widespread application of and interest in such P2P schemes among the population, we can distinguish the first approach associated with the practice established in China. This practice is characterized by its emphasis on the cooperative and widely accessible (democratic) principle of attracting participants to the P2P insurance scheme, which brings it closer to the self-organized model while maintaining financial independence – there is no prior allocation of funds for the organisation of an insurance fund managed by an intermediary and/or to an external insurance company acting as a reinsurer. At the same time, the inclusion in the operating model of a technological intermediary (facilitator) that organizes and administers the processes brings Chinese P2P schemes closer to the brokerage model. The example of companies such as Xianghubao and others like it, which have attracted significant interest from the population, not only proved the vitality, both consumer and financial, of such schemes, but also gave them the name "modern mutual aid," further highlighting the cooperative and social principles underlying their operation. The statistics on this operation are truly impressive – in just four years, between 2016 and 2020, these P2P insurance schemes managed to accumulate $6.09 billion and a total customer base of 314 million people. To put these participant numbers into context, it should be noted that this represents approximately one-third of China's total population and more than half of the population of the European Union. This huge consumer interest in the activities of these P2P insurance schemes can be partly explained by the large

scale and population of China, but the main reason can be seen in the subject of activity—the main insurance service offered is related to health insurance. Organising all their activities exclusively online and through digital platforms, Chinese P2P insurance schemes offer coverage in the form of individual health plans that finance the costs associated with the treatment of critical illnesses. Upon acceptance, participants in the P2P scheme do not pay any entry fees and/or insurance premiums, but only sign a mutual aid community agreement, which obliges them to share, together with all other participants, the medical expenses incurred at the end of each month by participants who have submitted claims for compensation. In order to avoid abuse and fraud by participants in the P2P scheme, the following step-by-step procedure is followed:

A) A quarantine period of 90 days is imposed after the diagnosis of the critical illness and the possibility of submitting a claim for coverage of medical expenses;

B) After the 90-day period expires, a strict procedure for settling the claim for compensation begins, including investigation and assessment by qualified medical personnel;

C) The results of the medical examination of each individual case are compiled in reports and published online in order to achieve transparency of the activity for the participants, but also to create an opportunity for mutual control between them and reduce moral hazard.

The remuneration for the company organizing the P2P scheme is received as a fixed fee deducted from the participants; for example, in Xianghubao's practice, a fee of 8% is deducted from all insurance claims paid. Chinese P2P mutual aid schemes are not defined as traditional insurance companies and are therefore not subject to direct regulation by state regulators. However, this does not mean that Chinese regulators are not interested in their activities. To avoid the possibility, and indeed the suspicion among the general public, of a Ponzi scheme, companies managing P2P mutual aid schemes are required not to hold their customers' funds in their bank accounts. At the end of each month, the total amount of compensation due is calculated, and the scheme organizer collects the funds from the participants and transfers them directly to the medical institutions that served the participants in the scheme. Following the rapid growth and increased customer interest in P2P mutual aid schemes, the commitment of Chinese state regulators has been expanded, with active promotion emphasizing that the technology companies serving mutual aid schemes are not insurance companies and therefore their service cannot be defined and/or presented as insurance.

The second approach to the practical implementation of P2P insurance schemes is related to the activities of companies based in Europe and the US, such as Friendinsurance and Lemonade. A characteristic feature of their organization is the comprehensive and specialized service provided by the company organizing the P2P scheme. Its activities are not limited to the administration and management of processes only, but also include active participation in the management of financial processes related to determining the necessary

initial financing received through insurance premiums paid by participants, the formation of homogeneous insurance groups and the insurance fund, the payment of claims and the management of financial surpluses remaining after the end of the insurance coverage as unutilized funds in the insurance fund.

The main differences in the model of organization and functioning between Chinese modern mutual aid schemes and P2P insurance models applied in the US and Europe can be summarized in the following points:

1. Entry into the P2P insurance scheme. While in European and US P2P insurance schemes, the entry of a new participant is associated with an initial financial contribution in the form of an insurance premium, in Chinese P2P mutual aid schemes, the admission of a new participant only requires the signing of a binding contract for future participation in covering the fund's compensation costs.

2. Existence and management of an insurance fund. The financial amounts collected a priori from participants in European and US P2P insurance schemes are used to build an insurance fund from which compensation is paid. This important organizational and financial feature highlights not only the need to create and maintain the insurance fund, but also raises the question of the organizer's (facilitator's) capacity to build it, including the effectiveness of activities to accurately determine the homogeneous risk groups of participants and, hence, the specific amount of insurance premiums, but also decision-making on the investment of funds in the fund and the degree of involvement of an insurance company as a reinsurer. In Chinese P2P mutual insurance schemes, not only are the above issues absent, insofar as no insurance fund is established, but the possibility of establishing one may also be subject to prohibition or restriction by state regulators in order to prevent the possibility of Ponzi schemes being set up by the organizers of the mutual aid scheme.

3. Financial adequacy of insurance coverage. The existence of an insurance fund and the partial transfer of risk to a traditional insurance company helps European and US P2P insurance schemes to always guarantee sufficient liquidity to cover the losses suffered by their participants. In Chinese mutual aid schemes, compensation is paid to participants jointly and severally by all participants at the end of each protection period, but if the pool of participants is not large enough and there is a very high risk development during a given period, resulting in large amounts of compensation due, it is possible that the cost and opportunity for individual participants to participate in the mutual aid scheme may exceed their personal tolerance limit and/or ability to pay for participation in the scheme.

**Conclusion**

Peer-to-peer (P2P) insurance models can be seen as a logical extension of ancient mutual aid associations based on the cooperative principle, which essentially provide the necessary foundation for the development of modern insurance as a practice and organization. The development of digital technologies in recent decades has enabled those exposed to a particular risk to once again reap the opportunities and benefits of decentralized

mutual aid, characteristic of ancient insurance association schemes, but under the condition of overcoming their main limitation, namely the geographical scope that does not allow for the development of the activity on a larger scale. Modern digital technologies have made it possible not only to reach a very large circle of potential participants extending significantly beyond the local community, but also provided new tools for covering risk exposure. Arising mainly around the advantage of achieving low price of insurance protection, P2P insurance schemes have enabled more active participation and responsibility of members in the insurance community regarding financial management and performance, with a clear redefinition of the role of insurance intermediaries organizing these schemes. The centralized model characteristic of traditional insurance companies has been replaced by proactive involvement and control of activities by the insured, which has not only changed the intermediary role of companies organizing peer-to-peer (P2P) insurance schemes, but also shifted their focus to improving the customer experience at every stage of insurance service consumption, while achieving maximum financial efficiency and reducing the cost of insurance protection. The existence and imposition of peer-to-peer (P2P) insurance models on the market does not mean the replacement and removal of traditional insurance companies from insurance relations, but represents an opportunity to achieve synergy with potential for evolutionary development for them.

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# ENERGY COMMUNITIES IN BULGARIA – A LOOK FROM THE INSIDE

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***Abstract:***

*In 2026 more new energy communities are expected to start in Bulgaria. Their existence is possible after legal changes from the fall of 2023. The first one was established shortly after in Gabrovo, and the second was launched in the fall of 2024 in Burgas. In the spring of 2025, a third was announced, again in Gabrovo. The aim of the paper is to reveal the practical possibilities and legal constraints, as well as to present the development of each of the first three from the inside. This is done by interviews and observation through personal participation in the community in Burgas. The results of the survey outline a useful model for creating future communities, some errors in their design are analyzed, and the advocacy for legal changes is monitored.*

***Keywords****: energy community, useful model, legal changes, advocacy*

***JEL Codes:*** *K32, K33, L31, Q49, Z13*

## Introduction

Opportunities for energy cooperation in Bulgaria have existed since the fall of 2023, when amendments to the Energy Act were adopted, allowing for the creation of a "citizen energy community." In this paper we will apply the concept of an "energy citizen," who is an active member of an energy community. The types of energy sources for producing electricity in the energy community are unlimited, but in practice it is somewhat more difficult to organize such a cooperative for producing energy from thermal or nuclear power (Energy Act, 95-96, 2023).

The first attempts to create such communities in the country relied on renewable sources, most often photovoltaic panels. However, it turns out that according to the Renewable Energy Law, such associations can only deploy their renewable energy capacities in urban areas. This automatically excludes from the potential sources wind generators, which are required to be in non-urbanized areas. It is still a new topic for the Bulgarian society, but in other parts of Europe it is a regular practice. Usually it is a joint venture of active citizens who unite their social energy into a countable goal with a main result – energy independence (Lazdins, Mutule, Zalustiba, 2021).

It is not only a fairly new entrepreneurial field for civic action but also a source for developing new products and new forms of social innovations. In the Bulgarian cultural

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model it could be also a restart of some of the local networks of trust, especially in small and medium settlements, where usually people know each other and they can create new forms of local action, based on social capital and civic science. (Wuebben, Romero-Luis, Getrudix, 2020).

The study chronologically traces the process of launching and developing the pioneering energy communities in Bulgaria. Their progress is studied through participatory community observation in Burgas, and also by interviews with civic activists and participants in energy communities during thematic meetings and public forums. Field research was also conducted at the "Maritsa East" coal-based energy industrial site in the winter of 2024, in which local people were asked about energy communities, energy citizens, and social entrepreneurship.

**Development of energy communities in Bulgaria – brief overview**

The first officially launched energy community in Bulgaria is that in the Municipality of Gabrovo. It began to be implemented in practice after a decision by the Municipal council from 19.10.2023, few days after amendments to the Energy Act were adopted, which allow the creation of these new forms of business entities.

The necessary funds were collected within two months, ten days before the deadline of an open call proceeded until 31.01.2024. Photovoltaics panels have been installed at the regional landfill for non-hazardous waste, which had started to produce electricity from mid-April 2024. The community's business plan envisages it operating for 10 years, with an estimated return on investment of 22% for this period. The contribution of every single member can range from 500 up to 5 000 BGN, with the total amount being 163 000 BGN, or approximately 83 340 EU. Each member has one vote in the general meeting of the community, no matter of the size of their shareholding. (Gabrovo municipality, 2024)

The "Gabrovo model" of energy community has been copied in the Burgas municipality, where the facilities were planned to be installed on the roof of the newly built swimming pool. The power was planned to be four times greater, and the funds were collected after two postponements of the invitation deadline by one month each. At the end of October 2024, the municipal energy efficiency structure stopped attracting partners. The installation's launch date was planned for the summer of 2025, and the expected return on investment is up to 30% over next ten years. In the middle of August 2025 the installation process was finished, 576 photovoltaic panels with a total capacity of 253.44 kW were installed on the roof of the building, connected to three solar inverters (2x100 kW and 1x50 kW), with a total capacity of 250 kW. The system functioned flawlessly during the several days of testing. (Burgas municipality, 2024)

At the initiative of the Municipality of Burgas, an improvement was made to the initial project. Instead of the planned additional 170 kW to be installed on the roof of the swimming pool, the second leg of the installation will be implemented in the form of a "solar canopy" above part of the parking lot. This solution will provide additional comfort for visitors

through shading, while generating energy for the pool and possibly charging stations for e-mobility. The visibility of the panels will help to promote the idea of self-generation and the viability of energy communities. The decision-making process for these changes wasn't discussed with the shareholders, who were just informed by e-mail postfactum.

In February 2025, an informational meeting for interested representatives of municipal administrations was held in Gabrovo, organized by Greenpeace Bulgaria. At the meeting, the hosts from the city's energy community shared details of their activities. During the meeting, the executive director of Gabrovo Energy Community Todor Popov, who is also working as a chief of the law directorate at the Municipality, spoke about the experience gained so far, emphasizing the problematic moments. As such fact that emerged is the state subsidy for industrial electricity, which was introduced as an anti-crisis measure upon overtaking the Covid-19 pandemic restrictions, but was not canceled until the end of 2024, which effectively stops the desire to build energy communities because it distorts the free market of energy and their business model cannot be accurately planned.

Despite the shared difficulties, a lively interest emerged among the participants in the meeting, with similar new communities already being planned in Sofia, Pazardzhik, Smolyan, as well as in Gabrovo, where at that time a second one was being prepared, which was planned to supply electricity to the bus depot in the city for providing self-efficient and independent e-mobility. At the meeting was also announced that the Energy and Water Regulatory Commission (EWRC) still does not pay any attention to the existence of these business entities in the country, probably due to the presence of only one that produces electricity by the spring of 2025.

Meanwhile a second energy community in Municipality of Gabrovo is starting to gain momentum after its formal entry into the Commercial Register on first day of July, 2025. In the fall of the same year, the physical installation of the system is planned to be ready to operate. Like the other two energy communities, the operating model is identical - according to the Obligations and Contracts Act, it is an unincorporated civil society, created by a contract between two or more people which unite their activities and achieve a common goal, i.e. to carry out joint venture. This type of unincorporated business entity is regulated by the Obligations and Contracts Act (OCC) (Gabrovo municipality, 2025).

Greenpeace Bulgaria is actively working to create a suitable environment for energy communities in the country. It organized training for municipal employees on the topic called "Energy Espresso". It was held online in the end of 2024, which was an opportunity for me to be invited to the meeting in Gabrovo as one of the participated experts. The next training course is planned for the end of 2025 (Greenpeace Bulgaria, 2024).

I was surveying the same topic as a part of research in the "Maritsa East" region in December 2024, where I specifically asked each respondent about their knowledge in this area. A general ignorance and a lack of formed opinion emerged. I sum up the methodology and conclusions from the field research in a paper at Kairos magazine of Philosophy department of Plovdiv University. (Gavrailov, 2025) .

Two months later, a round table discussion on energy efficiency was held in Stara Zagora in the end of January 2025, where the possibility for building an energy community in a housing cooperative was also discussed. Allegedly the topic was becoming part of the social agenda. At the beginning of summer of 2025, a conference for energy communities was held in Stara Zagora, organized by the Chamber of the energy communities in Bulgaria, which was invented meanwhile by experts from the Bulgarian energy and mining forum (Stara Zagora municipality, 2025).

During the field research in the winter of 2024, only in Dimitrovgrad did we come across a find on the topic - representatives of the civic initiative "Breathe Dimitrovgrad" admitted that they had explored opportunities for building an energy community in partnership with the municipality in a local school building. This was also confirmed by the chief architect of the municipality, who shared that a similar conceptual project was being carried out, which did not exclude the possibility of placing photovoltaic panels for the eventual energy community on the roofs of social clubs for retired citizens.

During the meeting in Gabrovo in February 2025, our host Todor Popov shared that he had already been sought out for consultation from Stara Zagora by two independent groups - the municipality through a representative of the team of the Agency for Regional Economic Development (ARED) and a group of citizens who wish to implement a community in the block of flats they live in. It is an interesting case how this topic will be developed in the center of coal based energy site “Maritsa East”.

From other media publications and different informal contacts, I extracted information about energy community planning in Belozem, Kazanlak, Samokov and Ruse, which still have not been implemented for one reason or another. All this suggests a gradual emergence of more widespread interest in this topic, which also assumes its actual development soon.

**Legal framework and its formal limitations**

Despite the possibilities specified in the legislation, in practice there are formal limitations that still hinder the process of democratizing citizen participation in the transition to low-carbon energy. A similar example is Regulation No. 6, which we will discuss later. These restrictions are the subject of advocacy attacks by various environmental organizations, and members of Parliament actively seek opportunities to ease the currently existing legislation.

A question was asked during parliamentary control to the Minister of Energy Zhecho Stankov on January 31, 2025. The minister's answers contained important information about the plans of state institutions to introduce legal changes that would facilitate the connection of energy citizens and energy communities to the electricity grid. This also included the creation of a regulatory period of one to three months for issuing a building permit for the construction of a new installation, varying of its capacity, and in the absence of a ruling by the chief architect of the respective municipality, it will be considered issued. Within the framework of the response received, it also becomes clear that the EWRC issued an

ordinance for connecting facilities to the electricity grid on March 28, 2024, which, however, does not mention explicit relief for energy citizens or energy communities, which, along to the commission, is not urgent (National assembly of Bulgaria, 2025).

Here is the proper moment to clarify again that this paper uses the term "energy citizen" as an active participant in an energy community, while the legislation in Bulgaria uses the term "prosumer", which means an active customer who simultaneously performs two roles - producer and consumer of electrical energy. As a summary of everything said so far, it can be concluded that the institutions from which legislative initiatives for changes that would ease the burden on individual consumers of their own energy are the Ministry of Regional Development and Energy and EWRC.

**Affiliation of the Bulgarian state in the creation of energy communities**

In March 2025, at an event at the Council of Ministers, was announced that is planned to "build up the largest energy community in Europe". This will eventually happen through financing from the Bulgarian Development Bank (BDB), and the Electricity System Operator (ESO) will build photovoltaic installations on municipal and company buildings and parking lots (Ministry of energy of Bulgaria, 2025).

These plans have sparked a backlash from non-governmental organizations (NGOs) that are actively involved in the creation of energy communities. Main objection comes from the philosophy of these partnerships, where "according to the Directive on the Promotion of the Use of Energy from Renewable Sources (2018/2001), transcribed verbatim into Bulgarian legislation, the renewable energy community should be based on several basic principles:

- accessibility for all users to participate in communities including low-income households and vulnerable customers

- is based on open and voluntary participation, is independent and is effectively controlled by its shareholders, partners or members

- has a primary objective of providing its shareholders, partners or members or the areas in which it operates with environmental, economic or social benefits rather than financial ones". (Climate coalition, 2025)

Here we can point out the seven principles of the International Cooperative Alliance as an argument for such a reaction, which are considered "the gold standard" in the creation and management of energy communities and which have been adopted by the largest professional organization - the European Federation of Energy Cooperatives (REScoop):

"1. Voluntary and open membership.

2. Democratic control of members.

3. Economic participation through direct ownership.

4. Autonomy and independence.

5. Education, theoretical and practical support.

6. Cooperation between cooperatives.

7. Concern for the community" (Rescoop, 2025) .

NGOs objections admitted the development of renewable energy capacities on the roofs of municipal and corporate buildings as a positive step towards decarbonization and energy efficiency, the initiative, presented as an "energy community", does not meet the basic legal and principled criteria for such. Elements such as open and voluntary membership, participation of citizens, especially vulnerable groups and low-income households, democratic governance, direct ownership by participants, and social focus of benefits were missing.

NGOs argued that although the law explicitly provides for the right of energy communities to share the electricity produced among their members, this right remains unenforceable in practice due to the lack of relevant provisions in Regulation No. 6 (EWRC, 2024).

Additionally, the absence of any relief in terms of network charges for intra-community sharing renders the model itself meaningless, as transmission costs remain disproportionately high and make sharing economically inefficient. It is these barriers that are identified by the Agency for Sustainable Energy Development (ASED) as one of the biggest challenges to the development of energy communities in Bulgaria (ASED, 2025).

**EU law on energy communities**

Citizen and NGOs participation in decision-making processes related to renewable energy projects is a fundamental element of the principles of good governance, sustainable development and European Union law. Article 15d of Directive (EU) 2023/2413 explicitly requires Member States to ensure public participation in the procedures for the preparation and adoption of plans for the accelerated implementation of renewable energy, as well as to promote public acceptance of these projects through the direct or indirect participation of local communities. This obligation binds the government to specific actions to ensure transparency, access to information and create mechanisms for involving citizens in the planning and implementation processes of renewable energy sources (RES) projects (European Commission, 2023).

Currently in Bulgarian there are no legislative or regulatory acts that regulate how this participation will be implemented - whether through advisory councils, public discussions, mechanisms for financial or cooperative engagement of local communities, or in another way. The lack of such mechanisms introduces ambiguity and creates conditions for conflicts between investors and the population, especially in sensitive territories with high ecological, cultural or social significance.

The development of different types of renewable energy sources (RES) should be supported by comprehensive plans for each individual segment to ensure simultaneous compliance with environmental and economic parameters, while focusing solely on wind energy would undermine diversification and the achievement of the country's strategic goals.

The mapping obligation under Article 15b of Directive 2023/2413 is a key tool for identifying relevant territories designated for the sustainable development of RES, and delaying in this process leads to uncertainty for investors and local communities.

The incomplete reflection of fundamental provisions of Directive 2023/2413 concerning systematic mapping and the creation of adequate plans for the accelerated deployment of renewable energy creates prerequisites for regulatory uncertainty and may compromise the timely adaptation of Bulgarian legislation to EU standards, which ultimately calls into question the overall sustainability of the renewable energy sector.

The principle of accelerated approval of renewable energy projects must be implemented in unison with the rule of law and the guarantee of the rights of affected parties, which is why it is essential that a clear and unambiguous mechanism preserving this balance be laid down in Bulgarian legislation.

Article 16(6) of Directive 2023/2413 states: "Member States shall ensure that, in the event of an administrative or judicial review in the context of a project for the development of a renewable energy plant or the connection of that plant to the grid and the assets necessary for the development of energy infrastructure networks, necessary for the integration of energy from renewable sources into the energy system, including appeals related to environmental aspects, the fastest administrative and judicial procedure available at the relevant national, regional and local level shall apply" **(**European Commission, 2023).

**Liberalization of electricity market – a tipping point for the development of energy communities**

In all the interviews on the topic of the development of energy communities in Bulgaria, I specifically asked the question about the liberalization of the electricity market for households. All respondents agreed that it is the current situation in a regulated market that hinders the development of energy entrepreneurship through communities of energy citizens. During interviews with experts in the spring of 2025, various forecasts were made for the introduction of liberalization, with the horizon being between July 1, 2025, and the end of year 2026.

The National Assembly of Bulgaria adopted amendments to the Energy Act, according to which the liberalization of the electricity market for household consumers is postponed for an indefinite period. However, from July 1, 2025, households had switched to the free market and will be compensated under a new scheme guaranteed by the state. The EWRC will also play a role there, setting monthly compensation limits for household consumers. This is seen as a protective measure against potentially high prices on the free electricity market. In practice, however, this hybrid state can continue indefinitely, which in turn will not encourage citizens to band together for producing cheaper electricity (Greenpeace Bulgaria, 2025).

From the perspective of the development of civil society in Bulgaria, strengthening the element of "energy communities" in the economic life of the country will lead to long-

term systemic benefits in several areas. There will be a democratization of participation in energy production, stronger local communities and cheaper electricity for their members. The benefits will also be transferred to municipalities, which will have lower electricity costs for public buildings, greater transparency in decision-making, which will mean more citizens' participation in local self-government.

The energy sector in Bulgaria is currently a highly centralized system with a huge share of state ownership, which suggests that there are forces that would not tolerate citizen participation and democratization, because this would lead to a change in the current status quo. There are several scientific studies in this direction, which reveal the network structures, dependencies and ties in the energy sector, with the key participants in this network having no interest in its democratization (Tchalakov, Hristov, Mitev, 2011).

My predictions for this process are that despite the new legal framework, which limits the mass entry of energy communities around the country, at least a few more new entities probably will start to work by the end of 2026. And most of them will be probably with the same construction as the first three - with vital participation of a municipality. When and how will be constructed entirely citizen-based energy communities, without shareholders from national or local authorities is a difficult for prediction.

I will outline the hypothesis for possible development of energy communities in cultural community centers, also known as “Chitalishte”, which could also be registered as social enterprises. This hypothesis suggests using the currently existing network of cultural community centers in the country for the mass deployment of entrepreneurial activity, which is based on the social capital in local communities - the trust between the community center members. There should be at least 50 members in rural areas and 150 members in urban areas, in order to have a fully working “Chitalishte”.

According to the Law on Enterprises in the Social and Solidarity Economy adopted in 2019, every community center is an eligible participant in the social economy and could register as a social enterprise. There is a complete overlap between the principles of functioning of an energy community and those of a social enterprise. Community cultural centers use industrial electricity, which further increases their maintenance costs. The possibility of having own sources of electricity, generated through a social enterprise based on the energy community model, is permissible from the Bulgarian legislation.

I tested this hypothesis among real community center activists in the “Maritsa East” region. The interviews absolutely confirmed the lack of a formed opinion or in-depth knowledge about these opportunities. If the energy market is gradually normalized, subsidies for businesses are removed, and the market for household consumers is truly liberalized, I assume that there will be a more widespread desire for energy entrepreneurship among community center activists.

It might be a good option for a new entrepreneurial field for civic action, especially in small and medium size settlements, where usually we have a shrinking situation. New forms of capitalization of the trust between local people can improve the energy

independence, like the hypothesis with the cultural centers, known as “Chitalishte”. With more than 3000 active cultural centers around the country it might be a great potential for new forms of civic action in energy communities. There are all the necessary prerequisites, just somebody should first pull the trigger and show how it might be happen. I have already observed how newly settled urban people are reviving local rural communities in searching for their rural dream. But it was in a post pandemic context, few years before the actual start of the energy communities in Bulgaria (Gavrailov, 2022).

**Conclusions**

The development of energy communities in Bulgaria is just starting as a process. Allegedly they will be a significant part of the energy mix of the country, especially after the eventual closing of the coal based thermal centrals and liberalization of the electricity market, which might be considered as turning points for this scenario. We already have a parallel experience from Greece, where the citizens' energy communities are more than 200 and they flourished after the final closure of the coal based energy plants. It is a good point that the philosophical basis of the energy communities is similar to the management of cooperatives and in the national contexts the cultural community centers (“Chitalishte”) as well. All these features are giving opportunities for mutual development of the enterprises, based on the social capital and flexible appliance of the still restrictive legislation in Bulgaria. It is still not a social fact, but very soon it might be a good option for developing a new social enterprise at Chitalishte, which produces green energy for covering its own needs, and it is structured as an energy community. The near future will show us if this hypothesis is possible.

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# IMPORTANCE OF COOPERATIVES IN CHINA'S ECONOMY: WHAT CHINESE ECONOMISTS SAY

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**Abstract**

*Undoubtedly, cooperatives have their own place and importance in a developing economy. They are often considered more compatible with the ownership forms in a socialist economy. Since China's centralized economic system follows its own way of development, lots of conventional approaches have been adopted and applied in a specific perspective to create efficient solutions for building a specific socialist economy. Thus, the present paper is intended to make popular the place, role, and importance of the supply and marketing cooperatives that are usable in China's economy. The paper presents opinions and views of domestic Chinese economists published only in Chinese. In most cases, the economists with the deepest knowledge of a national economy publish their studies in their own language for wider domestic audience. This treasure of thoughts should not be left hidden for curious readers abroad.*

**Keywords**: *supply and marketing cooperatives; planned economy; economic reforms*

**JEL Codes**: *P13; Q13*

## Introduction

International Cooperative Alliance understands cooperatives as kind of enterprises in which people participate voluntarily and have common ownership. These enterprises are managed in a democratic manner and are established to meet common economic, social or cultural needs of their members (Wikipedia). Satisfying this understanding, cooperative form of economic activity is popular in China for above century. It's enough indicative of their importance the decision of the communist party to establish a special institution to observe the work of the cooperatives in 1949. In this period, agricultural supply and marketing cooperatives become popular in rural areas of China. Thus, the present paper is intended to make popular the place, role, and importance of this kind of cooperatives that are usable in China's economy.

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The popular Agricultural supply and marketing cooperatives are written by few Chinese characters - 供销合作社 or, in short, 供销社. Their activity is mainly focused on supplying, buying and sales of agricultural products. Established by grassroots people in rural areas, these cooperatives are defined as commercial organizations of their members. Their prior task is not to make profits. Supply and marketing cooperatives are established by farmers associated on a voluntary basis and supported by government at very low local administrative level. Some authors assert that establishing and initial arranging of them is sponsored by the state (China News Network, 中国新闻网, 2022). Inevitably, government's assistance seems to play a crucial role for surviving of these cooperatives since individual farmers would hardly achieve high rates of productivity, most of the agriculture products have low value added, and what is most important – making market profits is not a prior task for these cooperatives. Thus, for long periods supply and marketing cooperatives keep negative financial results (Hong Lefeng, 洪乐风, 2022).

The historical development of these cooperatives seems to be marked by oscillating between rises and declining the interest on their business. And the chronic lower profits and losses are not the main reason for it. As implied by literature, the institutional and economic reforms in China are directly affecting the importance of the role the cooperatives play (Chake, 察客, 2022; Hong Lefeng, 洪乐风, 2022). The economic reforms in 1953 envisaged starting a new system of uniform purchases and distribution of some raw agricultural products. It is nothing else but introducing government economic planning and rationing into agricultural products distribution, i.e. putting significant food supplies and rural economies at all under government's control (Chake,察客, 2022). This small step toward achieving socialist economy seemed to entail new attention to the supply and marketing cooperatives. As pointed out in the article the Lianhe Zaobao published, despite the improved efficiency, centrally planned system have a set of drawbacks, as well (Chake,察客, 2022). Thus, the supply and marketing cooperatives became a focal point of lots of critics such as critics for having monopoly of market segments, poor quality of servicing, permanent deficits of products, and keeping limited range of products supplied. These critics were overcome with the new market oriented policies and reforms to opening up. As expected, "supply and marketing cooperatives lost their monopoly and were gradually withdrawn from the main scene of the national economy" (Chake,察客, 2022). Moreover, they gradually disappeared from the media news and publications and nobody spoke about them for decades (Hong Lefeng,洪乐风, 2022).

Achieved their peak of importance during the years of strict central planning and then becoming criticized for acquiring the drawbacks of the panning, their popularity plummeted with starting market policies and economic opening. Market-based suppliers and traders invaded into their niches and successfully replaced supply and marketing cooperatives.

Declined but not disappeared – these cooperatives gradually transformed into a market oriented players and reset their regime of working to be adequate to the new market conditions (Chake,察客, 2022). Thus, recent decades supply and marketing cooperatives enjoy reemerging described with the following beautiful Chinese idiom "Re-emergence" "重出江湖" (China News Network, 中国新闻网, 2022). Along with the internal transformations, there are few institutional reforms and changes in the regulation related to their working. Commentators on the report of the 20th National Congress of the Communist Party of China summarizes the following „from operational and organizational innovation to service innovation, new systems and mechanisms aligning with cooperative principles and a market-oriented economy are fueling their renewed popularity through self-revolution"( Hong Lefeng,洪乐风, 2022). All these things facilitate the cooperatives to have far better working and economic performance.

The reforms traced the way for better working for the cooperatives were a continuous process. It seems to be successfully accomplished in 1999. Of course, there were many significant changes in the regulation and laws on the supply and marketing cooperatives after that year but the keyword is "successfully". We can agree that successful accomplishment of reforms that are intended to solve problem of poor performance is achieved when the economic entities regulated get a solution that make them profitable. In that year, the State Council announced a document named "Notice on Solving Several Current Outstanding Problems of Supply and Marketing Cooperatives" whose purpose is to overcome the losses and turn them into profits (Wikipedia; China News Network, 中国新闻网, 2022). The result does not come late. Yet in 2000, the entire system became profitable. Moreover, achieving profits seems not to be a random accident. With the financial result reported in 2000 began a continuous positive trend to growth of the profits. Thus, consolidated data on the supply and marketing cooperatives shows these cooperatives achieved total profits of 1.377 billion yuan in 2000, 1.639 billion yuan in 2001, and 2.86 billion yuan in 2002 (China News Network, 中国新闻网, 2022). What is more important, the total amount of the sales by the cooperatives keeps a steady rate of annual growth equals to 18.9 percent. As pointed, the entire system of supply and marketing cooperatives achieved total amount of sales of 6.26 trillion yuan that's really impressive (China News Network, 中国新闻网, 2022). The indicators of positive development are not only financial ones. Over the last two decades thousands of grassroots supply and marketing cooperatives have been restored and rebuilt. The number of cooperative members has tripled only in one province (Chake, 察客, 2022).

In 2013, the government decided on another turning point of the reforms supporting the work of supply and marketing cooperatives that is the removing of the last restrictions for them to "play to their important role in agricultural social services, and creating opportunities for their reform, development, transformation and upgrading" (Wikipedia).

Reforms to wide range of their business and digitalization have taken place in 2021 under the document entitled "Opinions on Strengthening the Construction of County-level Commercial Systems to Promote Rural Consumption". Cooperatives are envisaged to have a leading role in the process of "transforming traditional rural commercial outlets, promoting digitalization and chain transformation of enterprises, building and renovating production areas, farmers' markets, and vegetable markets, improving the backbone network for agricultural product distribution, developing county-village logistics and distribution, and strengthening the long-term mechanism for connecting production and marketing" (China News Network, 中国新闻网, 2022).

## Conclusion

In conclusion we can agree that supply and marketing cooperatives have a long history of existence and evolution in China. They exist in rural areas far before planned economy and successfully enters in a planned regime of working. They lost their popularity while resetting their organization of working to be adequate to the new market competitions. Internal changes and adequate reforms brought them to a new life. Now they enjoy reemerging. Their importance and popularity were restored, their business and opportunities enhanced. Finally, Xi Jinping appreciates establishing cooperatives and joining new members as related with achieving "common prosperity" "共同富裕" (Radio Free Asia, 自由亚洲电台, 2022).

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# SCIENTIFIC, TECHNICAL AND INDUSTRIAL COOPERATION AND COOPERATION BETWEEN THE COUNTRIES OF THE EUROPEAN UNION

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***Abstract***

*The development of cooperative scientific, technical and production relations between the member states of the European Union is an objective necessity arising from the tasks of increasing labor productivity and ensuring the competitiveness of national economies. The changes taking place in them require new approaches and actions in the economy, the choice of priorities and strategies for the development of international business. Moving forward along the path of scientific and technical progress is accompanied by the solution of numerous complex tasks, which determine the need to unite the efforts and resources of the state and the subjects of economic activity.*

***Keywords****: science, technology, technological policy, innovation infrastructure, industrial leadership, innovation process, European framework programs, international cooperation*

***JEL Codes: L28; O14; O19***

## Introduction

Scientific, technical and industrial cooperation between the countries of the European Union (EU) is one of the main drivers of economic development and innovation in Europe. In the context of global competition, technological progress and digital transformation, EU Member States are aware of the need to pool their scientific potential, industrial resources and research infrastructures. This joint activity aims to strengthen the competitiveness of the European economy, promote sustainable development and create conditions for greater social and regional cohesion.

This study aims to analyze the forms, mechanisms and results of scientific, technical and industrial cooperation between the EU countries, as well as to propose recommendations for its improvement.

## Research methodology

The study was conducted using the following methods:

1. Documentary analysis – review of official documents of the European Commission, the European Parliament and the EU Council related to research and innovation policy (e.g. Horizon Europe, Digital Europe, the European Green Deal).

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2. Comparative analysis – assessment of different models of cooperation between individual Member States and industrial sectors.

3. Statistical methods – use of data from Eurostat, OECD and the European Innovation Agency to calculate trends in scientific investments and technological achievements.

4. Case study analysis – examination of specific examples of successful European projects (such as “Galileo”, “ITER”, “Airbus”, “EUREKA”, etc.).

**Analysis and results**

1. Forms of cooperation

Scientific and technical cooperation within the EU is implemented through:

• Joint programmes and framework projects – for example, Horizon Europe funds scientific research in priority areas such as artificial intelligence, biotechnology and climate change.

• Transnational scientific consortia – unite universities, research centres and enterprises from different countries.

• European technology platforms and clusters – promote cooperation between industry, science and administration.

2. Benefits of cooperation

• Increasing the competitiveness of the European economy.

• Optimization of resources through shared infrastructure and joint research projects.

• Transfer of knowledge and technology between academia and industry.

• Improving regional development and reducing disparities between more and less developed regions.

Challenges

• Uneven participation of Member States in scientific programs.

• Insufficient coordination between national and European priorities.

• Bureaucratic obstacles in accessing funding.

• Shortage of highly qualified personnel in some regions.

Currently, international cooperation in the economic sphere is becoming increasingly unstable, sometimes contradictory and difficult to predict. However, there are fundamental regularities that have already determined the main vector for the transformation of the world economy. The basis of any economic system is the productive forces, which in recent decades have become significantly more complex both in their content and structure, and in the results achieved by them.

The changes taking place in them require new approaches and actions in the economy, the choice of priorities and strategies for the development of international business. Moving forward along the path of scientific and technological progress is accompanied by the solution of numerous complex tasks that necessitate the unification of the efforts and resources of the state and the subjects of economic activity themselves. In general, it is in the interests of states to establish mutually beneficial relations in the field of scientific

research and design work, as well as in the development of modern science-intensive industries and the transition to commercialization of the results obtained.

The development of cooperative scientific, technical and production ties between the Member States of the European Union is an objective necessity, proceeding from the tasks of increasing labor productivity and ensuring the competitiveness of national economies.

In 2015, the European Union approved the main directions of industrial cooperation on an EU scale and set the following goals:

• implementation of innovative modernization of industrial complexes;

• construction of new value-added chains for the production of competitive industrial products;

• phased formation of a joint innovation infrastructure, including the Eurasian technology transfer network, technological platforms, clusters, engineering centers, digital transformation of the countries' industry, which will facilitate the transition to the digital economy (Main directions of industrial cooperation within the Eurasian Union. , (accessed 01.01.2023).)

Economic interaction organized within the EU is also aimed at reducing excessive dependence on imports of industrial products; implementation of a policy of import substitution and localization of production; facilitating accessibility to financial resources for organizations; removal of barriers on the way of movement of industrial goods to the markets of the union countries and third countries; use of modern methods of organizational and economic management.

These numerous tasks require the unification of efforts and taking of specific measures not only at the macro level, but also by the entrepreneurial structures, without the active participation of which the achievement of even the most complex goals is impossible.

It is noted that at the given moment within the EU, sufficiently coordinated and consistent actions are not being taken to implement complex tasks aimed at the modernization of industry, the creation of new technological contributions, the formation of modern institutes and infrastructure of the innovation economy. Organizational issues are mainly resolved, intentions are declared to take urgent measures that are not embodied in specific cases.

The historical conditions, starting positions, level of development of the economy, science, technologies in the EU countries have quite a few differences. However, there are common patterns and factors motivating the countries to intensify cooperative cooperation in the field of fundamental research, industrial relations, production of new goods and services. The main goal of the EU countries is to build effective partnership relations between the states, business and science to increase labor productivity and create modern competitive economies.

The formation of a unified scientific and technological policy of European countries and its adaptation to realities

The change in the foundations of the scientific and technological policy of European countries was caused by a number of reasons. In the second half of the 20th century, Europe's lagging behind the USA and Japan in the field of science, technology, and management methods was clearly noticeable. The isolation of education and the scientific sphere from the objective needs in the development of productive forces, the economy as a whole, and the interests of business has led to a decrease in the competitiveness of European companies in international markets and the significance of Europe in the world economy.

Other important factors stimulating the revision of the traditional and fragmented industrial and scientific and technological policy are the formation of the common market for goods, services, and capital in the EU and the expansion of economic relations with other countries. In this regard, the need for coordination of R&D, the development of common principles for their conduct and assessment, the development of industrial standards, technical norms, and the certification of production for the implementation of effective trade and investment transactions in the international arena is growing.

In the course of comprehensive discussions at the political level and in the EU expert community, a strategy was approved aimed at forming a single scientific and technological policy, developing mutually beneficial production links between companies and enterprises from different countries.

Since 1983, the EU has been adopting framework programs (Framework Programme), each of which has its own specifics. Thus, in the seventh market program Horizon-2000 (Program — Horizon 2020) quite ambitious goals have been set, aimed at strengthening the scientific positions of the EU among the leading countries in the field of scientific research, achieving industrial leadership, conducting a policy in accordance with the social demands of society.

In addition to the adoption of the framework programs, in 1985 the International Governmental Organization for the Coordination of Scientific Research and Experimental Design Work at the Pan-European Level «Eureka» (European Research Coordination Agency, later — the «Eureka» Program) was established. Its members are 41 countries and the European Commission (hereinafter - EC) - the executive body of the EU. The Republic of Korea, Canada, South Africa, Israel, which have national information centers, participate in the Program as observers.

The objectives of the Eureka Program are to ensure the independence of European countries in their technological development; to create conditions for coordination between the educational sphere, scientific research, the real sector of the economy and the innovative activity of business; to promote international cooperation in the field of R&D and the development of new markets for high-tech products; to increase the competitiveness and sustainability of the European economy (Impact assessment of EurekaNetwork projects and cluster projects. Main findings and recommendations, Commission by Eureka secretariat, 2016. , 2016. (accessed 05.01.2022).).

The Eureka Programme has established priorities for socio-economic development in the following sectors:

- electronics, telecommunications and information and computer technologies;
- energy and energy saving;
- new materials and industrial technologies;
- transport and logistics;
- biotechnology and medicine;
- food industry;
- agriculture and marine resources;
- measurements and standards;
- "green" technologies and environmental protection.

According to the fundamental provisions of the Eureka Programme, each project must involve at least two partners representing two countries, one of which must be a European partner. Work on the project is organized on the basis of the distribution of financial responsibilities (Eureka regulatory corpus ., (accessed 01/17/2022)). The participants in the Eureka Programme must follow the following principles in their activities:

- "open doors";
- free international competitions;
- initiative is welcomed and manifested "from below".

Business representatives show great interest in the Eureka Programme, which is illustrated by the following indicators: 68% of project participants are business community, of which 26% are large business structures, 42% are small and medium-sized companies, 5% are research institutes, 14% are universities and 3% are other participants (A flexible network for cooperation. , 2016).

The highest governing body of the Eureka Programme is the Ministerial Conference, which is held once every two years. In the period between conferences, recommendations on the strategy for the development of science and technology policy are developed by the Inter-Parliamentary Conference.

In the period between conferences, the Eureka Programme is managed by a group of senior representatives (one from each country), who make decisions on the management of the Programme and organizational issues.

An important role is played by the network of national project coordinators, who determine the correspondence of the initiative request between the objectives and main directions of the Eureka Programme. National coordinators take part in the development and implementation of projects, provide assistance in the search for financial resources and the commercialization of the results of the work, disseminate information about the project through the international coordination network to attract participants from other countries (Eurika-Regulatory-Corpus . , 2017).

According to the Eureka Program, four types of projects operate: individual (Network projects), Eurostars, Clusters and Umbrellas, which differ in the nature of their activities, the composition of participants, and the sources of funding.

The annual report Innovation AcrossBorders (2016) notes that in 2015, 89 projects received funding of 101 million euros on the basis of public-private partnerships. More than half (65%) of the participants in these projects are small and medium-sized businesses from Spain, Turkey, Canada, South Korea, and Israel (Innovation across borders - the eurekaAnnual Report Eurika secretariat. , 2016).

In accordance with the theme of the Eureka Program, a number of clusters have been created: ACQUEAU (water technologies), CATRENE (nanoelectronics), Celtic-Plus (telecommunications, new media and the Internet), EUROGIA2020 (low-carbon technologies in energy),

EURIPIDES (miniaturization, automation, energy consumption reduction using micro- and nanoelectronics), ITEA 3 (software), METALLURGY EUROPE and PENTA (metallurgy). According to the annual report, several dozen projects are being implemented within the clusters. In this case, the creation of clusters is considered as a long-term strategic cooperation, which brings a synergistic effect.

However, the analysis of cluster projects shows that the results of the activities of the participating enterprises are not always embodied in concrete cases, since this requires at least 6 years. Usually, this is caused by the fact that some time is needed to create production, develop a market strategy, organize management (Impact-Assessment-Eureka-Network-Projects-and-Cluster-Projects-main-finding-and-recommendations. , 2017). The participation of small and large companies in these projects is approximately equal and is 36 and 33%, respectively, and the share of universities and institutes is 30%.

The projects, which have been called "umbrella", are distinguished by the fact that they are united within specific areas, but each direction has its own goals and significance. They are developed, for example, in such areas as tourism, agriculture, and the creation of new materials in industrial production.

“Umbrella” projects facilitate the process of initiating the application, selecting partners and are well financed. For example, a project to create a lightweight roof for cars of the companies Volvo and Volkswagen (Impact-Assessment-Eureka-Network-Projects-and-Cluster-Projects-main-finding-and-recommendations. , 2017) has been successfully implemented.

Work is underway to attract small and medium-sized businesses to participate in R&D. In particular, such a stimulating factor as the possibility of the company’s products being released under the “Eureka” brand on state markets and facilitating access to government orders is being used.

One of the important problems for business remains the search for and attraction of investments. For this purpose, a pilot program, the Eureka High Tech Investment Programme, has been initiated, within the framework of which, in cooperation with

European business angels and other partners, measures have been developed to facilitate the receipt of financial resources for small and medium-sized companies. For example, trainings, webinars, meetings, symposiums, seminars, exhibitions are regularly organized, which give companies the opportunity to declare themselves and attract the attention of investors.

Such methods of seeking investment have proven successful for the Spanish software company Vilynx and the Swedish company AscatronAB, which develops technologies in the field of energy efficiency. Thanks to this pilot program, 137 companies have received investment support (Impact-Assessment-Eureka-Network-Projects-and-Cluster-Projects-main-finding-and-recommendations. , 2017).

Over the 30 years of the Eureka Program, assistance has been provided to 6,000 projects, and the amount of investment from public and private sources has been 37 billion euros (Eureka innovation across borders, Going global, smartly. , 2016).

Despite the interest of European companies in the Eureka Program and the good indicators of commercialization, some problems could not be avoided. Thus, many projects do not receive large-scale distribution throughout Europe. Private companies, as a rule, initiate the topic of research based on their commercial interests, not always taking into account the capabilities and priorities of other business entities and state interests.

Another problem is the complexity of overcoming the fragmented approach, duplication in research and innovation activities, which creates obstacles to the coordination of a unified scientific, technical and financial policy.

The European program is periodically adjusted and updated. For this purpose, a development strategy has been adopted, set out in the Roadmap for 2015-2020. The main goal is to create an avant-garde European platform for global scientific and production cooperation. It is proposed to use the variable geometry method, which envisages expanding interaction beyond the European Union on the basis of observing the flexible approach, voluntariness, and applying instrumental standards tested in the four types of projects.

The creation of European technical platforms (hereinafter - ETPs) and their emergence at the international level are conditioned by the need to expand the scope of activity, attract the maximum number of interested parties, and concentrate financial resources on the most important areas (European Technology Platforms-2020. At a glance, European parliament. , 2017). Important conditions for achieving positive results from the activity are maintaining the principles of fair competition, protecting intellectual property, and combining the tasks of fundamental science with the needs of business. Ultimately, favorable conditions are formed for companies that organize their business on the basis of innovations.

European traditions in public-private partnership are preserved, however, the main role continues to be played by private companies, enterprises, industrial concerns and associations, whose experience and knowledge help to implement a long-term and competitive strategy in accordance with market needs.

Thus, the European Biofuels Technology Platform was formed within the framework of the implementation of the strategic plan for the development of energy-intensive technologies in Europe, which covers the entire innovation process from the stage of scientific research, the production cycle and until the release of finished products on the bioenergy market. The development of biofuel production technologies will allow to increase its share in the consumption of all types of fuel resources to 10% by 2020.

This platform correlates with other European platforms that are oriented towards the development of pure chemistry, agriculture, and transport. On the one hand, this will allow for cost savings, and on the other hand, the intersection of interests and topics in fundamental research and their duplication is often noted (Biofuels in the European Union. , 2016).

The European Technology Platform for Sustainable Chemistry (European Technology Platform for Sustainable Chemistry achieve low carbon economy and alert signific and climate change) is aimed at reducing carbon emissions into the atmosphere and preventing serious climate change by reducing coal consumption.

Adapting the EU experience

EU countries differ from each other in many socio-economic, foreign economic and political parameters, where the initiators and conductors of scientific and technological undertakings have become the most developed countries (Germany, France).

The development of a coordinated scientific and technical policy requires knowledge of the starting positions: what is the state of the real sector of the economy; what goals are facing each country; on what issues of scientific and technical development can something in common or complementarity of national interests be found; on which priority areas of industrial and innovation policies should efforts and resources be concentrated. It is also important to analyze the cost-benefit ratio.

Based on the EU experience, it is important to develop a system of consistent interrelated actions, including mechanisms, tools, institutes, which will be activated both in national economies and at the level of integration education, while the decisions made from the point of view of forecast and analytical results.

The framework programs in Western European countries were initially focused on solving one of the complex jointly implemented tasks - conducting risky pre-commercial fundamental research, financed by centralized state sources. These works often had strategic importance and were not intended to go beyond the territory of the EU.

One of the most common problems is the search for financial resources. In this regard, European practice shows that funds are provided depending on the nature and significance of the project, the composition of the participants. Financing from the EU budget is carried out in the event that the participants in the project are European scientific centers, organizations. For projects formed on the basis of contractual obligations, resources are provided by national contractors, and in this case, co-financing from the EU budget is 50%. Another method is related to covering the costs of coordinating the work and obtaining

scientific and technical information, which is carried out by the EU. In some cases, these approaches may be violated.

In Europe, quite a few small innovative companies are actively attracted to participate in the Eureka Program. Small and medium-sized businesses with innovation potential form partnerships for small and short-term projects, creating a new product, technology or service in demand on the market. The financing of the R&D carried out is carried out 50% at the expense of the project participants, while none of the parties has the right to cover more than 75% of the total costs. The remaining funds come from state or other sources. This form of cooperation has the advantage that it contributes to the exchange of experience, knowledge, as well as the allocation of resources, know-how, the development of new markets, the division of risks, scaling and increasing the competitiveness of the business. An important place in scientific and innovative development belongs to the creation of technological platforms, which are considered as a tool for mixing in the industry of the EU member states global trends within the framework of the fourth industrial revolution through the creation of a new product, new technologies and a new organization of production.

The EU has established conditions, the observance of which will contribute to the formation of effective technological and production platforms. The starting points are the definition of the main goals and objectives; the order of formation (founders, members, decision-making, legal documents); the choice of forms of joint activity; expert assessment; coordination by the European Commission, etc. The need to study the experience of other countries in creating platforms, joint programs and projects, including those approved in European practice, has been repeatedly noted.

Many years of experience in implementing a coordinated European scientific and technical policy have shown that the key factors are the cultivation of entrepreneurial interest and initiative, the use of modern forms of management and financing of inter-company cooperation.

Proposals for specific projects are submitted on the basis of the "bottom-up" principle, by decision of the participants themselves, on a competitive basis, and are not directed by decisions "from above". Industrial companies or enterprises, research centers independently form working groups, coordinate the forms and methods of activity, distribute powers, management functions and financial responsibilities. Such an approach increases personal and collective responsibility and stimulates interest in achieving good and quick results.

An important role is played by the national coordinator or national coordination center - a structure that reflects the national specifics, is created and financed by the government, can have a centralized or decentralized nature. It would be appropriate to coordinate the main principles and directions in the activities of the national coordination centers and bring them to the level of a network coordination center of the EU.

**Conclusion and Recommendations**

Scientific, technical and industrial cooperation between the countries of the European Union is a key factor for the sustainable economic and social development of the continent. Thanks to joint efforts and integrated programmes, the EU has managed to establish itself as a global leader in a number of technological fields.

However, in order to guarantee long-term competitiveness, it is necessary to continue improving innovation policies, strengthen scientific integration and ensure wider participation of all Member States.

Cooperation and cooperation are not only a tool for economic growth, but also a symbol of European solidarity, common values and the pursuit of progress.

1. Strengthening funding for innovation and applied research, especially in small and medium-sized enterprises.

2. Facilitating access to funding programmes by simplifying administrative procedures.

3. Improving educational and scientific mobility by expanding initiatives such as Erasmus+ and Marie Sklodowska-Curie.

4. Creation of regional innovation hubs in less developed parts of the EU.

5. Promotion of public-private partnerships that connect academia with industry.

6. Digitalisation of scientific infrastructure for more efficient exchange of data and knowledge.

The EU member states are faced with complex tasks that require planned, coordinated and systematic actions, resource provision, attraction of professional staff and competent experts, and the main thing is the readiness to proceed to active actions. The use of best practices is becoming increasingly urgent in making and implementing complex decisions based on the general laws of development and national characteristics.

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# HUMAN RESOURCES MANAGEMENT IN COOPERATIVES

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***Abstract:***

*Human Resources Management (HRM) is a key factor in the success of any organization, including cooperatives. This study examines the main principles, strategies, specifics, and challenges of managing human capital within these structures. Effective human resources management is essential for the sustainable development of cooperatives and has a direct impact on improving employee satisfaction and motivation, as well as promoting social responsibility. Based on the research and analyses presented in this report, various challenges and trends are discussed regarding:*

*- Digitalization of HR processes in Bulgaria*

*- Globalization and workforce diversity*

*- Fair compensation and flexible working conditions*

*- Well-being and work-life balance*

*To ensure long-term stability and effectiveness of cooperatives, it is necessary to adopt an adaptive approach to Human resources management, as well as a global-local strategy—using global practices and policies to address all local issues.*

***Keywords:*** *Human resources management (HRM); HR processes; Strategy; Cooperatives; Management*

***JEL Codes:*** M11; M21

## Introduction

Cooperatives are a unique organizational form in the global economy uniting business objectives and social purpose. Democratic management and member control challenge prevailing management and labor relations models. Therefore, Human Resource Management in cooperatives should be subject to transparency, equity, and participation requirements. According to the International Co-operative Alliance, ICA (2007) a cooperative is: "An autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations, through a jointly owned and democratically controlled enterprise."

Furthermore, the ICA sets up seven cooperative principles that are of great importance:

1. Voluntary and open membership
2. Democratic member control

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3. Member economic participation

4. Autonomy and independence

5. Education, training and information

6. Cooperation among cooperatives

7. Concern for the community. (Do Cooperatives Improve the Well-being of the Individual?, Autumn 2011)

Human Resource Management (HRM) in cooperatives represents a progressive and ethically grounded approach to managing people. Unlike traditional enterprises that are primarily profit-driven and hierarchically structured, cooperatives are member-owned, democratically governed, and value-based organizations. This unique identity shapes every aspect of their operations—including how they manage human resources.

In cooperatives, HRM fulfills not merely a technical or administrative function. It is a strategic discipline that supports organizational excellence through the promotion of equity, participation, and community engagement. These principles are deeply embedded in the cooperative ethos and require HR systems that reflect and reinforce them. Every well-structured and successfully functioning company has its own strategy, traditions, goals and mission. The implementation of the above-mentioned things requires effective management and its existence is impossible without leadership, professional collegiality, good interpersonal relations and good management. (Kalaydzhieva, 2024).

This article focuses on the digitalization of HRM processes in Bulgaria, with particular emphasis on the introduction of unified electronic employment record and the preparation of Bulgaria's expected entry into the Eurozone on January 1st, 2026. On the one hand the changes related to electronic employment records are very important in all organizations in Bulgaria, including cooperatives. As of June 1st, 2025 all paper labour books have been replaced by electronic – part of the new Employment Register, which will be developed and maintained by the National Revenue Agency. After 1st June, new events are to be reported, as follows:

• Change in base salary;

• Change in annual paid leave;

• Change in working hours;

• Change in code under the Classification of Economic Activities;

• Receipt of a garnishment notice for child support or lifting of the garnishment;

• Payment of compensation upon termination of the employment due to retirement or illness;

• Entry into force of a court decision that: establishes the length of service/declares the dismissal unlawful/corrects the legal basis for termination.

In addition to the above, Bulgaria is the 21st EU Member State to adopt the Euro as its official currency on January 1st 2026. Bulgaria has met all four nominal convergence criteria – the price stability criterion, the criterion on public finances, the exchange rate criterion, and the long-term interest rate criterion. Entering the Eurozone will mark the final

step of Bulgaria's integration into the European Union and help strengthen the Bulgarian economy bringing benefits to its citizens, business and society in general. With only a few months left until the euro becomes official currency in Bulgaria, it is necessary for companies such as yours to successfully prepare for the Euro's adoption.

**HRM Principles in Cooperatives**

Human Resource Management in cooperatives is to have its foundations in their moral basis. The key elements are:

Democratic Participation: Workers are inclined to be involved in the creation of the procedures and policies. This principle is very important because once the workers are involved in the creation of their working policies and procedures, they are encouraged to engage in progressively greater work commitment.

Transparency: Open discussion of payment, performance, and business goals.

Equity and Fairness: Diverse staffing, equal payment, and anti-discrimination legislation.

Social Responsibility: HR practices that foster community well-being.

HRM in cooperatives is a moral endeavor as much as a managerial one. (Voight, 2023/09/12). Innovation is increasingly essential for the European economy, not only because of the results concerning economic and regional cohesion but also because it has the potential to put people first. Positioned in different business niches, entrepreneurs can use the expanding opportunities to simultaneously implement technological and non-technological (including social) innovations, thus contributing to compensating the skill gaps of different groups of persons in the labor market. (Bogdanova, 2022)

**Strategic HRM Approaches**

Strategic Human Resource Management (SHRM) in cooperatives represents a deliberate and value-driven approach to aligning human capital with the long-term objectives of the organization. Unlike conventional enterprises, cooperatives operate on principles of democratic governance, equity, and community solidarity. Therefore, SHRM in this context should not only support organizational performance and sustainability but also uphold and reinforce cooperative values. This involves integrating ethical considerations into workforce planning, talent development, and leadership cultivation, ensuring that HR practices contribute to both economic viability and social responsibility. The strategic role of HRM in cooperatives is thus dual in nature: it seeks to harmonize operational goals with human potential, while fostering a culture rooted in participation, fairness, and collective ownership. Purpose-driven work is a powerful retention tool in cooperatives, and by so doing, accentuate the motivational power of shared values. (Chali B. D., 2024)

**Cooperative HRM Challenges**

Digital transformation is fundamentally reshaping the landscape of HRM across the world. The need for digital systems seems inexhaustible, as they contribute to improvements in almost every area in terms of productivity, quality and (resource) efficiency of products and processes. The leap in development is so far-reaching that we can rightly speak of a 'digital revolution'. (Stavrova, 2021) The integration of advanced technologies – such as cloud-based HR platforms, artificial intelligence, and data analytics – has enabled organizations to streamline administrative processes, enhance decision-making, and improve employee engagement. However, in the context of cooperatives, this transformation presents a unique challenge: how to embrace digital innovation without undermining the foundational principles of democratic governance and member participation. Cooperatives are built on values such as transparency, equity, and collective decision-making. Therefore, the adoption of digital tools is to be approached with caution and intentionality. It is not simply a matter of efficiency or modernization; it is a question of preserving the cooperative identity while evolving technologically. For example, implementing electronic employment records or automated performance systems is supposed to be done in a way that ensures accessibility, protects member rights, and maintains participatory structures. The strategic task for HR professionals in cooperatives is to harmonize technological advancement with ethical and democratic imperatives. This involves selecting digital solutions that support inclusive communication, facilitate member involvement, and uphold data privacy and accountability. Ultimately, digitalization in cooperatives should not be viewed as a threat to democratic values, but as an opportunity to reinforce them through thoughtful and value-aligned innovation. Digital HRM is to be inclusive, ethical, and cooperative-aligned. (Kolev, 2023)

- Globalization and Workforce Diversity
  - As cooperatives expand beyond local and national boundaries, managing multicultural teams becomes not only relevant but also essential to their success. Globalization introduces a diverse workforce with varying cultural norms, communication styles, expectations, and values. For cooperatives – whose identity is rooted in democratic participation, equity, and solidarity – this diversity presents both opportunities and challenges.
  - On one hand, multicultural teams enrich cooperatives with broader perspectives, innovative problem-solving approaches, and deeper cultural sensitivity, which are vital for operating in international markets. On the other hand, differences in language, work ethics, and decision-making processes can lead to misunderstandings or friction if not managed thoughtfully.
  - Strategic Human Resource Management in global cooperatives must therefore prioritize cultural competence, inclusive leadership, and adaptive communication strategies. HR policies should be designed to respect local customs while reinforcing cooperative principles, ensuring that all members feel valued and heard regardless of their cultural

background. Training programs, conflict resolution mechanisms, and participatory governance models should be tailored to accommodate diversity while maintaining cohesion.

o Ultimately, the ability to manage multicultural teams effectively reflects a cooperative's commitment to its values in a global context. It requires intentional effort to harmonize diversity with unity, and to transform cultural differences into a source of strength and innovation. Globalization demands a rethinking of HRM through the lens of cultural empathy. (Edwards, 2011)

- Fair Compensation and Flexibility

Balancing ethical employment with financial sustainability is a central problem. Bulgaria has to implement the EU Pay Transparency Directive into national law by June 7th, 2026, to ensure equal pay for work of equal value and reduce the gender pay gap. The directive requires employers to provide pay transparency in job ads, prevent salary history requests, and allow employees to request payment information. Employers will also face mandatory gender pay gap reporting, starting with annual reports for companies over 250 employees from June 2027, and staggered deadlines for smaller firms. (Minzar, 2024) state, "Fairness in pay is not just economic – it's existential in cooperatives."

- Well-being and Work-Life Balance

The well-being of employees is a fundamental pillar of success in cooperative organizations. Unlike traditional enterprises that may prioritize profit maximization, cooperatives are inherently people-centered, guided by principles of solidarity, equity, and mutual support. In this context, employees' well-being is not viewed as a secondary concern or a means to an end, but as an essential component of the cooperative mission itself. Ensuring the physical, emotional, and professional well-being of employees contributes directly to organizational resilience, productivity, and cohesion. When individuals feel respected, supported, and meaningfully engaged in their work, they are more likely to contribute with commitment and creativity. In cooperatives, where democratic participation and shared ownership are core values, the well-being of employees also reinforces a sense of belonging and collective responsibility. Moreover, investing in well-being aligns with the long-term sustainability goals of cooperatives. It reduces turnover, fosters trust, and strengthens the social fabric of the organization. In this way, employee well-being is not only a moral imperative but also a strategic advantage – one that reflects the cooperative's commitment to human dignity and inclusive growth. Chung and Sparrow (2024) emphasize that "Well-being is not a perk – it's a principle."

**Future Trends in Cooperative HRM**

The future of Human Resource Management in cooperatives is being shaped by emerging global trends that reflect both technological advancement and ethical responsibility. One of the most significant developments is the rise of ethical automation and

artificial intelligence. Cooperatives are beginning to explore how AI can be used to enhance HR functions such as recruitment and performance evaluation, while ensuring that these systems remain unbiased, transparent, and aligned with cooperative values. The challenge lies in integrating intelligent technologies without compromising fairness, inclusivity, or democratic participation. Adaptability is essential for resilience; cooperatives have to implement flexible HRM practices that respond effectively to change while remaining true to their core values. The global-local HRM strategy is not a compromise – it's a synergy. (Chung, 2024)

Another evolving trend is the emergence of remote cooperatives, where virtual governance and decentralized HRM practices are becoming increasingly relevant. As digital tools enable geographically dispersed teams to collaborate effectively, cooperatives have to adapt their HR strategies to support remote work, virtual decision-making, and digital member engagement. This shift requires rethinking traditional HR structures to maintain cohesion and uphold participatory principles in a virtual environment.

Additionally, climate-conscious HRM is gaining traction as cooperatives seek to align their internal policies with broader environmental goals. This involves integrating sustainability into workforce planning, employee engagement, and organizational culture. HR departments are increasingly expected to promote eco-friendly practices, support green skills development, and contribute to the cooperative's environmental commitments. (Voigt, 2023) envision that "The future of HRM in cooperatives is ethical, digital, and green."

**Conclusion**

Human Resource Management (HRM) in cooperatives transcends its traditional role as an administrative or instrumental function. HRM in cooperatives is not just about managing people – it's about empowering communities. (Chali A. &., 2024). It serves as a strategic foundation that enables democratic governance, ethical labor practices, and meaningful social engagement. In cooperative organizations, HRM is deeply intertwined with the values of participation, equity, and solidarity, making it a vital mechanism for sustaining both organizational performance and social purpose. Looking ahead, HRM in cooperatives faces several pressing challenges driven by evolving policy landscapes at both national and European levels. In Bulgaria, the digitalization of HR processes – such as the implementation of electronic labor records – marks a significant shift toward modernization and efficiency. At the same time, the country's preparation for adopting the euro introduces new regulatory and financial frameworks that HR systems are to accommodate. Furthermore, the European Union's Pay Transparency Directive presents additional requirements for equitable compensation practices, demanding greater accountability and openness in wage structures.

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# BULGARIAN COOPERATIVES AND JEWISH KIBBUTZ: A COMPARATIVE STUDY OF THEIR ROLE AND SIGNIFICANCE IN A SOCIO-ECONOMIC CONTEXT

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***Abstract***

*This paper undertakes a comparative analysis of Bulgarian cooperatives and Jewish kibbutz, examining their respective roles and significance within their distinct socio-economic contexts. Despite originating from different historical and ideological foundations, both forms represent collective organizational models aimed at fostering mutual aid, shared ownership, and community development. The study explores the similarities and differences in their structures, operational principles, and impact on economic productivity and social cohesion. By comparing their historical evolution, governance mechanisms, and responses to socio-economic changes, this research aims to provide insights into the strengths and limitations of cooperative and communal models, and their enduring relevance in contemporary society. The analysis considers their contributions to agricultural development, social welfare, and the broader socio-political landscape of Bulgaria and Israel.*

***Keywords:*** *Bulgarian cooperative; Jewish kibbutz****;***

***JEL:*** *P13, P32, 035, Q13*

## Introduction

In psychology and sociology, cultural orientation is a key concept for understanding differences in behavior and identity. It is seen as a fundamental factor that shapes individuals' perceptions, values, and social relationships. As argued Brett Pelham et. al (2022) (Pelham, 2022) research in recent years has focused on examining cultural differences between nations and states, with particular attention paid to the dimension of "individualism–collectivism". Individualistic cultural orientations focus on the independence, rights and internal characterology of the individual as the main driver of behavior. In such cultures, a person's identity is formed mainly by their own stable personality traits, skills and achievements, and not so much by the social groups to which they belong. Examples of this can be traits such as intelligence, creativity, career achievements or social status. Conversely, collectivist orientations emphasize the interconnectedness of people within social groups and communities. In this case, identity is based on the roles and positions of the individual

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in significant social groups, such as family, religious communities or ethnicity. Collectivist cultures are characterized by strong emotional attachment and group norms, which often take precedence over individual interests. According to the classic study of H. R. Markus, H.R., & S. Kitayama (1991) (Markus, 1991). the main difference between the two cultures is expressed in the concept of self-construal. Many cultures on the Asian continent have a different understanding of individuality, insisting on the existence of fundamental connectedness between individuals. The emphasis is on the relationship with others, fitting in and harmonious interdependence with them. In contrast, the case of American culture is that it neither accepts nor values such visible connectedness between individuals. In contrast, individuals strive to maintain their independence from others by taking care of themselves and by discovering and expressing their unique inner qualities. As the authors argue, these interpretations are even more powerful than Different forms of cooperation have significant importance for economic growth, as they offer an alternative business model that simultaneously pursues economic and social goals. They contribute to sustainable and balanced development through the following mechanisms, supported by scientific research.

**Theoretical Relevance of the Cooperative Model**

The cooperative business model demonstrates significant potential as an alternative economic framework in the context of contemporary global and regional transformations. Its relevance is grounded in both the historical experience of the cooperative movement and its ongoing integration into modern socio-political, economic, and social structures. This dual foundation highlights cooperatives as viable instruments for advancing sustainable development at the local community level. The cooperatives fully realizing this potential, they must assume a proactive role in order to be recognized and engaged by stakeholders outside the traditional cooperative sphere. This represents a key practical challenge, the resolution of which requires the support of rigorous empirical research. Strengthening ties with diverse actors, expanding membership, and incorporating new participants are essential strategies for enhancing organizational resilience and societal impact.

A critical dimension of cooperative development lies in innovation. Despite their historical adaptability, cooperatives have not yet reached the full capacity of their innovative potential. Addressing this shortfall necessitates aligning cooperative practices with the dynamics of globalization and the increasingly sophisticated demands of consumers. By fostering innovation, education, and capital formation, cooperatives can reinforce their competitiveness while remaining faithful to their core values of solidarity, democracy, and mutual benefit.

**Competitive advantages of cooperative forms of business models**

Industrial diversification of forms of cooperation refers to the expansion and adaptation of the cooperative model to different industrial sectors, beyond its traditional forms in agriculture and crafts. This process leads to the emergence of new types of

cooperatives that respond to the specific needs and challenges of modern industry. Type diversification also plays a role in adapting them as business models to the changing ecosystem, part of which is regulatory

*Increasing productivity and sustainability*

As economic entities, cooperatives play a real role in increasing the productivity and sustainability of their business models. Analysis of the publications shows that worker cooperatives are more resilient in periods of economic crises and maintain more stable employment compared to traditional companies. Studies show that they are more productive because the members who are also owners are more motivated and committed to their work (Pérotin, 2011).

*Access to markets and resources*

According S.O.W Toluwase & O.M.Apata (2013) (O.M., 2013), agricultural and marketing cooperatives are crucial for increasing the incomes of smallholder farmers and improving their competitiveness. Through collective bargaining and pooling of production, they ensure better prices and access to markets, contributing to rural development and poverty reduction. Applying econometric modeling, the authors have come to the conclusion that farmer cooperatives can be an effective and viable tool for improving farmer productivity. It has been found that with the personal participation of farmers and their attitude towards farmer cooperatives, they can lead to increased productivity. Based on the results obtained, the authors allow themselves to make recommendations to the Nigerian government to increase productivity by stimulating farmers, instead of diverting resources away from agricultural production. The network of cooperatives will also provide access to investors to direct additional resources into important sectors for nutrition. Finally, they recommend granting more loans to farmer cooperatives, which, with good management and control, can achieve higher results.

*Promoting innovation and regional development*

Studies show that innovation clusters (cooperative networks) are key to regional economic growth, especially in sectors requiring high technology. These models encourage the exchange of knowledge and resources between companies, universities and research centers, leading to faster development and implementation of innovations. Zhou, X., Liu, T., Zhang, P., Zhang, X., Chu, N (2025) (Zhou, Liu, Zhang, Zhang, & Chu, 2025) found that the rapid flow of resources and the participation of various actors in the information age stimulate the formation of innovation networks, the evolution of which they studied. Particular attention is paid to strategic emerging industries for China, as well as the main mechanisms driving their development and transformation. Using social network analysis and spatial econometric models, the authors found that while the external network for the region shows limited expansion, at the same time the internal network demonstrates

increasing cohesion, moving towards a multi-center structure. The authors highlighted as factors of particular importance urban innovation capacity, economic proximity and institutional proximity, which played a key role in shaping these networks. The findings they offer to policymakers as empirical evidence for strategic optimization of interregional innovation ecosystems find application in resource-dependent regions, supporting urban resilience and promoting innovation-based development.

**Explanation of the Comparative Framework**

The comparison between cooperatives and kibbutzim is relevant because both represent collective forms of economic and social organization that seek to balance efficiency with social equity. While differing in their historical origins and institutional contexts, they share common principles such as collective ownership, democratic governance, and the prioritization of community welfare over purely profit-driven motives. Cooperatives emerged globally as a response to market failures and social inequalities, aiming to empower members through shared resources and decision-making. Kibbutzim, on the other hand, developed as a unique socio-economic experiment in Israel, combining agricultural production with a radical model of communal living.

By juxtaposing these two models, it becomes possible to highlight their convergences and divergences in terms of scale, governance, capital structure, and adaptability to global economic pressures. This comparative perspective not only enriches the understanding of cooperative and collective enterprises but also illustrates their broader implications for regional development, innovation, and resilience in the face of economic and social change.

*Table № 1 Comparison: Cooperatives vs. Kibbutzim*

| № | Criterion | Cooperatives ***(Игнатов, 2020), ( (Митева, 2012))*** | Kibbutzim ***( (Sun, 2015))*** |
|---|---|---|---|
| 1 | Industrial sector | Agriculture, finance (cooperative banks, credit unions), trade, housing, energy, services. | Primarily agriculture and production; today – also industry, tourism, high-tech. |
| 2 | Global presence | Spread worldwide – Europe, Latin America, Asia, North America, Africa. | Mainly in Israel – over 270 kibbutzim. |
| 3 | Scale | From small local associations to global corporations (e.g., Mondragón, Rabobank, Fonterra). | Small to medium-sized communities (on average 200–2000 members), but with collective farming and national importance. |
| 4 | Capital ownership | Membership contributions, collective community-owned funds, limited investments, with weak or absent external control. | Collective ownership of the entire community; originally without private property, but in recent decades partially privatized into hybrid forms, allowing investments, especially in the high-tech sector. |
| 5 | Business model | Meeting members' needs, resource sharing, democratic governance, limited profit. | Collective production and income sharing, equality among members; in modern evolution – more individualization and remuneration based on contribution. |

| | | | |
|---|---|---|---|
| 6 | Investment in R&D | Less pronounced, but present in large cooperatives (e.g., Mondragón has its own research institutes). | Kibbutzim often innovate in agriculture, irrigation, and agri-technologies; today they also participate in high-tech start-ups. |
| 7 | Social model | Social responsibility, community support, democracy, solidarity. | Complete collectivization of life (shared housing, food, childcare); later – reforms allowing more individual freedom. |
| 8 | Governance | General assemblies, elected boards, democratic structure. | Democratic general assembly of members, direct participation in decision-making, strong culture of collectivism. |
| 9 | Strength of the model | Resilience in crises, social legitimacy, long-term orientation. | High social cohesion, agricultural innovation, contribution to Israel's national security and development. |
| 10 | Accompanying risks | Limited access to capital, member conflicts, slow decision-making. | Economic difficulties in the 1980s, need for reforms; today – risk of losing community spirit due to individualization. |
| 11 | Investment focus | Sustainable development, services for members. | Agriculture, industry, technology, community infrastructure. |
| 12 | Role of the state in decision-making | Limited to establishing the legal framework. | Strong state support, especially in the early stages of development. |

***Source:*** *Autor's research*

The comparative Table №1 highlights both the similarities and the divergences between cooperatives and kibbutzim as collective socio-economic models. In terms of "sectoral orientation", cooperatives demonstrate significant diversification, spanning agriculture, finance, trade, housing, energy, and services. Kibbutzim, however, originated as primarily agricultural communities but have gradually expanded into industry, tourism, and, more recently, high-tech sectors, reflecting their adaptability to the Israeli economic landscape.

With respect to „global presence ", cooperatives have achieved worldwide dissemination, becoming a central organizational form across multiple continents. Kibbutzim, in contrast, remain geographically concentrated in Israel, yet they carry disproportionate socio-economic importance within the national context.

The „scale of operations "also differentiates the two. Cooperatives range from small local initiatives to multinational corporations such as Mondragón or Rabobank, underscoring their potential for global competitiveness. Kibbutzim, by comparison, are smaller in size (usually between 200 and 2000 members) but maintain strong collective economies and considerable national influence.

The „ownership structures" reveal another contrast. Cooperatives rely on member contributions and community-based funds, typically limiting external capital and maintaining democratic control. Kibbutzim historically implemented full collectivization, with no private property, though reforms in recent decades have introduced hybrid forms allowing limited privatization and investment, especially in high-tech ventures.

From a „business model perspective", cooperatives emphasize meeting members' needs and redistributing benefits democratically, while kibbutzim originally enforced complete equality in production and income distribution. Modern kibbutzim, however,

increasingly recognize individual contributions, aligning their structures closer to market realities.

Regarding „innovation and R&D“, large cooperatives occasionally establish dedicated research institutions (as in the case of Mondragón), but kibbutzim are particularly notable for pioneering agricultural innovations, irrigation technologies, and more recently, participation in Israel's start-up ecosystem.

The „social and governance models "reveal shared commitments to democracy, solidarity, and community participation, though kibbutzim historically applied these principles in a more radical form, extending collectivism to all aspects of daily life. Today, both models incorporate reforms that balance collective ideals with individual freedoms.

Finally, the „strengths and risks“ associated with each model illustrate their long-term viability. Cooperatives are recognized for resilience during crises, legitimacy, and sustainability, though they face challenges such as limited access to capital and slow decision-making. Kibbutzim, while central to Israel's nation-building, experienced severe economic crises in the 1980s, leading to reforms that risk diluting their communal spirit.

Overall, the comparison underscores that both cooperatives and kibbutzim represent dynamic, adaptable forms of collective organization. They provide valuable lessons for contemporary debates on sustainable development, innovation, and social cohesion, offering alternative pathways to purely profit-driven economic systems.

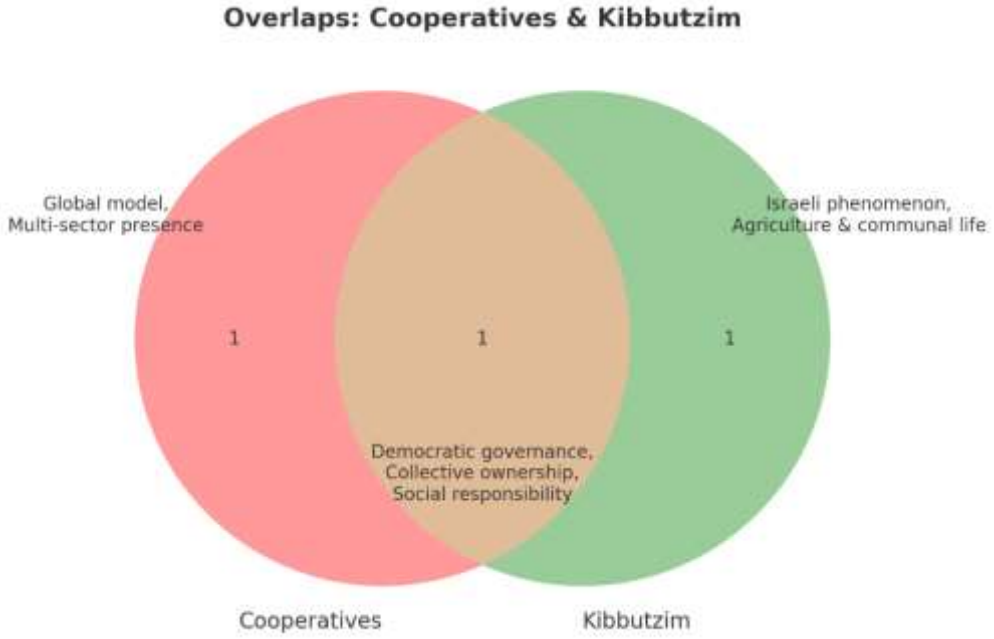
In **Chart No. 1,** one can see the similarities and differences in the business models of cooperatives and kibbutzim and draw conclusions from this.

Left: the characteristics of cooperatives (global presence, diverse sectors).

Right: the characteristics of kibbutzim (Israeli phenomenon, agriculture and community life).

In the middle: the general principles – democratic governance, collective ownership, social responsibility.

*Chart No. 1: The similarities and differences in the business models*




**Conclusion**

The comparative analysis of cooperatives and kibbutzim illustrates that, despite their distinct historical trajectories and institutional frameworks, both models embody enduring principles of collective organization, democratic governance, and community-oriented development. Cooperatives demonstrate global scalability and adaptability across diverse sectors, while kibbutzim represent a unique national experiment that has combined agricultural innovation, social cohesion, and later integration into high-tech industries.

Both systems reveal significant strengths—such as resilience in times of crisis, promotion of social equity, and contributions to regional or national development—but they also face inherent challenges, including limited capital access, governance complexities, and risks of dilution of communal values under market pressures.

Ultimately, the comparison underscores the relevance of collective models as alternatives to purely profit-driven enterprises. They provide valuable insights for contemporary debates on sustainable growth, innovation ecosystems, and inclusive development. By examining cooperatives and kibbutzim side by side, it becomes evident that collective economic forms can contribute not only to the welfare of their members but also to broader social and economic transformation.

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# PARALLEL SESSIONS

# SECTION 2:

# SUSTAINABILITY AND INNOVATION: DIGITAL, ECOLOGICAL, AND ECONOMIC PERSPECTIVES

# DIGITAL TRANSFORMATION AS A DRIVER OF ECONOMIC DEVELOPMENT IN THE EUROPEAN UNION: ANALYSIS OF OPPORTUNITIES, CHALLENGES, AND POLICY IMPLICATIONS

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**Abstract**

*Digital transformation represents one of the most significant factors for economic development in the European Union during the 21st century. This paper examines the multifaceted nature of digital transformation and its influence on six key economic areas: digital infrastructure, labor markets, small and medium-sized enterprises (SMEs), financial sector, education, and cybersecurity. Through an analysis of empirical data and academic literature, the study reveals that while digitalization is a powerful driver of economic growth and productivity, its benefits are unevenly distributed across member states and financial sectors. Particular attention is given to structural differences between digitally advanced Western and Northern EU regions and lagging Southern and Eastern regions. The paper argues that to realize the full potential of digital transformation, coordinated policies are necessary that address digital divides, promote technological diffusion, and ensure that the benefits of transformation reach all economic sectors and regions. The findings underscore the critical role of inclusive governance, adequate funding, and public-private partnerships in fostering sustainable digital development across the Union.*

***Keywords****: digital transformation, economic development, European Union, digital infrastructure*

***JEL Codes****: O33, O47*

## Introduction

The rapid advancement of digital technologies has catalyzed transformative shifts in economies across the globe, with the European Union (EU) positioning itself at the forefront of this revolution. Digital transformation in the EU is not merely a technological upgrade but a structural reconfiguration of economic, social, and political systems. This shift encompasses the integration of automation, artificial intelligence (AI), cloud computing, and big data analytics into economic practices, fundamentally altering productivity paradigms, employment dynamics, innovation cycles, and public governance (Morgan, 2025). The EU has responded with a suite of policies aimed at fostering an inclusive digital society, notably through the Digital Decade Policy Programme 2030, the Digital Services Act, and national digitalization strategies. These frameworks aim to unify digital infrastructure, promote

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technological sovereignty, and embed ethical standards in AI and data governance (Bocean & Vărzaru, 2023).

Recent empirical research highlights the tangible economic benefits of digital transformation. For instance, countries exhibiting higher adoption rates of cloud computing, e-commerce, and data-driven processes show statistically significant gains in GDP per capita and sustainability indices (Stoliarov & Sinkovskiy, 2024). This underscores the dual role of digitalization as both an economic growth driver and a sustainability enabler. However, these benefits are not uniformly distributed. Structural disparities persist, particularly between digitally advanced Northern and Western EU states and lagging Southern and Eastern regions, where digital infrastructure gaps and lower digital skills impede transformation (Török, 2024). Moreover, digital divides along rural-urban lines and generational barriers remain critical challenges that risk widening socioeconomic inequalities.

Additionally, scholars argue that while digital technologies enhance efficiency and competitiveness, they also raise complex governance issues, including cybersecurity vulnerabilities, ethical AI use, and digital platform monopolization (Doroiman & Sîrghi, 2024). Addressing these requires coordinated regulatory efforts, public-private partnerships, and investments in digital education. This paper explores how digital transformation influences the economic development of EU countries across six key domains: digital infrastructure, labor markets, SMEs, finance, education, and cybersecurity. It offers both a macroeconomic analysis and micro-level insights, drawing on quantitative data and academic literature to examine opportunities, disparities, and policy implications in the EU's digital transformation journey.

## Methodology

This study is based on a comprehensive review of academic literature, empirical data, and policy documents pertaining to digital transformation in the European Union. The methodology includes qualitative analysis of research published between 2023 and 2025, combined with analysis of information from official documents of the European Commission, the European Parliament, and national governing bodies. Primary sources of information include scientific articles from recognized international journals and specialist reports analyzing various dimensions of digital transformation. Secondary sources encompass official policy documents, technical reviews, and economic reports. The analysis is structured around six main themes: digital infrastructure, labor market, SMEs, financial sector, education, and cybersecurity. Each theme is analyzed through the lens of economic development, social inclusion, and maintenance of competitiveness in a global context. The paper synthesizes findings from peer-reviewed literature and policy analysis to provide both theoretical understanding and empirical insights into the uneven impacts of digitalization across the EU.

## Results and Discussions

### The Role of Digital Infrastructure in Economic Growth

Robust digital infrastructure is the cornerstone of any successful digital transformation, serving as the backbone for technological innovation, productivity gains, and inclusive economic growth. In the European Union, high-speed broadband networks, 5G connectivity, data centers, and secure cloud services form the critical digital skeleton that enables both the public and private sectors to thrive in the digital age. As Morgan (2025) emphasizes, the EU's Digital Decade strategy explicitly prioritizes digital infrastructure as a strategic asset, not only for economic competitiveness but also for technological sovereignty and resilience.

High-speed broadband access is foundational to digital participation, yet despite the EU's significant strides, disparities persist. Over 90% of households across the EU reportedly have access to fixed broadband, but rural and less developed regions continue to suffer from "digital deserts" that hinder economic integration (Bocean & Vărzaru, 2023). These infrastructure gaps exacerbate socioeconomic inequalities and stifle entrepreneurial activity outside urban centers. As a policy response, the Connecting Europe Facility and Broadband Cost Reduction Directive are instrumental in bridging these divides, promoting public-private partnerships and investment incentives to expand ultra-fast networks.

The rollout of 5G technology marks a transformative leap in connectivity, offering ultra-low latency, massive device density, and data throughput essential for Industry 4.0, autonomous transport, and smart cities. However, deployment remains uneven due to spectrum allocation inconsistencies and security concerns regarding non-European equipment suppliers. According to Doroiman & Sîrghi (2024), the economic benefits of full 5G adoption in the EU could exceed €2 trillion by 2035, but this potential hinges on overcoming deployment bottlenecks and ensuring regulatory harmonization. Cloud computing and data centers are equally pivotal. The European Cloud Initiative and the GAIA-X project aim to foster a sovereign cloud ecosystem that aligns with EU values of data protection, interoperability, and competitive neutrality. Stoliarov & Sinkovskiy (2024) argue that secure cloud infrastructure not only supports business scalability but also enhances public sector efficiency, enabling the rapid digitalization of health, education, and administrative services.

### Digital Transformation and Its Impact on the Labor Market

Digital transformation is fundamentally reshaping labor markets across the European Union, challenging traditional employment paradigms and creating new occupational structures. Technological innovations—ranging from automation and artificial intelligence (AI) to platform-based gig work—are altering job content, labor demand, and employment relationships. While digitalization presents significant opportunities for economic

revitalization and job creation, it also raises urgent questions about workforce displacement, skill obsolescence, and equitable access to new employment avenues.

One of the most salient effects of digital transformation is the automation of routine and repetitive tasks. Sectors such as manufacturing, logistics, and retail have experienced increased use of robotics, AI-driven analytics, and autonomous systems, resulting in notable labor substitution (Morgan, 2025). This trend is evident in the financial sector, where AI models now perform fraud detection, risk assessment, and portfolio management tasks once handled by human analysts (Bocean & Vărzaru, 2023). While automation enhances efficiency and reduces costs, it poses displacement risks for low- and mid-skill workers, especially in regions lacking reskilling infrastructure.

Conversely, digitalization is a potent engine of job creation in high-skill, knowledge-intensive sectors. The demand for professionals in software development, cybersecurity, data science, and cloud engineering has surged across EU member states. Yet, this expansion is constrained by a persistent digital skills gap. According to Török (2024), despite rising vacancies in the tech sector, millions of positions remain unfilled due to shortages in advanced digital competencies. In response, the EU has introduced initiatives such as the Digital Skills and Jobs Coalition and the European Skills Agenda, aiming to equip 80% of adults with at least basic digital skills by 2030. Digital transformation also calls for a reevaluation of education systems. As AI and automation redefine employability, education must shift from rote learning to fostering adaptive, interdisciplinary, and lifelong learning mindsets. Integrating computational thinking, data literacy, and soft skills into curricula is essential for preparing students for future labor demands.

**The Impact of Digital Transformation on Small and Medium Enterprises (SMEs)**

Small and medium-sized enterprises (SMEs) form the backbone of the European economy, accounting for approximately 99% of all businesses in the EU and contributing significantly to job creation and regional economic resilience. The digital transformation has profoundly reshaped the operational landscape for SMEs, revolutionizing how they manage processes, access markets, interact with consumers, and compete with larger enterprises. Digitalization introduces immense opportunities—ranging from cost efficiencies and automation to expanded global reach and personalized customer engagement. However, it also introduces critical challenges, including the need for substantial investment in emerging technologies, cybersecurity preparedness, and the widening digital divide between digitally advanced and lagging firms (Bocean & Vărzaru, 2023).

Among the most transformative benefits of digitalization for SMEs is the marked increase in operational efficiency. Technologies such as cloud computing, AI, and big data analytics enable small businesses to streamline internal workflows, automate repetitive tasks, and optimize logistics and supply chain management. Enterprise resource planning (ERP) and customer relationship management (CRM) systems integrate critical business functions into unified platforms, improving decision-making and customer targeting. AI-

powered chatbots and data-driven marketing tools allow SMEs to enhance service delivery while minimizing costs (Morgan, 2025). E-commerce platforms have significantly expanded SMEs' access to global markets. Online marketplaces like Amazon, Etsy, and eBay remove geographical limitations, enabling micro and small firms to tap into international customer bases. Social media and influencer marketing, paired with targeted digital ads, further democratize brand visibility, allowing SMEs to cultivate direct customer relationships and build niche audiences (Stoliarov & Sinkovskiy, 2024).

However, these advances are not universally accessible. Many SMEs encounter formidable obstacles in the digital transition, most notably the high upfront costs of adopting digital tools and hiring skilled personnel. Unlike large corporations with robust digital strategies and capital reserves, SMEs often operate on thin margins and face difficulties accessing digital finance or public subsidies. Programs such as the Digital Europe Programme and the European Innovation Council offer essential financial support, training, and mentorship, but awareness and uptake of these programs remain uneven across member states (Doroiman & Sîrghi, 2024).

**Digital Transformation of the Financial Sector**

The financial sector is one of the most profoundly impacted industries by digital transformation, with advancements in technology reshaping banking, payments, investment, and financial services. The adoption of artificial intelligence, blockchain, big data, and cloud computing has revolutionized the way financial institutions operate, improving efficiency, security, and accessibility for consumers and businesses alike. As the European Union continues its push toward a fully digital economy, the integration of financial technology (FinTech) has become a key driver of economic growth, fostering innovation while also presenting regulatory and security challenges that must be addressed.

Digital banking has emerged as a dominant force, enabling customers to manage their finances remotely through mobile applications and web portals. The rise of neobanks—digital-first institutions like Revolut and N26—has disrupted traditional banking by offering low-cost, user-friendly financial services with enhanced transparency and speed. As noted by Morgan (2025), these innovations have forced legacy institutions to digitize their offerings, invest in customer experience platforms, and adopt automated decision-making processes to stay competitive. A defining shift in the sector is the proliferation of digital payment systems and the decline of cash transactions. The EU's Single Euro Payments Area (SEPA), along with mobile wallets such as Apple Pay and Google Pay, have streamlined cross-border transactions and fostered financial inclusion. The COVID-19 pandemic acted as a digital accelerant, pushing both businesses and consumers toward contactless and online payments. In response, the European Central Bank (ECB) is actively exploring the development of a digital euro—a central bank digital currency (CBDC) aimed at preserving monetary sovereignty in the face of growing private digital currencies (Bocean & Vărzaru, 2023).

Blockchain technology and decentralized finance (DeFi) represent another frontier of transformation. Platforms built on distributed ledger technologies offer peer-to-peer lending, trading, and asset management solutions without the need for intermediaries. Smart contracts and tokenization enable automated, transparent transactions that minimize fraud and operational costs. However, these developments also bring volatility and regulatory uncertainty. The EU has responded with the Markets in Crypto-Assets Regulation (MiCA), designed to provide legal clarity, consumer protection, and market integrity for crypto assets (Stoliarov & Sinkovskiy, 2024). Artificial intelligence is revolutionizing risk management and personalized finance. AI-powered algorithms now assess creditworthiness, detect fraud in real-time, and provide tailored financial advice through robo-advisors. These tools democratize investment opportunities and enhance customer experience while reducing service costs. However, reliance on algorithms also raises ethical and legal concerns regarding bias, transparency, and accountability in financial decision-making (Doroiman & Sîrghi, 2024).

**Education and Digital Skills: Building Human Capital for a Digital Europe**

As the European Union (EU) accelerates its digital transformation, the development of a digitally skilled population is essential for ensuring inclusive growth, competitiveness, and societal resilience. Education and digital literacy form the bedrock of the EU's vision for a digital decade, enabling individuals to adapt to rapidly changing labor markets, participate in democratic life, and contribute to innovation-driven economies. Recognizing that digitalization is not solely a technological shift but a human-centric transformation, the EU has launched several strategic initiatives to bridge digital skills gaps and prepare citizens for the evolving demands of the digital era.

The use of digital technologies in education has expanded rapidly in recent years, driven by the increasing availability of online learning platforms, virtual classrooms, and AI-powered educational tools. The COVID-19 pandemic further accelerated this shift, forcing schools, universities, and training institutions to adopt remote learning solutions at an unprecedented pace. While this transition demonstrated the potential of digital education, it also exposed inequalities in access to technology, highlighting the need for inclusive policies that ensure all students benefit from digital advancements. The rise of Massive Open Online Courses (MOOCs), digital academies, and corporate training programs has transformed how people acquire new skills and qualifications. Platforms such as Coursera, Udemy, and edX provide affordable access to high-quality education, allowing learners to study at their own pace and from any location. Universities and educational institutions across Europe have embraced blended learning models that combine traditional classroom instruction with digital coursework, increasing flexibility and expanding educational opportunities.

Additionally, AI-driven personalized learning systems have emerged, tailoring educational content to individual students' learning styles, progress, and areas of difficulty.

These systems use data analytics to adapt lesson plans in real-time, ensuring more efficient and effective learning experiences. Virtual and augmented reality (VR/AR) tools further enhance education by creating immersive learning environments, particularly in fields such as medicine, engineering, and technical training. However, despite the benefits of digital learning, challenges remain. The digital divide—disparities in access to high-speed internet, digital devices, and digital literacy skills—prevents many students, particularly those in rural or economically disadvantaged areas, from fully participating in online education. According to EU reports, millions of Europeans still lack basic digital skills, limiting their ability to benefit from online education and training opportunities. To address these challenges, education systems must evolve to integrate computational thinking, coding, and data literacy into school curricula at all levels, while encouraging STEM education from an early age (Morgan, 2025).

**Cybersecurity and Data Protection Concerns**

As the European Union (EU) embraces digital transformation across sectors, cybersecurity has emerged as a critical pillar of economic sustainability, business continuity, and public trust. The rapid adoption of cloud computing, Internet of Things (IoT), artificial intelligence (AI), and remote working technologies has exponentially expanded the digital attack surface, making cyber threats a central economic and geopolitical concern. Cybersecurity is no longer a purely technical issue—it is an essential foundation for enabling digital growth, securing innovation ecosystems, and protecting the integrity of interconnected markets (Morgan, 2025).

Cyberattacks have become more frequent, complex, and damaging. Ransomware, data breaches, and cyber-espionage campaigns target critical infrastructure, financial systems, healthcare providers, and public administration. In 2023 alone, the EU Agency for Cybersecurity (ENISA) reported a significant surge in state-sponsored attacks and supply chain intrusions, often targeting vulnerabilities in third-party service providers and software dependencies (Bocean & Vărzaru, 2023). Such disruptions can cripple business operations, erode consumer trust, and result in financial losses and reputational damage—consequences with macroeconomic implications. The EU's response has been multi-pronged, focusing on regulation, infrastructure resilience, and capacity building. Central to this strategy is the NIS2 Directive, which updates and expands the original Network and Information Systems Directive. NIS2 imposes stricter cybersecurity requirements on essential and important entities across sectors, including mandatory risk assessments, incident reporting, and supply chain security practices. The Digital Operational Resilience Act (DORA) further complements these efforts by specifically targeting the financial sector, ensuring that digital service providers and financial institutions can withstand and recover from cyber disruptions (Stoliarov & Sinkovskiy, 2024).

Cybersecurity is intrinsically linked to digital trust. Without confidence in the safety and privacy of online systems, citizens and businesses may refrain from engaging in digital

commerce, e-governance, or data sharing. The General Data Protection Regulation (GDPR) remains a cornerstone of this trust, setting global benchmarks for personal data protection and transparency. However, new challenges such as algorithmic accountability, biometric surveillance, and AI-driven profiling require ongoing regulatory innovation and ethical oversight (Török, 2024). The EU Cybersecurity Act, which grants ENISA permanent authority and mandates the creation of a European cybersecurity certification framework, is designed to enhance trust in ICT products and services across the internal market. At the same time, the European Cyber Shield initiative—part of the upcoming Cyber Solidarity Act—seeks to establish cross-border Security Operations Centres (SOCs) equipped with AI-powered threat detection tools for coordinated cyber defense (Doroiman & Sîrghi, 2024).

## Conclusions

Digital transformation is a defining force of our time, reshaping the economy of the European Union and creating both substantial opportunities and multifaceted challenges. Through examination of six key economic areas—digital infrastructure, labor markets, SMEs, financial sector, education, and cybersecurity—this paper reveals that while digitalization is a powerful generator of economic growth, innovation, and productivity, its realization is heavily dependent on context, quality of governance, and implementation capacity. The uneven distribution of digital transformation benefits underscores the necessity for targeted policies that address digital divides, promote technological diffusion, and ensure equitable access to resources and opportunities.

For the EU to realize the full potential of digital transformation, it must adopt an integrated approach that combines technological investments with human-oriented policies. This includes strengthening digital infrastructure, particularly in lagging regions, massive investments in education and reskilling, supporting SMEs in their digital transition, enhancing cybersecurity and data protection, and building regulatory frameworks that promote innovation while protecting workers and consumers. Public-private partnerships, access to financing, and international cooperation will be critical in advancing the transformation. By fostering a resilient and digitally skilled workforce, ensuring inclusive access to technology, and maintaining ethical standards in AI and data governance, the European Union can position itself as a global leader in digital innovation and ensure that the benefits of transformation are shared by all citizens, businesses, and regions. The success of digital transformation ultimately depends not on technology alone, but on the EU's commitment to ensuring that digitalization serves the needs of all its people and contributes to sustainable, inclusive economic growth.

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# DIGITALIZATION AND ECONOMIC GROWTH: A BIBLIOMETRIC ANALYSIS AND LITERATURE REVIEW USING SCOPUS AI

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***Abstract***

*The rapid evolution of digital technologies is reshaping how economies function, influencing productivity, competitiveness, and innovation ecosystems. This study investigates the economic implications of digitalization by applying a mixed-method approach that combines a systematic literature review with bibliometric analysis. Drawing on a curated dataset of 631 Scopus-indexed publications from 2005 to 2025, the paper maps the intellectual structure of the field and identifies core research themes. Using Scopus AI, the analysis reveals emerging clusters that connect digitalization with growth-related concepts such as innovation, institutional adaptation, and technological transformation. A noticeable increase in academic interest is observed after 2019, reflecting the rising strategic importance of digital policies in economic discourse. The study provides insights into how digitalization has become a central narrative in shaping modern economies, offering valuable directions for further research and policy formulation.*

***Keywords:*** *digitalization; economic growth; bibliometric analysis; Scopus AI; literature review.*

***JEL Codes****: O33, O47, L86.*

## Introduction

Digital transformation has become a defining feature of modern economies, fundamentally altering how organizations, markets, and institutions operate. While digitization can be defined as the process of converting something to digital form, digitalization extends further, representing the broader transformation of business processes and activities through the use of digital technologies and data. Digitalization is most commonly associated with the operational data and information within organizations (Hellsten & Paunu, 2020). Digitalization involves using digitized representations to

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streamline specific operations, with digitization serving as its foundation (Vrana & Singh, 2021). Digital transformation involves leveraging digital technologies to revitalize and optimize business operations, resulting in improved efficiency, responsiveness, and innovation (Fadhlurrahman, 2024). Digital transformation involves employing technologies like cloud computing, data analytics, the Internet of Things, and artificial intelligence to transform how an organization operates, engages with its customers, and meets its business objectives (Siebel, 2019).

This study investigates how digitalization relates to economic growth using bibliometric methods and a systematic literature review. The study aims to identify dominant research trends, influential publications, and key thematic clusters related to digitalization's role in economic development. Using a dataset of 631 documents from Scopus (2005–2025), including AI-driven mapping, the research examines the evolution of digitalization discourse and its growing influence on economic transformation. The study further investigates how digitalization fosters productivity, innovation, and competitiveness while integrating institutional, technological, and economic perspectives.

**Theoretical framework**

Numerous studies analyze the impact of digitalization on economic growth (Mhaka & Taonezvi, 2024; Neffati & Jbir, 2024; Asma et al., 2024; Doroiman & Sîrghi, 2024; Erpelev & Maloletko, 2024). Although some of the publications listed below are not included in the Scopus database, they offer essential contributions and significant insights into digitalization and economic growth.

Digitalization contributes to economic growth in EU member states for the years 2017-2022 by enhancing gross output, with a 1% rise in the digitalization index corresponding to nearly a 0.2% increase in GDP. Additionally, capital, labor, and trade are key factors in driving development (Moskalyk & Balashova, 2024). Novikova et al. (2022) examined the effect of digitalization on sustainable economic growth in Ukraine, and their findings confirmed a direct relationship between digitalization and economic development. They discovered that every 1% increase in digital sector output corresponds to a 0.827% rise in GDP. In essence, over the past eight years, digitalization has been a major driver of Ukraine's economic growth. Advances in digital technologies and the growth of e-commerce can contribute to more sustainable development for organizations and global economies (Criveanu, 2023).

Skopenko et al. (2023) claim that digitalization boosts competitiveness and business processes, facilitating timely decision-making and restructuring, which are essential for sustainable development. Korzhyk et al. (2024) compare different digitalization indexes to identify their similarities and differences, proposing a new index for a more comprehensive analysis of digitalization. They also note that the public and private sectors use distinct digitalization indexes.

Idriz and Sterev (2022) examine Bulgaria's shift to a digital economy, arguing that current digitalization efforts are inadequate for future competitiveness. They suggest fostering knowledge sharing and collaborative applied research.

Pucihar et al. (2021) explore digital transformation in Slovenian enterprises through a survey of 125 businesses. Many are either planning or progressing with digital transformation, but key barriers include insufficient digital skills and funding. Only 33 enterprises have adopted a digital strategy, and Slovenia ranks below average on the Digital Economy and Society Index. The study highlights the need for measures to accelerate digital transformation, with businesses favouring grants and co-funding projects to access knowledge and adopt best practices (Pucihar et al., 2021).

Kruljac (2023) examines the level of digital transformation among medium and large companies in Croatia, identifying key factors that management must develop to achieve digital maturity. The study also explores the primary drivers and obstacles of digital transformation, as well as the management skills required to lead this process. Data was gathered through a survey of representatives from 147 companies. The findings highlight the strategic importance of IT technology in achieving digital transformation, serving as the foundation for future business operations. While most companies (46.94%) use IT as an operational tool with a notable impact on business processes, they often fail to leverage it as a competitive advantage. Major challenges include resistance to change (46.94%), slow organizational adaptation (44.90%), and a lack of necessary competencies (43.54%) (Kruljac, 2023).

Kontolaimou and Skintzi (2020) analyze ICT and e-commerce adoption across Greece's four major regions—Attica, the Aegean Islands-Crete, Northern Greece, and Central Greece - using data from Greek firms between 2008 and 2018. The study examines ICT integration in internal operations (ERP and CRM software, cloud computing), business communication (web presence, social media, online advertising), and e-commerce (e-sales and e-procurement). Statistical analysis reveals that Attica leads in most ICT indicators, while Central Greece consistently lags behind in all measures. Albani et al. (2019) emphasize that digital transformation is a key driver of Greece's economic growth and productivity, reshaping production, distribution, and consumption models. By leveraging its human capital, Greece can gain a competitive edge, with a strong focus on jobs, skills, and the learning ecosystem. FinTech plays a vital role in advancing the financial sector, while policy recommendations aim to ensure that digital opportunities benefit all.

Bakari (2022) uses World Development Indicators data (World Bank, 2021) for 1990–2020 to assess whether patents and digitalization contribute to Romania's economic growth. The empirical findings reveal that both digitalization and patents contribute positively to economic growth. Apostol (2023) explores Romania's digital platform economy, identifying key bottlenecks that hinder its progress. As the EU member state with the lowest digital performance, Romania faces challenges such as limited digital literacy and insufficient technology transfer. The study emphasizes the importance of strengthening the

entrepreneurial ecosystem to support sustainable growth and suggests developing a new metric to better assess and enhance the impact of this ecosystem.

Based on data retrieved from Scopus AI on the impact of digitalization on economic growth, Table 1 presents the main effects of digitalization on economic growth.

*Table no. 1 - The main aspects of the effects of digitalization on economic growth*

| Aspect | Impact of Digitalization on Economic Growth |
|---|---|
| **General Impact** | Positive and significant (Kuziyeva et al., 2022; Mgadmi et al., 2021; Mura, & Donath, 2023) |
| **Developed vs. Developing Countries** | Both benefit from digitalization, though the impact level varies (Mgadmi et al., 2021; Kusairi et al., 2023) |
| **Sector-Specific Benefits** | Reduces information asymmetry, increases financial inclusion in financial sector (Jangid et al., 2024) |
| **Regional and Sectoral Variations** | Varies by region (EU, Russia, China) (Mura, & Donath, 2023; Zhang et al., 2024; Lee et al., 2024; Aleksandrova et al., 2022) |
| **Long-term vs. Short-term Effects** | Positive long-term, mixed short-term (Mgadmi et al., 2021; Jangid et al., 2024; Foo et al., 2023; Neffati & Jbir, 2024) |
| **Policy Implications** | Harmonized Digital Policies (Mura, & Donath, 2023); Investment in Digital Infrastructure (Medhioub & Boujelbene, 2024); Green Finance and Sustainability (Nie et al., 2024; Škare et al., 2024) |
| **Challenges and Considerations** | Initial Negative Impact (Foo et al., 2023; Vorontsovskiy, 2020) |

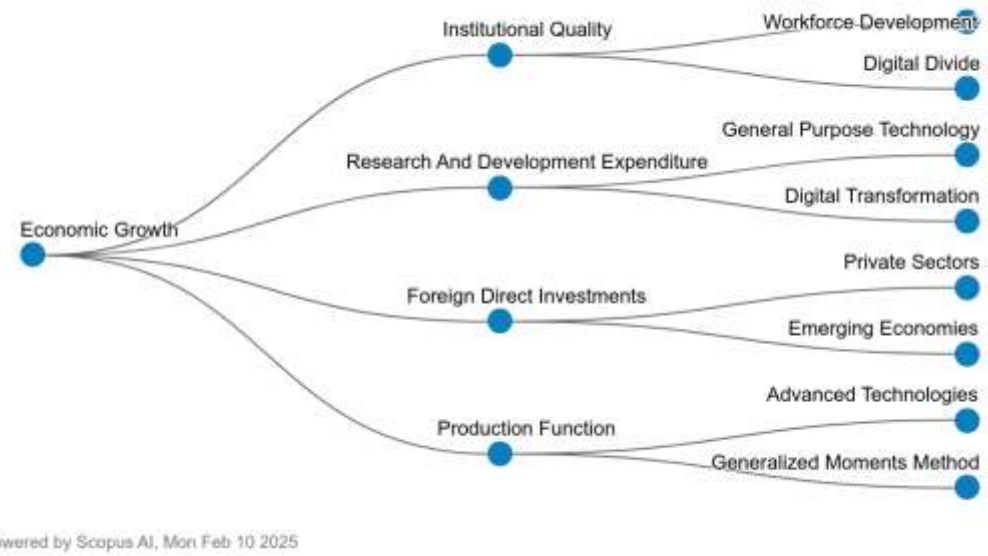
*Source:* Author's systematization based on Scopus AI

Figure 1 presents the concept map generated from Scopus AI. This map highlights key themes related to the question: "What is the impact of digitalization on economic growth?". Also, the concept map shows a detailed representation of the factors influencing economic growth in the context of digitalization. Institutional quality connects economic growth to workforce development and addressing the digital divide, highlighting the role of strong institutions in equipping the workforce for digital transitions and reducing inequalities. Research and development (R&D) expenditure is linked to general-purpose technology and digital transformation, emphasizing the importance of innovation and the adoption of digital technologies. Foreign direct investments (FDIs) play a critical role in integrating advanced technologies and fostering growth in emerging economies, showcasing the global nature of digitalization. The production function connects economic growth to advanced technologies and econometric techniques like the Generalized Moments Method, reflecting the need for sophisticated models to measure the impact of digitalization accurately.

Overall, the map emphasizes the multifaceted impact of digitalization on economic growth, combining institutional, technological, and economic perspectives. Addressing

challenges like the digital divide, fostering R&D, and leveraging FDIs are pivotal for driving growth in the digital era.

*Figure no. 1 Concept map*




*Source:* Scopus AI

**Bibliometric analysis**

To map the connections between digitalization and economic development in scholarly literature, this study utilizes a bibliometric approach. By systematically analyzing academic publications, bibliometric methods allow researchers to trace conceptual developments, highlight influential topics, and identify patterns in how ideas evolve over time. The dataset was obtained from Scopus. Publications were identified through a keyword search for "digitalization" and "economic development," limited to the title, abstract, and keyword fields. To ensure relevance, the scope of the search was narrowed to subject areas such as Social Sciences; Economics, Econometrics, and Finance; and Business, Management, and Accounting. Only finalized publications - such as journal articles, book chapters, conference papers, and books—were included. The data was collected in March 2025 and covers the period from 2005 to 2025, resulting in a curated dataset of 631 documents.

The analysis was conducted using VOSviewer, a bibliometric software designed to create and visualize research networks (Stoykov, 2024). Co-occurrence analysis was employed to identify how frequently and in what contexts keywords appear together within the dataset.

The research provides a comprehensive overview of the intellectual structure of digitalization research and its connections to economic development, offering valuable insights into emerging scholarly discussions (Calderon-Monge & Ribeiro-Soriano, 2024).

Table 2 presents the number of publications related to the research topic from 2005 to 2025, based on data from the Scopus database.

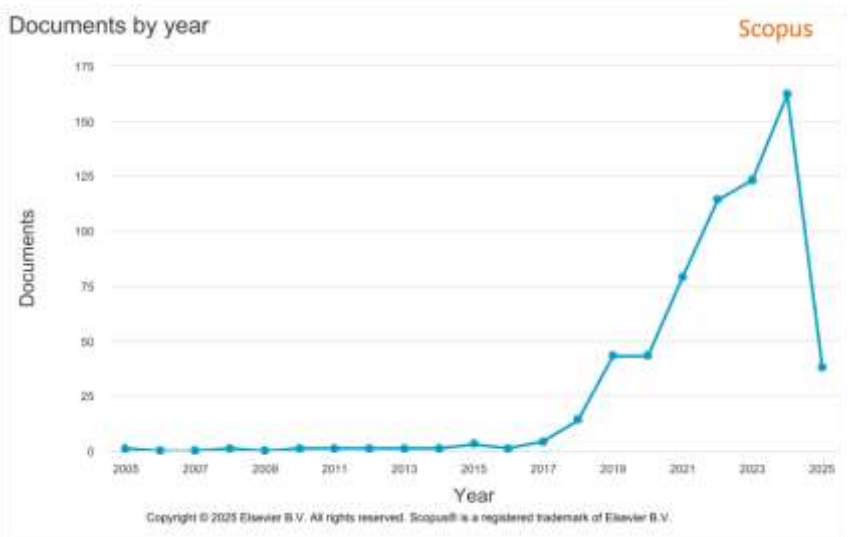
*Table no. 2 - Annual publication count (2005–2025)*

| Year | Number of publications |
|---|---|
| 2025 | 38 |
| 2024 | 162 |
| 2023 | 123 |
| 2022 | 114 |
| 2021 | 79 |
| 2020 | 43 |
| 2019 | 43 |
| 2018 | 14 |
| 2017 | 4 |
| 2016 | 1 |
| 2015 | 3 |
| 2014 | 1 |
| 2013 | 1 |
| 2012 | 1 |
| 2011 | 1 |
| 2010 | 1 |
| 2009 | 0 |
| 2008 | 1 |
| 2007 | 0 |
| 2006 | 0 |
| 2005 | 1 |

*Source:* Scopus database

Figure 2 presents the annual distribution of articles from 2005 to 2025. A significant increase in research output related to the keywords "digitalization" and "economic development" is observed after 2019, with 43 published documents. The trend continues to rise sharply, peaking in 2024 with 162 documents. This upward trajectory continues, reaching its highest point in 2024 with 162 publications. As of early March 2025, 38 documents have already been published, suggesting that the increasing research interest in this field is expected to persist. This trend reflects the growing importance of digital transformation in economic development, as well as the increasing scholarly attention toward its implications.

*Figure no. 2. Number of documents (by years)*




*Source:* Scopus database

Table 3 presents the Top 20 countries/territories by document count for digitalization and economic growth. Russian Federation and China stand out as the top contributors, with 177 and 152 documents, respectively, far surpassing other countries. The third position is for Ukraine with 55 documents, showing a moderate level of contribution compared to Russian Federation and China. European nations, including Romania (22 documents), Italy (20 documents), the United Kingdom (19 documents), Poland (16 documents), and Germany (15 documents), also make significant contributions.

*Table no. 3 - Document Count for the Top 20 Countries/Territories for the period 2005-2025*

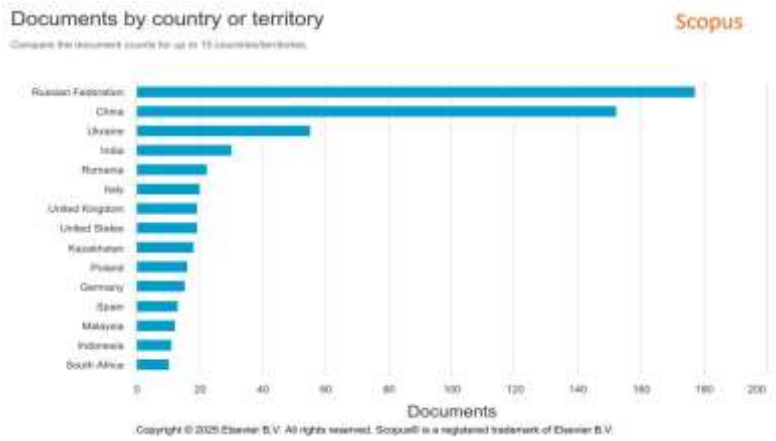
| Country/Territory | Documents |
|---|---|
| Russian Federation | 177 |
| China | 152 |
| Ukraine | 55 |
| India | 30 |
| Romania | 22 |
| Italy | 20 |
| United Kingdom | 19 |
| United States | 19 |
| Kazakhstan | 18 |
| Poland | 16 |
| Germany | 15 |
| Spain | 13 |
| Malaysia | 12 |
| Indonesia | 11 |
| South Africa | 10 |

| | |
|---|---|
| Viet Nam | 9 |
| Austria | 8 |
| Hungary | 8 |
| Pakistan | 8 |
| Turkey | 8 |

*Source:* Scopus database

Figure 3 illustrates the distribution of documents across the top 15 countries/regions. This group includes several EU member states, such as Romania, Italy, Poland, Germany, and Spain.

*Figure 3. Documents by country or territory (top 15)*




*Source:* Scopus database

The core of the analysis centers on 1,918 keywords extracted from the dataset. For visualization purposes, only those appearing at least five times were included, narrowing the focus to 69 recurring terms.

As shown in Table 4, "digitalization" is by far the most frequently mentioned keyword (186 occurrences), confirming its central role in this research space. Other high-frequency terms include "digital economy", "digital transformation", "economic development", and "sustainable development". This reflects the multidimensional nature of the discourse, spanning not only technology and economics but also sustainability and innovation.

*Table no. 4 – Top 15 keywords co-occurrence*

| **Keywords** | **Occurrences** |
|---|---|
| digitalization | 186 |
| digital economy | 87 |
| digital transformation | 60 |
| economic development | 45 |
| digitisation | 31 |
| economic growth | 28 |

| | |
|---|---|
| sustainable development | 28 |
| Industry 4.0 | 23 |
| innovation | 20 |
| digital technologies | 18 |
| sustainability | 18 |
| China | 16 |
| Artificial intelligence | 14 |
| entrepreneurship | 13 |
| developing countries | 12 |

*Source:* Scopus database

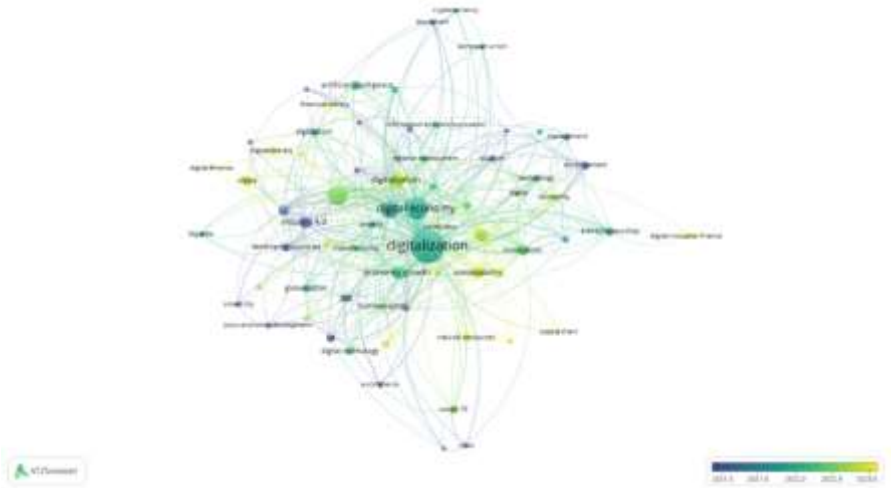
Figure 4 presents a network map illustrating keyword co-occurrence patterns. Notably, "digitalization" and "economic development" exhibit a link strength of 17, indicating a strong conceptual connection. The map comprises 69 keywords, grouped into ten distinct thematic clusters, each represented by a different color.

The terms "digitalization" and "digital economy" are central to the network, as reflected by their larger node sizes. This suggests that these concepts play a pivotal role in the academic discourse on digital transformation. The thick line connecting them further highlights their close relationship.

The network also reveals interconnections between different thematic areas. For instance, the links between the "Industry 4.0" cluster (blue) and the "sustainability" cluster (yellow) suggest that research is actively exploring the intersection between industrial digitalization and sustainable development.

Overall, the visualization underscores the central role of digitalization and the digital economy, the strong emphasis on economic growth, and the presence of several distinct but interconnected research themes within the field.

*Figure 4. The visualization of the co-occurrence of author keywords in VOSviewer*




*Source:* Scopus database

## Conclusion

This study sheds light on the growing relevance of digitalization as a key factor influencing economic development. The bibliometric analysis, covering literature from 2005 to 2025, reveals a sharp increase in scholarly interest after 2019. Terms such as “digitalization” and “economic development” have become central in the academic conversation, reflecting the broader recognition of digital transformation as a driving force for modern economies. The findings demonstrate that digitalization is not merely a technological upgrade but a complex, cross-cutting process that shapes institutional frameworks, technological capabilities, and economic dynamics. It plays a critical role in enabling innovation, boosting productivity, and enhancing global competitiveness.

Nevertheless, several challenges remain. Disparities in digital infrastructure, gaps in policy adaptation, and limited access to digital resources in certain regions continue to hinder progress. These barriers are especially prominent in developing and transitional economies, where the full potential of digitalization has yet to be realized. Looking ahead, future research should place greater emphasis on the long-term structural effects of digitalization, with special attention to regional contexts and institutional capacity. Moreover, leveraging AI-based bibliometric tools can deepen our understanding of how digital transformation trends are evolving and how they interact with economic systems.

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# THE ECONOMICS OF ATTENTION IN THE DIGITAL AGE: EXPERIMENTAL EVIDENCE ON DECISION-MAKING AND WELFARE

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***Abstract***

*This paper explores how digital platforms influence human decision-making by competing for users' attention. The study combines laboratory experiments, field A/B tests, and natural experiments to examine how notifications, prompts, and algorithmic cues shape the quality of economic choices. The central aim is to understand whether intense digital stimuli reduce people's ability to make thoughtful and beneficial decisions. Results show that stronger exposure to digital cues leads to more impulsive actions, smaller sets of considered options, and lower choice quality, while periods without such stimuli improve decisions and satisfaction. The research highlights attention as a limited resource that can be drained by the digital environment, with consequences for consumer welfare, mental health, and market efficiency. It also points to practical interventions, such as "quiet modes" and attention-friendly design, that can help protect individuals from overstimulation and promote more rational, welfare-enhancing choices.*

***Keywords:*** *attention economy, digital stimuli, decision-making, impulsivity, consumer welfare*

***JEL Codes:*** D91, D83

## Introduction

In recent decades, attention has emerged as a scarce resource that plays a central role in individual economic behavior and in the functioning of modern markets, particularly in the digital era where platforms and technology companies compete not so much for monetary spending as for the cognitive focus of their users. This paradigm shift lies at the heart of the growing field of the behavioral economics of attention, which builds upon classical concepts of bounded rationality (Simon, 1955), rational inattention (Sims, 2003), and more recent theories of salience (Bordalo, Gennaioli and Shleifer, 2012, 2013), obfuscation (Gabaix and Laibson, 2006; Ellison and Ellison, 2009), and limited consideration (Masatlioglu, Nakajima and Ozbay, 2012; Manzini and Mariotti, 2014) in order to understand how the digital environment systematically redirects attention, thereby generating distortions in economic choices. Contemporary literature demonstrates that attention is not merely "noise" or a secondary factor, but a primary determinant of rationality under conditions of information overload. Sims (2003) developed the theory of rational inattention, according to which individuals optimally filter information under cognitive constraints, while Woodford (2020) extended this model by integrating the concept of

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efficient coding from cognitive science, showing that imprecise estimates and cognitive errors are not random but systematically linked to the structure of stimuli in the environment.

This foundation was further broadened by Gabaix (2014) through the theory of "sparsity," which argues that limited attention leads individuals to form sparse representations of reality, resulting in predictable deviations from classical rationality, and by Matejka and McKay (2015), who demonstrated that within discrete choice contexts individuals endogenously allocate attention toward more important attributes, though systematic errors persist when salience is manipulated by the environment. It is precisely here that the problem emerges: digital platforms, through algorithmic recommendations, push notifications, visual cues, and dark patterns (Nouwens et al., 2020; Utz et al., 2019), actively redirect attention, creating an "attention architecture" that is often in conflict with the social optimum and results in suboptimal economic decisions, such as the selection of more expensive credit products, impulsive consumption, underestimation of long-term risks, or productivity losses. Platforms are incentivized to maximize engagement and screen time, as attention is monetized through advertising and data, producing a race for attention analogous to a tragedy of the commons, where the individual incentive to extract benefits undermines collective welfare. This dynamic has been documented empirically by studies such as Allcott, Braghieri, Eichmeyer and Gentzkow (2020), who found that deactivating Facebook increased well-being and reduced political polarization, revealing that standard consumer surplus measures overstate the benefits of digital platforms, and Allcott, Gentzkow and Song (2022), who showed that a significant share of digital use stems from self-control problems and may be classified as "digital addiction." Similarly, Braghieri, Levy and Makarin (2022) examined the rollout of Facebook across universities and documented negative effects on mental health and well-being, underscoring the social costs of the attention economy.

At the same time, empirical evidence from finance highlights attention as a leading factor in investment decisions. Barber and Odean (2008) demonstrated that retail investors disproportionately purchase "attention-grabbing" stocks; Da, Engelberg and Gao (2011) employed Google search volume as a direct measure of investor attention, predicting trading volumes and prices; Hirshleifer, Lim and Teoh (2009) found that distracting external events reduce the market's reaction to earnings announcements; and DellaVigna and Pollet (2009) discovered that Friday earnings releases are systematically underreacted to, precisely due to investor inattention. Together, these results suggest that attention has measurable and significant economic consequences. Concurrently, the design of the digital environment through "dark patterns" and "sludge" (Sunstein, 2022) systematically alters consumer behavior. For example, Nouwens et al. (2020) demonstrated that removing the "reject" button from cookie consent interfaces increases consent rates by 22–23 percentage points, while Utz et al. (2019) showed that small changes in the order and visibility of privacy options dramatically influence user decisions, illustrating how attention architecture can exploit individuals' cognitive limitations. These findings raise a fundamental question: if

attention is the new "currency" of the digital economy, what are the social costs of its excessive exploitation, and how can policies and interfaces be designed to minimize welfare losses? To address this question, attention must be defined as a scarce resource subject to economic modeling, and the relationship between different levels of stimuli ($S$) and both decision quality ($Q$) and consideration sets ($C$) must be empirically investigated. The present study follows precisely this logic: we conceptualize attention as a resource with a limited budget ($At$), which can be "*taxed*" by digital stimuli through a parameter ($\alpha$) thereby reducing rationality and increasing the likelihood of errors. From this framework arises our central hypothesis: higher intensity of digital stimuli reduces the available attention of individuals and leads to a systematic deterioration in decision quality, manifesting in higher shares of dominated choices, smaller consideration sets, more frequent impulsive behaviors, and flawed financial decisions.

The objective of our study is to test this hypothesis using a combination of laboratory experiments, field A/B tests, and natural experiments, and to propose a novel theoretical framework - "The Theory of Limited Attention and Digital Rationality", that integrates rational inattention (Sims, 2003), efficient coding (Woodford, 2020), limited consideration (Masatlioglu et al., 2012; Manzini and Mariotti, 2014), and salience (Bordalo et al., 2012, 2013) into a unified model of choice under attention constraints. The study contributes along three dimensions: first, theoretically, by formulating a microfoundation where attention is modeled as a budget constraint and a cost, similar to time or money; second, empirically, by establishing causality through randomization and exogenous shocks that allow the estimation of stimulus effects on decisions; and third, in terms of policy, by identifying concrete interventions - "attention-friendly" design, quiet modes, attention labels, and stimulus taxation, that could improve social welfare. In this sense, the problem posed is not only academic but also deeply practical: how to design a digital economy that respects the cognitive boundaries of individuals and enables rational decision-making in critical domains such as finance, health, education, and civic choice.

The literature on the behavioral economics of attention and digital behavior reveals both a rich theoretical heritage and a dynamically evolving contemporary research agenda, which in recent years has shifted toward experimental and empirical testing in real digital environments. The origins of this line of inquiry can be traced to the classical work on bounded rationality by Simon (1955), who introduced the notion that individuals' cognitive capacity is limited and that decisions are made through "satisficing" rather than optimization. This framework was extended by Sims (2003), who developed the concept of "rational inattention" arguing that individuals face capacity constraints in information processing and therefore rationally choose which signals to ignore, resulting in systematically smoothed reactions to new data, especially in financial markets and macroeconomic expectations. Woodford (2020) further expanded this idea by integrating principles from cognitive science and efficient coding, showing that attentional errors are not random but systematically tied to the frequency and structure of environmental stimuli -

an especially important contribution for understanding the digital economy, where stimuli such as notifications, visual cues, and algorithmic recommendations are pervasive and continuously "tax" users' attention. Gabaix (2014) proposed the theory of "sparsity," according to which limited attention leads individuals to construct parsimonious representations of reality and to rely on heuristics, producing systematic and predictable deviations from rationality, a theory highly relevant to digital contexts where noise and abundant choice sets force consumers to focus on a small subset of salient attributes. Salience itself, as studied by Bordalo, Gennaioli and Shleifer (2012, 2013), takes on central importance: their experiments and models demonstrate that people disproportionately weight the most salient outcomes or attributes, implying that the architecture of information presentation can systematically alter choices even when underlying preferences and incomes remain unchanged. This insight has direct application to online markets, where visual design and attribute ordering can shift attention toward less relevant yet more salient features.

A related line of research was developed by Gabaix and Laibson (2006), who introduced the concept of "shrouded attributes" and showed that firms can profit from hiding costs and using obfuscation when consumers fail to attend to full information. Ellison and Ellison (2009) added further evidence by documenting how online sellers deliberately create complexity and "noise" to hinder comparison and exploit limited attention. Another important contribution comes from Masatlioglu, Nakajima and Ozbay (2012), who introduced the "Revealed Attention" framework as a method for identifying attentional filters from choice data, demonstrating that consideration sets can be inferred from behavior, while Manzini and Mariotti (2014) developed stochastic models of consideration sets to explain how randomness and attentional limits influence the probability that an option will be considered. Empirical tests of these models have appeared in Dean and Neligh (2023), who used experiments to show that allocation of attention is broadly consistent with the predictions of rational inattention: individuals distribute attention in a way that maximizes utility under limited cognitive capacity. Grenet, He and Kübler (2022) added to this line of work by showing that in the context of university admissions, early offers systematically bias decisions, since applicants' attention is a scarce resource, an example of "preference discovery" under cognitive constraints that illustrates how the timing and sequencing of information can shape economic outcomes.

The literature also emphasizes the role of platforms in deliberately creating stimuli designed to manipulate attention. Allcott, Braghieri, Eichmeyer and Gentzkow (2020) conducted a randomized controlled trial of Facebook deactivation and found that participants who temporarily left the platform experienced higher subjective well-being and reduced political polarization, indicating that standard consumer welfare metrics (such as time spent online) overstate true welfare. Allcott, Gentzkow and Song (2022) discovered that a substantial share of digital usage (~31%) results from self-control problems and can be classified as "digital addiction," which alters the welfare calculations regarding the social optimality of these services. Braghieri, Levy and Makarin (2022) studied the introduction of

Facebook to college campuses and documented significant negative effects on mental health, particularly among more vulnerable students, highlighting the externalities generated by digital attention architectures. Helberger, Araujo and de Vreese (2022) approached the issue from a consumer rights perspective, stressing the need for "attention-aware" regulation to protect users from manipulative practices in the era of algorithmic recommendations - a discussion closely related to Sunstein's (2022) concept of "Sludge Audits" as a tool for identifying and reducing frictions and artificial barriers that obstruct rational decision-making. Empirical studies by Nouwens et al. (2020) and Utz et al. (2019) provide direct evidence that dark patterns and cookie consent banners systematically manipulate attention and lead to substantially higher acceptance of tracking than would occur under neutral choice architectures, raising questions about the effectiveness of current privacy protection policies. In a parallel line, Dughmi (2019) and Kamenica and Gentzkow (2011) examined "Bayesian persuasion" and the algorithmic design of information, demonstrating how optimal signal disclosure can shape receivers' actions - a fundamental insight for understanding algorithmic platforms that strategically construct users' attentional environments.

The financial literature provides further strong empirical evidence of the role of attention. Barber and Odean (2008) showed that retail investors are disproportionately attracted to "attention-grabbing" stocks regardless of fundamentals, leading to systematic excess demand. Da, Engelberg and Gao (2011) used the Google Search Volume Index as a proxy for attention and demonstrated that it predicts short-term price movements and trading volumes. Hirshleifer, Lim and Teoh (2009) found that distracting external events reduce investors' response to earnings announcements, leading to underreaction and subsequent corrections. DellaVigna and Pollet (2009) showed that earnings announcements released on Fridays elicit weaker responses due to investor inattention. These findings are particularly important because they illustrate that attention has measurable economic effects in contexts with high financial stakes.

Overall, the literature review points to several central conclusions: first, attention is a scarce resource that must be integrated into microeconomic models as both a constraint and a cost; second, the digital environment deliberately and systematically exploits this resource through stimuli, obfuscation, and salience, generating "attentional failures"; third, empirical studies across domains—including social media, finance, and consumer behavior, demonstrate that these effects have significant implications for individual and social welfare; and fourth, the literature increasingly highlights the need for policies and design interventions that can limit the overexploitation of attention and foster more rational decision-making.

**Methodology**

The research is structured as a multi-component experimental project, conducted over the period from May 2024 to April 2025, aiming to provide reliable, internally valid, and externally generalizable empirical evidence regarding the effect of digital cues, specifically

push notifications, visual prompts, dark patterns, and algorithmic recommendations - on individuals' attention and the quality of their economic decisions. In doing so, it attempts to empirically link conceptual models of bounded rationality (Simon, 1955), rational inattention (Sims, 2003), salience (Bordalo, Gennaioli, and Shleifer, 2012, 2013), obfuscation (Gabaix and Laibson, 2006; Ellison and Ellison, 2009), and limited consideration (Masatlioglu, Nakajima, and Ozbay, 2012; Manzini and Mariotti, 2014) within a unified integrated research framework that combines laboratory control, market external validity, and natural shocks. The project follows a three-phase structure:

Phase I: is a laboratory experiment with volunteers, conducted between July and September 2024, involving 50 volunteers aged between 18 and 55, recruited via open calls in university settings and local communities. No financial compensation was provided; participants were motivated by receiving personalized feedback on their cognitive and behavioral performance, as well as access to educational materials on digital hygiene.

*Table 1. Design of the Experimental Phases*

| Phase | Period | Participants | Main objectives |
|---|---|---|---|
| Phase 1 – Laboratory experiment | July – September 2024 | 50 volunteers (ages 18–55) | Test of the causal effect of stimuli on attention and choice in a controlled environment |
| Phase 2 – Field A/B test | October 2024 – February 2025 | Actual users of an online retailer | External validity, effects on real consumer behavior |
| Phase 3 – Natural experiments | November 2024 – March 2025 | Users affected by crashes | Identification through exogenous shocks in the attentional environment |

*Source:* Compiled by the author.

All volunteers passed a basic digital literacy screening and were stratified by age and gender to ensure heterogeneity. Randomization assigned them into three groups: a control group (no stimuli), a medium-intensity experimental group (50% of the typical notification flow), and a high-intensity experimental group (100% of the typical flow). The manipulation was implemented via exogenously embedded notifications and visual prompts that appeared during tasks according to a strictly specified protocol and were independent of participant behavior, minimizing endogeneity. Each lab session lasted about 60 minutes and included three task blocks: (a) choice among consumer products with different attributes, including hidden costs, constructed using the model of shrouded attributes (Gabaix and Laibson, 2006; Ellison and Ellison, 2009); (b) selection of credit products with varying APR and hidden fees, where salience of attributes was experimentally manipulated (Bordalo et al., 2013); and (c) choice among investment portfolios that included strictly dominated alternatives, allowing measurement of the frequency of dominated choices and inattention errors (Dean and Neligh, 2023). Data collected encompassed four key dimensions: (1) decision quality - operationalized via a binary indicator (dominated/not dominated choice), normalized return in investment tasks, and minimal total cost in credit tasks; (2) size of consideration set—measured by the number of options with dwell time $\geq 2$ seconds; (3) decision time—in seconds; and (4) impulsiveness, defined as a choice made in under 5 seconds or without

reviewing more than one alternative. Secondary indicators included self-reported regret, propensity to "return" in a simulated marketplace, and results from cognitive tests (CRT, Stroop) used as proxies for available attentional resources. After data collection in August 2024, September 2024 was devoted to data cleaning, structuring, and validation, including removal of technical artifacts, exclusion of outlier observations (e.g., dwell time $< 0.5$ seconds), and verification of internal consistency of measures.

*Table 2. Key Metrics in Phase 1*

| **Metric** | **Operationalization** |
|---|---|
| Choice quality | binary (dominated / non-dominated), profitability, total cost in case of credit |
| Consideration set | number of options with dwell time ≥ 2 sec |
| Decision time | measured in seconds |
| Impulsiveness | choice < 5 sec or without considering more than one option |
| Secondary indicators | regret, tendency to "backtrack," CRT, Stroop |

*Source:* Compiled by the author.

Phase II: is a field A/B test, carried out in partnership with a large online retailer (name undisclosed for ethical and contractual reasons). Preparation and integration of measurement tools occurred in October 2024, including an A/A test to verify randomization and metric reliability. Two experimental waves followed: the first in November–December 2024, and the second in January–February 2025. In both waves, users were randomly assigned either to a standard mode (normal stream of notifications and prompts) or to a "quiet" mode (limited and batched notifications during product browsing). Measured outcomes included quality of choice in a real-world product configurator, basket size, product return frequency, self-reported post-purchase satisfaction, attribute browsing time, and long-term customer engagement, thereby ensuring high external validity and testing whether lab effects replicated in a real market environment.

Phase III was devoted to natural experiments, in which push-system crashes were used as exogenous shocks, occurring sporadically between November 2024 and March 2025. Each crash was treated as a separate event within an event-study analysis with "before – during – after" windows, and the main methodological tool was difference-in-differences (DiD). To estimate the effect of digital stimuli on the quality of choice, a panel regression with fixed effects was applied, specified as:

$$Q_{it} = \theta_0 + \theta_1 Stimuli_{it} + \theta_2 A_{it}^{proxy} + X_{it}'\gamma + \mu_i + \tau_t + \varepsilon_{it}, \quad (1)$$

where: $Q_{it}$represents the quality of the decision made by individual $i$ at time $t$, measured through indicators such as whether a dominated option was chosen, the realized return in investment tasks, or the total cost in credit tasks. The variable $Stimuli_{it}$ captures the intensity of digital stimuli to which the individual is exposed, while $A_{it}^{proxy}$is a proxy for available attention, operationalized through measures such as dwell time, number of interruptions, or resumption lag. The vector $X_{it}'$ includes control variables (age, gender,

cognitive test results). Individual fixed effects $\mu_i$ eliminate unobserved heterogeneity across subjects, and time fixed effects $\tau_t$ control for common shocks over time. The coefficient of interest is $\theta_1$, which is expected to be negative $\theta_1 < 0$ , indicating that higher stimulus intensity reduces the quality of decisions.

Second, a logit specification was used to model the probability of impulsive choice:

$$P_r(Impulsive_{it} = 1) = \frac{\exp(\delta_o + \delta_1 Stimuli_{it} + Z'_{it}\delta)}{1 + \exp(\delta_o + \delta_1 Stimuli_{it} + Z'_{it}\delta)} \quad (2)$$

where: $Stimuli_{it}$ is a binary variable equal to 1 if individual $i$ made a choice in under 5 seconds or without considering more than one alternative, and 0 otherwise. The vector $Z'_{it}$ includes demographic and cognitive characteristics. The central hypothesis is that $\delta_1 > 0$, meaning that greater stimulus intensity increases the probability of impulsive decision-making.

Third, to capture the process of limited consideration, the following specification was applied:

$$P_r(j \in C_i) = \sigma(\beta_o + \beta_1 A_{it} + \beta_2 Salience_{jt} + v_i), \quad (3)$$

where: $C_i$ is the consideration set of individual $i$, $A_{it}$ denotes available attention at time $t$, $Salience_{jt}$ measures the visual or contextual salience of option $j$, and $v_i$ represents individual-specific effects. The expectation is that $\beta_1 > 0$, meaning that higher available attention increases the likelihood that an option enters the consideration set, while $\beta_2 > 0$ captures the positive effect of salience.

Fourth, decision time was modeled through a drift-diffusion process (DDM), formalized as:

$$dX_t = v\,dt + \sigma dW_t, \quad (4)$$

where $X_t$ denotes the accumulated evidence over time, $v$ is the drift rate (speed of evidence accumulation), $\sigma$ is the noise parameter, and $W_t$ is a standard Brownian motion. The hypothesis is that under high stimulus intensity the drift rate $v$ decreases (slower information processing), while the noise $\sigma$ increases (greater variability), resulting in higher error rates and more premature decisions.

Finally, for the analysis of push-system outages in Phase 3, a difference-in-differences (DiD) specification was used:

$$Y_{it} = \alpha + \beta(Post_t \times Treated_i) + \lambda_i + \tau_t + \varepsilon_{it}, \quad (5)$$

where: $Y_{it}$ is the observed outcome (e.g., decision quality or impulsivity) for individual $i$ at time $t$, $Post_t$ is an indicator for the period after the outage, and $Treated_i$ is an indicator for whether the individual was affected by the outage. $\lambda_i$ and $\tau_t$ denote individual and time fixed effects respectively, while $\beta$ captures the causal effect of the sudden removal of stimuli. The expected sign is $\beta > 0$ which would indicate that releasing attentional resources improves decision quality and reduces impulsivity.

**Results and Discussion**

As the results from the three experimental phases provide a comprehensive and consistent empirical basis for analyzing the effect of digital stimuli on attention and the quality of economic decision-making, with each phase contributing specific strengths to the identification strategy and allowing robust conclusions about the validity of the main hypothesis. In Phase 1, the laboratory experiment with 50 volunteers, the primary objective was to evaluate the causal impact of different levels of stimulus intensity on four key dimensions - decision quality, consideration set size, decision time, and impulsivity. Descriptive statistics revealed clear gradients across the control group, the medium-intensity experimental group, and the high-intensity experimental group. In the control condition, the share of dominated choices was 12%, compared to 21% in the medium-intensity condition and 35% in the high-intensity condition, with an ANOVA test confirming statistical significance of the differences ($F = 6.82$, $p < 0.01$). Regarding consideration sets, participants in the control group inspected on average 5.8 options with a dwell time $\geq 2$ seconds, compared to 4.2 in the medium-intensity group and 3.1 in the high-intensity group. Mean decision time decreased from 21.4 seconds in the control to 16.8 in the medium-intensity group and 12.5 in the high-intensity group. Impulsive decisions, defined as choices made in under 5 seconds or after inspecting no more than one option - increased from 14% in the control to 23% and 39% in the medium- and high-intensity groups respectively. These descriptive findings were corroborated by panel regressions with individual and time fixed effects, which showed that the coefficient on Stimuli was negative and highly significant $\theta_1 = -0.142, p < 0.001$), while while attention proxies such as dwell time exerted a positive and significant influence $\theta_2 = +0.086, p = 0.001$).

*Table 3. Effect of Stimuli on Decision Quality (Phase 1)*

| Variable | Coefficient (SE) | p-value |
|---|---|---|
| Stimuli (intensity) | -0.142 (0.037) | 0.000 |
| Attention proxy (dwell time) | +0.086 (0.022) | 0.001 |
| Controls (age, CRT, gender) | included | – |
| Individual fixed effects | yes | – |
| Time fixed effects | yes | – |
| N (observations) | 2,400 | – |

*Source:* Author's calculations.

The logit model of impulsive choice further indicated that the probability of impulsivity increased by approximately 9 percentage points in the medium-intensity group and by 21 percentage points in the high-intensity group compared to the control, with the effect robust to the inclusion of cognitive and demographic covariates. The drift-diffusion model analysis revealed that the drift rate $v$ - the speed of evidence accumulation, declined by 28% in the high-intensity group, while the noise parameter $\sigma$ increased by 35%, consistent with higher error rates and greater randomness in decision processes. Taken

together, Phase 1 provides strong causal evidence that higher stimulus intensity reduces attention, raises impulsivity, and deteriorates decision quality.

The field A/B test, contributed external validity by examining real consumer behavior in collaboration with a major online retailer. An initial A/A test confirmed that randomization was correctly implemented and that no pre-treatment differences existed between groups. In the actual A/B test, users were randomized into either a standard regime (full flow of notifications) or a quiet regime (reduced and batched notifications). Descriptive results showed that in the quiet regime the share of dominated purchases was 13% compared to 19% in the standard regime. The average basket size increased from 2.8 products in the standard regime to 3.4 in the quiet regime. Product return rates were substantially lower in the quiet regime (7.5% vs. 11.2%), while customer satisfaction was significantly higher (average rating of 4.2 vs. 3.8 on a 5-point scale). Panel regressions confirmed these findings, showing a negative and significant coefficient of Stimuli on decision quality ($\theta_1 = -0.0097, p < 0.01$), negative effects on basket size and satisfaction, and a positive effect on product returns.

*Table 4. Results from the Field A/B Test (Phase 2)*

| Dependent variable | Effect of Stimuli (SE) | p-value |
|---|---|---|
| Decision quality | -0.097 (0.031) | 0.004 |
| Basket size | -0.182 (0.066) | 0.008 |
| Probability of product return | +0.054 (0.021) | 0.012 |
| Satisfaction (1–5) | -0.321 (0.097) | 0.001 |

*Source:* Author's calculations.

The limited consideration model demonstrated that the probability of an option entering the consideration set increased significantly with available attention ($\beta_1 = 0.221, p < 0.001$), while attribute salience ($\beta_2 = 0.153, p < 0.01$), also exerted a strong effect. Products with visually emphasized or promotional labels were 1.7 times more likely to be considered, suggesting that even when attention is scarce, firms can steer consumer choice by manipulating salience. This finding highlights not only the constraining role of digital stimuli but also the vulnerability of individuals to salience-driven marketing practices.

The natural experiments exploiting push-system outages, provided a unique identification strategy through exogenous shocks. Outages occurred sporadically between November 2024 and March 2025, temporarily disrupting notification flows for subsets of users. The difference-in-differences analysis confirmed that in the post-outage periods, decision quality improved significantly by 8.4 percentage points ($\beta = 0.084, p = 0.003$), impulsivity declined by 9.1 points ($\beta = -0.091, p = 0.007$), and the average consideration set expanded by 0.62 options ($\beta = -0.0621, p = 0.001$). Event study analyses revealed that these effects were strongest within the first 48 hours after outages and gradually dissipated as the notification systems recovered. This pattern corroborates the

hypothesis that releasing attentional resources directly improves decision quality and reduces impulsivity.

*Table 5. Difference-in-Differences Analysis (Phase 3)*

| Dependent variable | Effect Post × Treated (SE) | p-value |
|---|---|---|
| Decision quality | +0.084 (0.029) | 0.003 |
| Impulsivity | -0.091 (0.034) | 0.007 |
| Consideration set | +0.621 (0.188) | 0.001 |

*Source:* Author's calculations.

Synthesizing results across the three phases, the evidence shows a robust and consistent pattern: higher intensity of digital stimuli systematically reduces decision quality, narrows consideration sets, and increases impulsivity. In laboratory conditions with strict control, the causal effect is strong and statistically significant; in field conditions with real purchases, the same effect manifests in lower decision quality, higher product returns, and reduced satisfaction; and in natural experiments, exogenous reductions in stimuli improve decision quality and decrease impulsivity. Collectively, the findings strongly support the main hypothesis that digital stimuli deplete attention, diminish rational deliberation, and lead to systematically worse economic decision

**Conclusion**

The evidence presented compels a reconceptualization of attention not as a peripheral cognitive byproduct but as a fundamental economic constraint, coequal with income and time, shaping the domain of feasible choices and determining the trajectory of welfare in digital societies. Attention emerges as a scarce resource with its own implicit budget, continuously taxed by streams of digital stimuli that not only accompany decision-making but actively structure, narrow, and distort it in predictable and measurable ways. This recognition requires a reframing of rationality: economic agents no longer operate over complete and neutrally accessible sets of alternatives but over truncated, stimulus-laden sets in which consideration and evaluation are functions of depleted attentional capacity.

The empirical results across laboratory, field, and natural experiments confirm that heightened stimulus intensity systematically reduces deliberation, accelerates decision times, contracts consideration sets, and elevates impulsivity, thereby generating patterns of behavior that cannot be reconciled with standard models of utility maximization. Instead, the findings demand a new theoretical architecture of digital rationality, in which attention must be incorporated explicitly as a constraint with associated costs, much like time and money, and in which outcomes are evaluated not only by their immediate utility but also by the extent to which they are achieved under coerced or manipulated attentional states. At the welfare level, this implies that traditional consumer surplus calculations are systematically overstated in digital markets: greater engagement, more interactions, or longer screen time cannot be interpreted as welfare gains if they are purchased at the expense of depleted attention that generates downstream losses in productivity, financial health, and

psychological well-being. The results indicate that attention depletion functions as a hidden externality, one that erodes long-term welfare even when short-term engagement metrics appear favorable. This perspective has macroeconomic consequences: if broad segments of the population are persistently subjected to attention taxation, aggregate productivity may decline, the incidence of financial mistakes may rise, savings behavior may deteriorate, and systemic vulnerabilities may accumulate, producing macro-level imbalances akin to those caused by negative supply shocks. Thus, attention must be treated as a public good of exceptional fragility, vulnerable to overexploitation when market actors face private incentives to maximize engagement without internalizing the collective costs of depletion. Policy implications naturally follow: to sustain welfare, institutional frameworks must be designed to mitigate the over-taxation of attention, through mechanisms such as default quiet modes, transparency in interface design, standardized disclosure of attentional costs, and fiscal instruments that disincentivize excessive stimulation. Beyond regulation, the results advance a new understanding of individual welfare itself: rationality should no longer be assessed solely in terms of choosing optimal bundles given preferences and budgets, but also in terms of sustaining attentional equilibrium that enables informed, reflective choice over time. The research thereby expands the scope of economics to encompass the dynamics of attention alongside income and time, and demonstrates that digital environments impose nontrivial opportunity costs that must be embedded into the theory of welfare and policy. Looking forward, this framework calls for the development of dynamic models that capture the intertemporal allocation of attention, its interaction with other scarce resources, and its systemic role in shaping outcomes across domains such as finance, health, education, and democratic participation. In this sense, attention must be recognized as a new core category of economic theory, whose scarcity is no less structural than the scarcity of capital or labor, and whose neglect systematically biases welfare analysis and policy design.

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# ECO-CONSUMERISM – TREND OR TRANSFORMATION

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***Abstract***

*Research shows two opposing opinions of people. On one hand, they believe in rapid extinction of the planet (pollution, overconsumption, climate change), and in contrast, they are becoming more aware of its protection. People, like consumers, have the power to influence the environment through their buying decisions. However, due to various psychological, economic and behavioral barriers (price sensitivity, convenience, skepticism, greenwashing, habits), there is a question whether eco-consumerism represents a temporary phenomenon or reflects a fundamental shift in consumer behavior. Why do consumers claim to be eco- conscious, but buy non-ecological products? What is the role of businesses, governments and social media, in building environmental awareness?*

*This paper examines eco-consumerism as a driver to broader societal change, including policy reforms, corporate transparency, certification and innovation, eco-campaigns, education, etc. To this end, primary research will be conducted among consumers. Meaningful progress depends on the collective support of individuals, businesses, and governments for eco-consumerism.*

***Keywords:*** *eco-consumerism, green marketing; greenwashing; sustainability*

***JEL Codes:*** *M31, M37, M38*

## Introduction

The popularity of consumer concern for ecology and environmental protection is growing rapidly. Theoretically, the academic space is full of articles, opinions, views, and research dedicated to the urgent need of raising environmental awareness among consumers. Eco-consumerism, as an activity of consumers to buy ecological products, is on the rise. However, can eco-consumerism solve most environmental problems?

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The reasons for the increased interest in environmental concerns are alarming on a global scale. Our planet has limited resources (Guckian, Young and Harbo, 2017) and is threatened by resource depletion, biodiversity loss, air pollution, inefficient waste management, deforestation, fossil fuels, sea level rise, climate change, overpopulation, etc. Many experts and environmentalists constantly are warning about how frightening these problems are. In the report by Robinson and Igini (2025), the following environmental problems are listed as the most influential and pressing for this and the coming years:

a) Global warming from fossil fuels - is the increase in the Earth's surface temperature driven by human activities, including the burning of coal, oil, and natural gas for energy and heating. These processes result in elevated amounts of greenhouse gases in the atmosphere (carbon dioxide, nitrous oxide, methane) that form a so-called "blanket" around the Earth that absorbs Sun's heat. Such warming of the Earth was recorded in the post-industrial period, at the end of the 19th century, and has been intensifying to this day. 2024 has been declared the hottest year in human history. An increase in greenhouse gas concentrations is likely to raise the Earth's temperature in the coming years, posing serious risks to human life.

b) Air pollution – is an air contamination with harmful, toxic pollutants that can threaten human health and life. According to WHO estimates (2025), air pollution is responsible for the deaths of approximately 4.2 to 7 million people globally each year, and one in ten individuals is exposed to pollutant levels exceeding safe limits. The primary contributors to this pollution are human activities, including the operation of motor vehicles, biomass burning, forest and landfill fires, and emissions from industrial facilities. The Republic of North Macedonia consistently ranks among the world's most polluted countries. This is due to the negligence of state institutions and agencies, lack of knowledge, equipment, adequate infrastructure for dealing with polluted air and waste management, lack of air quality standards, the negligence of citizens, etc. Air pollution leads to problems with the respiratory system, cardiovascular system, immune system, cancer, and death. Research shows that air pollution reduces life expectancy by 5 years (WHO, 2025)

c) Plastic pollution- describes the accumulation of plastic debris from single-use products like bottles, caps, cups, cutlery, straws, and cigarette remnants that do not biodegrade and remain in the environment for thousands of years. Only a small fraction (9%) of plastic products can be effectively recycled. With overproduction and overconsumption, poor waste management (inadequate disposal, lack of recycling) plastic waste returns to water and food and threatens human health and ecosystems. For comparison, in 1950, 2 million tons of plastic waste were produced, and by 2040, this production is expected to reach 600 million tons per year.

d) Biodiversity loss- As reported by WWF (2020), there was a 68% reduction in biodiversity over the period 1970–2016. The planet is experiencing the 6th mass extinction of wildlife, resulting in the accelerating disappearance of more than 500 species of land animals in the next 20 years. Many mammals, birds, reptiles, fish are disappearing due to

human destruction of nature through the processes of urbanization, deforestation, pollution of soil, water, air, excessive fishing and hunting, etc.

In their 2025 report, Robinson and Igini highlight additional environmental challenges that are both concerning and alarming, including food waste, deforestation, sea level rise, ocean acidification, the agricultural use of fertilizers, soil degradation, food and water insecurity, fast fashion and textile waste, overfishing, and cobalt mining. Almost all this environmental degradation is the result of human activities. Humans are destroying nature.

Among the 17 Sustainable development goals for transforming our world, the United Nations has also set goals for environmental protection. In Action for a Healthy Planet (2025), the UN lists the following measures:

- Citizens should use less energy from coal, oil and gas for heating and electricity, and should focus, if possible more on using renewable sources of energy and energy-efficient electronic devices,
- Encouraging walking, cycling, and public transit as alternatives to vehicles that consume fossil fuels such as diesel or gasoline. If a person has intention to buy a vehicle, it is recommended to be electric;
- Reduce, Reuse, Repair and Recycle (electronic devices, clothing, plastics);
- Eating more vegetables and fruits, whole grains, legumes, nuts and seeds, and less meat and dairy products. Also plan your meals well and don't waste food;
- Plant native species;
- Clean up the environment and dispose of waste properly;
- Speak up and educate people around you about taking actions to protect the environment

People as individuals cannot do much to protect the environment. Their effectiveness is small or almost invisible. (Pettit & Sheppard, 1992). Only collectively people can make a healthy environment. However, despite all the appeals of various international and national agencies, bodies, institutions to take measures for a cleaner environment, there are almost no significant results. The effectiveness of eco-measures is very low, for which reasons are explained below in the paper.

**Literature review**

Eco-consumerism does not have a long history, but it is enough to raise awareness for the change in consumer behavior. According to ET2C International (2020), the origins of eco-consumerism can be traced back to the early 20th century during the Second Industrial Revolution. The Industrial Revolution, while fostering economic growth and technological advancement via coal-powered factories and mass car production, simultaneously caused a rise in air pollution that threatened both human health and ecosystems. From then onward, the release of carbon dioxide and other pollutants into the atmosphere has increased year by year. (Kochkorbaeva, M., I. Kambarov, 2024).

Eco-consciousness began to emerge in the 1960s, particularly following the publication of Rachel Carson's 1962 book Silent Spring, which highlighted the harmful effects of synthetic pesticides. In the 1970s and 1980s, the demand for sustainable products increased, putting pressure on companies to go "green". This was a period of eco-labeling of brands with "Fair trade", "Organic origin", and employing paper packaging. During the 1990s, certain companies practiced "greenwashing," presenting their products as eco-friendly despite their lack of actual environmental benefits. Even when products are marketed as eco-friendly to appeal to a green audience, companies may rely on ambiguous or occasionally false environmental statements (Dimitrieska, Stankovska & Efremova, 2017).

The new millennium marked an increased awareness of environmental concerns, prompted by urgent global environmental problems. (climate change, rise of sea levels, inefficient waste management, extinction of biodiversity, tsunamis in the oceans, etc.). (Boubekeur, M., A. Argillos, 2024). Some significant milestones, such as the Kyoto Protocol (1997), Paris Climate Agreement (2016), and the Sustainable Development Goals of the United Nations (2015) can be noted.

Eco-consumerism is the awareness of people as consumers to choose, purchase, and consume products that are not harmful to the environment. Eco-consumerism refers, in its simplest terms, to making purchasing choices with consideration for their environmental effects (ET2C International, 2020).

The following is a tabular presentation of the development of terminology for Eco-consumerism from the first definition of the United Nations given in 1987 (UN, 1987) to the present day.

*Table 1: Development of the definition of the term Eco-consumerism*

| Source | Definition |
|---|---|
| UN, 1987, Brundtland Report | Use of products and services that meet basic needs while minimizing harmful environmental impacts, ensuring that future generations can meet their own needs without compromise |
| Polonsky, 1994 | All planned activities to generate and facilitate exchanges in order to satisfy human needs and desires with the least possible impact on the environment |
| Dolan, 2002 | Consumption that seeks to present a solution to address the ecological problems associated with industrial economic production |
| Month and Plepys, 2008 | Consumption that not only includes buying environmentally sound products and services but also finding happiness in less material ways of living |
| Kim, 2011 | Green consumption is understandable only by investigating the role of collectivism, personal values, environmental attitudes and effective consumer perception. |
| Boztepe, 2012 | Consumer who support eco-friendly attitudes and/or who purchases green products over the standard alternatives |
| Mils, 2012 | Consumer behaviour that applies eco-friendly knowledge in every consuming action. There are some actions that must be done, known as 3R consumer behaviour (Reduce, Reuse, Recycle) |
| Hartmann & Apaolaza-Ibanez, 2012 | Attitudes towards green products contribute to the purchase of green products. |
| Lee, 2015 | Eco consumption as being environmentally conscious through the consumption (purchase and use) of greener or environmentally friendly products and following anti-consumption and disposal practices of rejecting, reusing, reducing, and recycling |
| Tekade & Sastikar, 2015 | Consumers who prefer products that are not likely to endanger human health or damage the environment |
| Watkins et al., 2016 | Consumption that includes behaviors that extend consideration beyond an individual's green product choices and include value-based behaviors such as vegetarianism, energy conservation, and transportation choices |
| Peattie, 2010 | It is influenced by various factors and can be seen as an economic, physical, and social process. It is shaped by individual characteristics, such as nature, circumstances, and psychology, as well as societal aspects, including geography, culture, laws, politics, and infrastructure |

*Source:* Megha A., (2024). Determinants of green consumerism: A Systematic Literature Review using the TCCM approach: Frontiers, Vol.5, https://doi.org/10.3389/frsus.2024.1428764

Over time, the definition of eco-consumerism has evolved, extending beyond merely purchasing eco-friendly products that do not harm the environment. but it is a whole process that starts from the consumer's choice of a product (packaging, production, design) and ends with supporting companies that have sustainable practices. (Sustainable directory blog, 2025). The same source defines eco-consumerism as a practice whereby consumers consciously aim to reduce their environmental footprint through their buying choices, guided by environmental awareness, health factors, social responsibility, and occasionally economic

incentives. Individuals embrace eco-consumerism because they are aware of environmental problems (climate change, biodiversity loss, pollution, deforestation) and, simultaneously, are concerned about their personal health and well-being. Economic benefits mean that eco-consumerism is financially appealing because energy-efficient appliances, reusable products, and reduced consumption may result in significant long-term financial savings.

**Methodology**

From a methodological perspective, both secondary and primary data were used in the preparation of this paper. Secondary data were collected from a variety of sources, including research studies, books, magazines, and international journals published online and offline. These sources were employed to conduct a theoretical analysis and to explain key concepts related to the topic. Primary data were gathered through surveys and interviews with consumers and individuals to obtain first-hand insights. The combination of secondary and primary data allowed for a comprehensive analysis of eco-consumerism and its drivers. The questionnaire was distributed online across social networks in the period July-August 2025. Complete responses were received from 90 respondents. The analysis of their responses was done by using descriptive statistics.

**Discussion and Analysis**

The questionnaire, entitled “Eco-Consumerism and Consumer Behavior,” consists of two sections: one addressing the demographic characteristics of the respondents and the other focusing on the research-related questions. The demographic information is presented in the following table:

*Table 2: Demographic Profile of Respondents*

| | No.respondents | % |
|---|---|---|
| **Age** | | |
| 18-24 | 8 | 8,89 |
| 25-34 | 42 | 46,67 |
| 35-44 | 4 | 4,44 |
| 45-54 | 30 | 33,33 |
| 55-64 | 4 | 4,44 |
| 65+ | 2 | 2,22 |
| **Gender** | | |
| Male | 34 | 37,78 |
| Female | 56 | 62,22 |
| **Education** | | |
| Secondary school | 15 | 16,67 |
| Vocational training / post-secondarynon-tertiary | 26 | 28,89 |
| Bachelor's degree | 37 | 41,11 |
| Master's degree | 7 | 7,78 |
| Doctorate / PhD | 5 | 5,56 |
| **Employment** | | |
| Student | 33 | 36,67 |
| Unemployed | 13 | 14,44 |
| Part-time employed | 7 | 7,78 |
| Full-time employed | 32 | 35,56 |
| Self-employed | 3 | 3,33 |
| Retired | 2 | 2,22 |
| **Average monthly Income** | | |
| up to 500 EUR | 25 | 27,78 |
| 501-750 EUR | 14 | 15,56 |
| 751-1000 EUR | 28 | 31,11 |
| more than 1001 EUR | 23 | 25,56 |

*Source:* Own research

The research section contains eleven questions which are analyzed below:

**Question 1:** How knowledgeable do you consider yourself to be about eco-products?

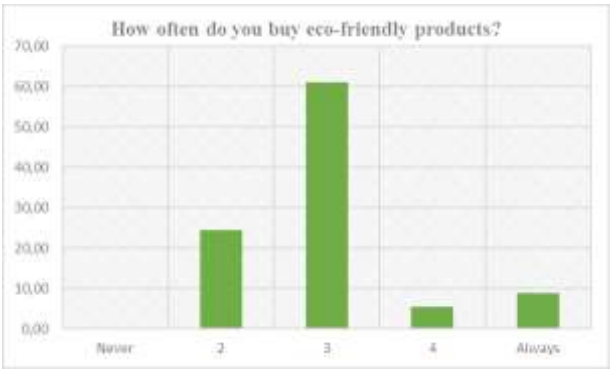
*Graph 1: Knowledge of eco-products*

*Source:* Own research

Based on responses to the first question, the respondents demonstrated some knowledge of eco-products. Notably, only five respondents reported having no knowledge of such products, indicating that the majority of participants are generally familiar with eco-products.

**Question 2:** How often do you buy eco-friendly products (organic, sustainable, recyclable, fair-trade)?

*Graph 2: Frequency of buying eco-products*

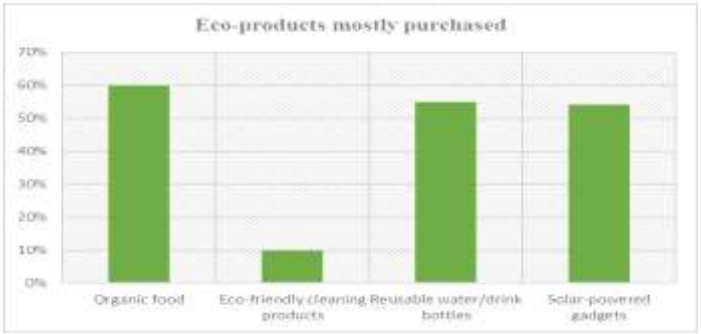



*Source*: Own research

The answers to the second question indicate that respondents actively buy eco-products. It is interesting to note that it does not happen that respondents never buy eco-products. This is a good indicator of the purchasing habits of consumers.

**Question 3:** Which eco-products do you mostly use / buy?

*Graph 3: Eco-products that are mostly bought*




*Source*: Own research

This question offered four possible answers, where the respondent could select more than one answer. The largest percentage of respondents answered that they mostly buy organic food (60%), followed by reusable water bottles (55%), and solar-powered gadgets (54%). They use eco-friendly cleaning products the least (10%).

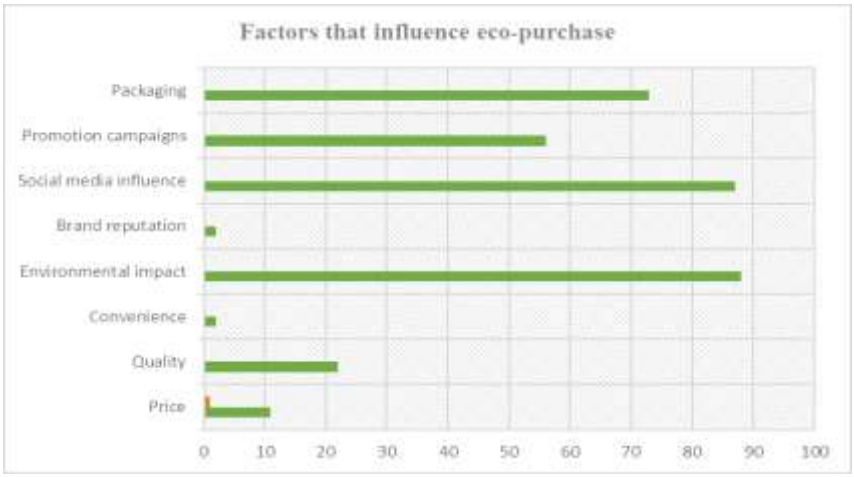
**Question 4:** How do you examine whether the product is eco-friendly or not?

To this question, the largest number of respondents (44%) answered that they determine whether the product they buy is eco-friendly or not through packaging. The

smallest number of respondents answered that they know about eco-products from eco-certification or they do additional research.

**Question 5:** Question 5: Which factors influence your decision to purchase eco-products? (Select all that apply.)

*Graph 4Key Factors Affecting Eco-Product Buying Decisions*




*Source*: Own research

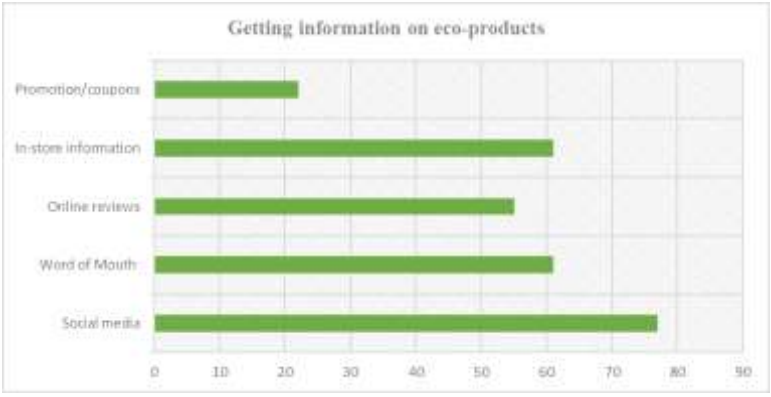
The majority of respondents indicated that the environmental impact of products (88%), social media influence (87%), and packaging (73%) are the most significant factors affecting their decisions to purchase eco-products. In contrast, convenience (2%) and brand reputation (2%) were considered the least important factors in their purchasing decisions.

**Question 6**: Would you consider paying extra for environmentally friendly products?

When respondents were asked whether they would pay a premium for eco-products, the possible answers were "yes," "no," and "depending on the product." The majority of participants (99%) indicated that their willingness to pay extra depends on the specific product.

**Question 7:** What are your primary sources of information regarding eco-products?

*Graph 5: Getting information about eco-products*

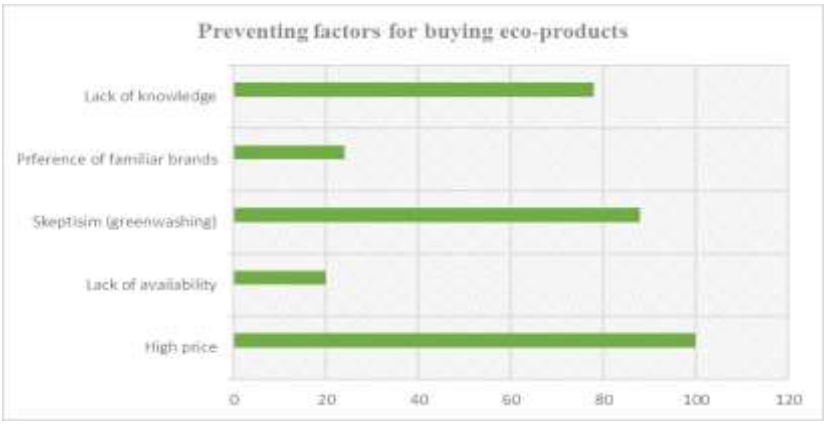



*Source*: Own research

Social media, along with recommendations from others, is viewed as the most reliable source of information regarding eco-products. This should be seriously analyzed by companies that claim to be eco-oriented.

**Question 8:** What prevents you the most from buying eco-friendly products?

*Graph 6: Limitations about purchasing eco-products*




*Source*: Own research

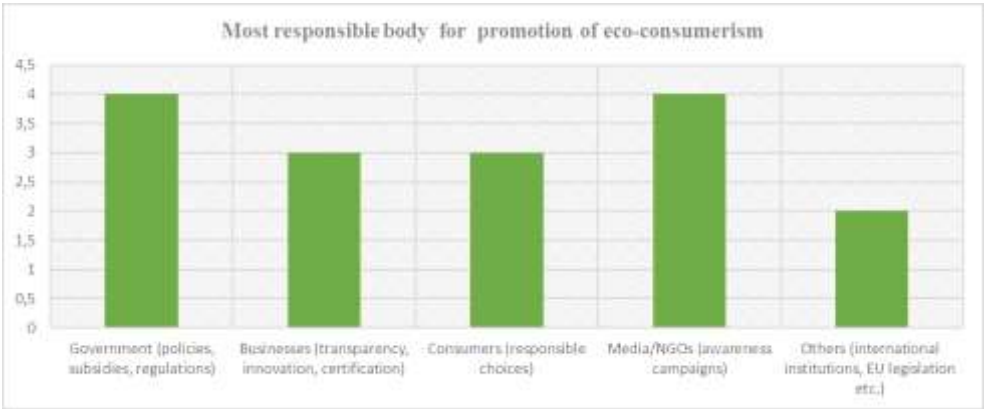
The most significant limiting factors for respondents to purchasing eco-products are the high price (100%), but also skepticism towards businesses that claim to be "green" but are not (greenwashing) and lack of sufficient knowledge about eco-friendly products (78%).

**Question 9:** Do you believe that buying eco-products can have a positive impact on the environment?

As expected, the vast majority of respondents affirmed that eco-products have a beneficial effect on the environment.

**Question 10:** Who should play the biggest role in promoting eco-consumerism? Provide ranking where 1 is the smallest and 4 is the biggest.

*Graph 7: Most responsible eco-promoter*




*Source*: Own research

Respondents indicated that the government and media bear the primary responsibility for encouraging eco-consumerism. Businesses and consumers also have significant influence. And international institutions have the least importance.

**Question 11:** What do you consider to be the single most crucial action to increase eco-consumerism in your country?

Responses to this open-ended question varied; however, the most frequently cited actions included increasing eco-campaigns, improving the availability of eco-products at affordable prices, and raising public awareness of environmental issues.

## Conclusion and Recommendations

The growing severity of environmental problems is driving humanity to pursue appropriate solutions. The responsibility for environmental protection lies with all stakeholders (consumers, households, government agencies, businesses, and media). Man as an individual cannot contribute alone to the effective preservation of the environment. (Stoimenov, 2025). As a result, global organizations are working together to address pressing environmental issues such as climate change, pollution, biodiversity decline, and deforestation.

The current effectiveness in addressing environmental issues remains at a disappointingly low level, largely because responsibility is often shifted between institutions. This creates a so-called "vicious circle," in which the three main actors—government, consumers, and companies—continuously blame one another for environmental neglect. Regarding consumers, a phenomenon known as the "green gap" is evident, meaning that although consumers claim to be environmentally conscious, they do not consistently purchase eco-products. According to White, Hardisty, and Habib (2019), this paradox is a persistent challenge in green business. Specifically, while 65% of consumers express a desire to buy eco-brands, only approximately 26% actually follow through with such purchases.

Regarding businesses, the phenomenon of greenwashing occurs when companies claim to be eco-conscious, yet their products are not genuinely environmentally friendly. This raises an important question: is eco-consumerism merely a passing trend, or does it represent a genuine transformation in stakeholder behavior? For sustainable existence, it is essential that all stakeholders actively work to safeguard the environment. It is essential to save the health and lives of people and the entire ecosystem. In this sense, the thought of Steward Udall, Congressman of Arizona, which reads: "Plans to protect air and water, wilderness, and wildlife are, in fact, plans to protect humanity," is highly relevant.

Recommendations for stakeholders are given in the following table.

*Table 4: Recommendations*

| People | Government |
|---|---|
| 1) Reduce, reuse, recycle | 1) Enact legislation for environment protection |
| 2) Save energy and use energy-efficient appliances | 2) Provide grants, subsidiaries for eco-businesses |
| 3) Make minimum waste | 3) Support renewable energy sources |
| 4) Conserve water | 4) Invest in sustainable transport |
| 5) Shop organic food | 5) Protect and restore natural ecosystems |
| 6) Eat vegetables,fruits,nuts, seeds | 6) Educate the public (eco-campaigns) |
| 7) Walk, bike, use public transport | 7) Invest in efficient waste management systems |
| 8) Choose & use sustainable products | |
| 9) Speak up and support eco-projects | |
| **Businesses** | **Media** |
| 1) Switch to renewable energy | 1) Regular reports on eco-issues |
| 2) Invest in enegy-efficiency models | 2)Present documentaries, videos, blogs about ecology |
| 3) Encourage remote work | 3) Shape the public opinion |
| 4) Implement 3R (reduce, reuse, recycle) | 4) Increase eco-awareness |
| 5) Use sustainable packaging | 5) Educate public about the complex eco-issues |
| 6) Go digital | 6) Organize events, debates,online blogs |
| 7) Choose sustainable partners | 7) Promote eco-friendly products |
| 8) Ensure eco-transportation | |
| 9) Promote green projects | |

Source: Own research

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# APPLICATION OF ARTIFICIAL INTELLIGENCE IN THE FIGHT AGAINST OCCUPATIONAL BURNOUT IN THE WORKPLACE

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***Abstract***

*This report presents the burnout syndrome and its consequences for the organization. It analyzes the key benefits of implementing artificial intelligence systems for both employers and employees. Specific solutions that artificial intelligence applies to combat professional burnout in the workplace are specified.*

***Keywords****: artificial intelligence; burnout; workforce*

***JEL Codes:*** *M0, M2*

## Introduction

Professional burnout or burnout syndrome is an increasingly widespread problem, requiring effective opportunities to create or develop a healthy working environment. In conditions of technological progress and sustainable digitalization, the launch of artificial intelligence contributes significantly to the timely care of the workforce by having a continuous impact on their better well-being and mental health.

The object of the development is workplace burnout.

The subject of the development is the application of artificial intelligence in the field of burnout.

Goal is to analyze artificial intelligence-based solutions that improve workplace conditions and can address the challenges posed by burnout.

## Burnout - causes and consequences related to the work process

*Burnout* at work is more than just feeling tired. According to a Gallup survey, nearly 76% of employees experience burnout at some point in their careers, with 28% feeling exhausted “very often” or “always.”

Recent research has classified burnout as a professional phenomenon, linking it to chronic stress that has not been successfully managed. (Why People Burnout at Work? And Proven Ways to Recover)

Despite its prevalence, burnout is often misunderstood. Many believe it is simply a matter of working too many hours, but the real causes are much deeper. Lack of control, a toxic work environment, and emotional exhaustion are all prevalent.

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Burnout often stems from broader workplace issues. Here are some of them:

- *Lack of control in the workplace.* This can stem from micromanagement or excessive bureaucracy. When workers lack autonomy, they find it difficult to stay motivated and engaged in their work.
- *Unclear job expectations.* When employees don't fully understand their roles or responsibilities, they are more likely to experience anxiety and stress. Unclear expectations can arise from unclear job descriptions, inconsistent feedback, or shifting priorities. Without well-defined goals, employees can feel overwhelmed and uncertain about performance standards.
- *Toxic work environment.* A negative workplace culture contributes significantly to burnout. Environments characterized by poor leadership, lack of recognition, favoritism, or workplace bullying undermine employee morale. In organizations where psychological safety is low, employees may feel undervalued, stressed, or even afraid.
- *Emotional exhaustion.* Jobs that require high emotional labor, such as customer service and crisis management, expose employees to constant emotional stress. Without appropriate support systems, emotional exhaustion can occur, leaving employees feeling drained and disconnected.
- *Work-life balance.* Employees who struggle to disengage from work often experience physical and mental fatigue, reduced job satisfaction, and lower productivity. Over time, the inability to maintain a work-life balance increases the likelihood of burnout. (Why People Burnout at Work? And Proven Ways to Recover)

In support of what has been said so far, authors such as Leiter and Maslach define burnout as physical and emotional exhaustion. (Leiter and Maslach, 2003 ). Modern research by Melamed, Salvagioni, Alarcon, Lee, Ashforth, Bakker, Taris indicates its harmful impact, most often expressed in mental and physical health problems, low job satisfaction and weak organizational commitment (Melamed et al. 2006; Salvagioni et al. 2017; Alarcon, 2011; Lee and Ashforth, 1996; Bakker et al. 2014; Taris, 2006).

Nearly six in ten workers (57%) cite the following negative consequences of work-related stress and burnout:

- emotional exhaustion (31%)
- zero motivation (26%)
- lower productivity (20%)
- anger or irritability towards clients/colleagues (19%)
- feeling of inefficiency (18%)

When an employee is overworked, the likelihood of taking a sick day increases by 63%. Therefore, the tangible figure of 322 billion dollars per year is reached worldwide. This is closely linked to absenteeism and less productive workdays.

Employee burnout is a direct path to safety violations and injuries, often accompanied by workers' compensation claims. This is especially true in more hazardous jobs in industries

such as construction, energy and utilities, agriculture, and more. (Healthier Workplace: 5 Ways AI Can Prevent Burnout)

Against the background of what has been said so far, we can comment that burnout leads to consequences for both the organization and the people who work in it, expressed in reduced organizational productivity and health-related problems. In this line of thought, today more than ever we need a systemic impact that predicts or prevents professional burnout. Undoubtedly, the introduction of an intelligent system such as artificial intelligence would lead to a more satisfying and supportive environment that predetermines productivity among employees, and this in itself leads to better and more competitive results.

**Applying AI to the benefit of professional burnout**

Artificial intelligence (AI) is among the most transformative technologies of Industry 5.0, fundamentally revolutionizing processes, products, services and customer relationships. (Iansiti & Lakhani, 2020).

"The introduction of more sophisticated algorithms allows machines to identify, interpret, infer, and learn from data to achieve specific goals and tasks through flexible adaptation." (Haenlein & Kaplan, 2019)

According to this definition, an AI application is any system that can generate insights from data and act on them. (Bytniewski et al., 2020).

Adam, Guan, Thiebes et al., "embrace AI in electronic markets, driving widespread adoption in organizations across industry boundaries and transforming the global economy." (Adam et al., 2020; Guan et al., 2020; Thiebes et al., 2020) Consequently, "AI is considered an integral part of business strategy and organizational decision-making" (Cheng et al., 2020a, b; Shrestha et al., 2019), "making it a key element for generating business value" (Dwivedi et al., 2019). "AI is seen as fundamentally changing the work environment and the way people work" (Bednar & Welch, 2020), "spreading across industries" (Wang & Siau, 2019) "with potential applications in almost every field." (Barredo Arrieta et al., 2020)

AI can use data from a variety of sources, such as surveys, emails, chats, calendars, or performance metrics, to analyze employee patterns and behaviors and identify signs of burnout, such as stress, fatigue, disengagement, or low morale.

*Benefits of AI for Employers.*

Using AI to detect employee burnout can have several benefits for employers. First, it can help them monitor the well-being and satisfaction of their workforce and intervene early before burnout leads to turnover, absenteeism, or poor work quality. Second, it can help them optimize the workload and resource allocation of their teams and ensure that employees have a healthy work-life balance. Third, it can help them improve communication and feedback channels.

*Benefits of AI for Employees.*

Using AI to detect employee burnout can also have several benefits for employees. First, it can help them prevent or reduce stress by taking actions that benefit their mental and physical well-being. Second, it contributes to higher empathy among the team by enabling them to communicate their needs and expectations to their managers. Third, they gain access to resources and opportunities for learning, development, and growth. (How Can AI Be Used to Detect Employee Burnout? 2024)

Artificial intelligence is proving to be a powerful tool for employees. A Microsoft report "shows that 75% of people around the world now use AI to fuel their workday. Whether it's scheduling meetings or managing emails, AI allows them to focus on more strategic activities. The same Microsoft report reveals employee satisfaction with using AI. While 90% believe it helps them save time, 85% say it allows them to focus on critical work. It also allows them to feel more creative, with 83% reporting that it makes their work more enjoyable. Ultimately, tools like ChatGPT lighten the burden on workplaces, putting people in an environment where they can thrive and find greater fulfillment in their roles." (Burnout Leads to Employee Use of AI at Work, 2024)

Looking at AI as a factor of positive change, we find that by eliminating processes that carry certain inefficiencies, AI manages to reduce stress, improve working conditions and contribute to creating an environment where satisfaction and productivity exist. The prevention of professional burnout or its early detection is a guarantee of stronger motivation and engagement among employees and employers, which is crucial for overall well-being, highlighting the practical usefulness of artificial intelligence and its revolutionary impact.

**The application of AI in combating burnout**

The introduction of AI fundamentally improves employee and organizational productivity, effectively improving efficiency in organizational processes (Loureiro et al., 2021).

Therefore, companies with high integration and AI capabilities demonstrate superior productivity and competitiveness (Sjödin et al., 2021).

In this regard, AI holds enormous potential to directly address employee burnout: (Healthier Workplaces: 7 Ways AI Can Prevent Burnout. (2023)

***Intelligent task management.*** AI-powered tools prioritize tasks, optimize workloads, and create efficient schedules. These solutions use machine learning algorithms to analyze work patterns, identify bottlenecks, and provide personalized recommendations, empowering people to manage their time effectively and avoid burnout. Ayanza (How to Use AI to Prevent Employee Burnout, 2024) uses AI algorithms to analyze user behavior and preferences to provide useful suggestions and reports.

***Communication and collaboration.*** AI-powered chatbots and virtual assistants streamline internal communication, reducing the burden of email overload and enabling real-

time collaboration. These intelligent tools can handle routine inquiries, schedule meetings, and facilitate knowledge sharing, freeing up employees' time.

***Emotional Well-being Monitoring.*** AI-powered sentiment analysis and natural language processing techniques can detect early signs of burnout among employees. AI systems can identify individuals who may be at risk.

Woliba (How to Use AI to Prevent Employee Burnout, 2024) is a digital health technology company that offers a comprehensive employee wellness platform. It supports employee well-being, engagement, recognition, and rewards. Woliba empowers employees, drives productivity, and increases retention.

***Training and development.*** AI can deliver personalized training programs tailored to the relevant employees. By assessing skill gaps and learning preferences, these systems provide targeted learning materials and recommendations, promoting job satisfaction, which is crucial for preventing burnout.

Cornerstone (How to Use AI to Prevent Employee Burnout, 2024) is an AI-powered platform that offers employees seamless learning and development. It provides personalized employee training through automation, delivering learning content to learners based on the needs, goals, and preferences of your workforce.

***Automated data analytics.*** AI-powered analytics tools allow organizations to collect and analyze data on employee well-being, workload distribution, and productivity metrics. By identifying trends and patterns, businesses can proactively address factors contributing to burnout and implement evidence-based interventions to optimize working conditions.

***Health and Wellness Virtual Assistants.*** AI-powered virtual assistants equipped with health and wellness features can support employees' physical and mental well-being. These assistants can remind people to take breaks, engage in physical activity, practice mindfulness, or even provide guided meditation sessions, promoting work-life balance and reducing stress.

Telus (How to Use AI to Prevent Employee Burnout, 2024) offers a wellness program that offers a complete health and wellness platform. It offers 24/7 wellness resources and other health-related services. The platform collects employee assessment information and provides personalized wellness tips and recommendations to support overall well-being.

***Predictive Workforce Management.*** AI algorithms can predict peak workloads, predict potential burnout risks, and recommend resource allocation strategies. By optimizing workforce planning, companies can maximize productivity while ensuring that employees are not overwhelmed by excessive work demands. This proactive approach to workforce management can prevent burnout by maintaining a sustainable workload distribution.

SAP® SuccessFactors HXM Suite is the state-of-the-art in workforce management. SAP offers intuitive, intelligent workforce planning tools that prioritize employee well-being while streamlining workforce planning.

From the above, it is clear that artificial intelligence plays a key role in detecting burnout among workers and employees, providing personalized support based on constant access to resources that improve emotional resilience and increase efficiency.

Artificial intelligence has the necessary potential to be of help to humans, which also predetermines positive human-machine interaction. We can note that by automating administrative and routine tasks, AI manages to reduce monotony and dissatisfaction among the workforce by reducing cognitive overload and optimizing work processes, which directly reflects on their strategic role.

Analyzing the benefits of AI in combating burnout, we find that AI helps emotional and physical exhaustion by promoting healthy and inclusive practices in the workplace. Choosing specific AI-based solutions adds the necessary competitiveness to most organizations, which plays a crucial role in creating a more favorable work environment and higher efficiency.

## Conclusion

In conclusion, we can summarize several main points.

*First,* presents is the essence on the syndrome Burnout and its consequences from him.

*Second,* the capabilities of artificial intelligence systems for the successful detection of professional burnout among workers and employees are analyzed, while the most important benefits are extracted, both for employers and employees.

On *third* place is justifies the necessity from the application on artificial intelligence, through specific solutions determining the prevention and the fight against professional burnout on the working place.

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# ARTIFICIAL INTELLIGENCE AND ITS ROLE IN ENHANCING ECONOMIC RESILIENCE IN THE EUROPEAN UNION

**Apostolia Eleftheriou**[1]

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***Abstract***

*This paper explores the role of Artificial Intelligence (AI) in strengthening the economic resilience of the European Union. The main aim is to show how AI can support economies in facing crises and adapting to rapid changes. The research goals are to highlight the ways AI improves productivity, helps decision-making, and supports sustainable growth in different sectors such as healthcare, agriculture, and finance. The expected results are to provide a clearer understanding of how AI contributes to resilience by making businesses and societies more adaptable, innovative, and inclusive. The paper also reviews European strategies, including the AI Act, and gives practical recommendations on how to use AI in a responsible way that benefits both the economy and society. In this way, the study emphasizes how AI can serve as a driver for long-term stability and competitiveness in the EU.*

***Keywords:*** *Artificial Intelligence; Economic Resilience; European Union; Productivity; Digital Transformation; Policy*

***JEL Codes:*** *O33; O47; E61; L86*

## Introduction

Over the past decade, overlapping crises—pandemic shocks, energy disruptions, climate-related events, and geopolitical tensions—have underscored the importance of economic resilience in the European Union (EU). Economic resilience refers to the capacity of an economy to withstand, adapt, and recover from adverse shocks while maintaining sustainable growth (Caldera Sánchez, Rasmussen, & Röhn, 2015).

At the same time, Artificial Intelligence (AI) has emerged as a transformative force in productivity, innovation, and crisis management. According to Eurostat (2025), approximately 13.5% of EU enterprises used at least one AI technology in 2024, with adoption rates exceeding 40% among large firms. Yet diffusion remains uneven: below 6% in some Member States and over 25% in digital leaders such as Denmark and Sweden. This asymmetry raises both opportunities for convergence and risks of digital divergence.

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The EU's **Artificial Intelligence Act**, effective from 1 August 2024, introduced a risk-based regulatory framework that fosters responsible innovation (European Commission, 2024). This regulatory clarity is expected to stimulate investment, accelerate adoption, and ensure AI aligns with societal values and inclusiveness.

An IMF study (Misch, Park, Pizzinelli, & Sher, 2025) shows measurable gains in total factor productivity (TFP) across 31 European countries under AI adoption scenarios, suggesting AI could expand fiscal space and enhance resilience capacity. This paper aims to link AI adoption and regulatory frameworks with resilience outcomes in the EU, emphasizing complementary policies such as digital skills, data governance, and fair competition.

**Literature Review / Theoretical Background**

Economic resilience has been defined in the literature as the ability of economies to prepare for, withstand, and recover from shocks while maintaining long-term growth potential (Briguglio et al., 2009). The OECD (2014) further emphasizes the role of governance, policy coordination, and institutional adaptability as central to resilience. Within this framework, AI emerges as a technological enabler that reinforces resilience mechanisms through predictive modeling, automation, and enhanced decision-making.

Several studies have highlighted the transformative potential of AI for productivity and competitiveness. Brynjolfsson and McAfee (2014) argued that digital technologies, including AI, represent a "general-purpose technology" capable of driving significant economic change comparable to historical industrial revolutions. More recent research (Cockburn, Henderson, & Stern, 2018) identifies AI not only as an input for innovation but also as a complement to human capital, where policy environments determine how benefits are distributed.

In the European context, the European Commission (2021) placed AI at the heart of the **2030 Digital Compass**, stressing its role in sustainable growth, digital sovereignty, and social cohesion. Empirical analyses confirm that AI adoption improves efficiency in resource allocation, logistics, and service provision (Bughin et al., 2018; Agrawal, Gans, & Goldfarb, 2019). These outcomes are directly tied to resilience, as firms and economies with greater efficiency recover more quickly from external disruptions.

However, the literature also underscores challenges. Brennen and Kreiss (2016) discuss risks of algorithmic bias and social inequalities, while Floridi et al. (2018) highlight the need for ethical frameworks to ensure trustworthy AI deployment. The EU AI Act (European Commission, 2024) responds to such concerns by establishing a risk-based regulatory model that balances innovation with safeguards for safety, transparency, and accountability.

From a macroeconomic perspective, IMF research (Misch, Park, Pizzinelli, & Sher, 2025) demonstrates that higher AI adoption correlates with improvements in total factor productivity (TFP), which is a key determinant of resilience. Similarly, the OECD (2021)

points out that digital transformation, when combined with skills upgrading and inclusive policies, contributes to long-term growth and economic stability.

In summary, the theoretical literature converges on three main points:

1. AI is a general-purpose technology that has transformative potential for resilience.
2. The benefits of AI depend on complementary factors, such as skills, infrastructure, and regulation.
3. Policy frameworks like the EU AI Act are essential to ensure that AI adoption supports both competitiveness and inclusiveness, thereby reinforcing economic resilience.

**Methodology**

This paper relies on a structured review of official data and policy frameworks to examine the role of Artificial Intelligence (AI) in enhancing economic resilience in the European Union. The methodology is primarily qualitative with descriptive quantitative elements, based on the following components:

**1. Data Sources**

- **Eurostat (2025)**: Aggregate statistics on AI adoption in enterprises across the EU, disaggregated by firm size and Member State. These official indicators provide a reliable baseline for understanding diffusion patterns.
- **IMF Working Paper (Misch, Park, Pizzinelli, & Sher, 2025)**: Macroeconomic simulations linking AI adoption with productivity gains and resilience capacity.
- **European Commission** documents: the *AI Act (2024)* and the *2030 Digital Compass (2021)*, which set the regulatory and strategic framework for AI in Europe.
- **OECD Reports (2014, 2021)**: Theoretical frameworks on resilience and evidence on digital transformation of SMEs.
- **Scholarly literature and books**: Foundational texts such as Brynjolfsson & McAfee (2014) and Cockburn, Henderson & Stern (2018), which establish AI as a general-purpose technology.

**2. Analytical Approach**

- **Descriptive comparison**: Adoption rates are compared across enterprise sizes and Member States, highlighting disparities that affect resilience capacity.
- **Policy alignment**: EU regulatory frameworks (AI Act, Digital Compass) are interpreted through the lens of the OECD's resilience framework (prevention, mitigation, recovery).
- **Interpretative synthesis**: Insights from the IMF and OECD are used to connect AI adoption to macro-level resilience outcomes, focusing on productivity, fiscal stability, and competitiveness.

**3. Scope and Limitations**

- **Scope**: The study focuses on the EU as a whole, while also noting differences among Member States and firm sizes.

• **Limitations**: The analysis does not use microdata or conduct new econometric modelling. Instead, it integrates secondary evidence from official datasets and published research. This limits causal inference but provides a credible overview suitable for a conference paper.

## Analysis and Discussion

### 1. AI Adoption in EU Enterprises

According to Eurostat (2025), the overall adoption of AI technologies among EU enterprises with 10+ employees stood at **13.5% in 2024**, with adoption significantly higher among large enterprises (**41.2%**) compared to SMEs (**8–15%**).

*Table 1 – AI adoption in EU enterprises by size (2024)*

| Enterprise Size | AI Adoption Rate (%) |
|---|---|
| Small (10–49 employees) | 8.0 |
| Medium (50–249 employees) | 15.5 |
| Large (250+ employees) | 41.2 |

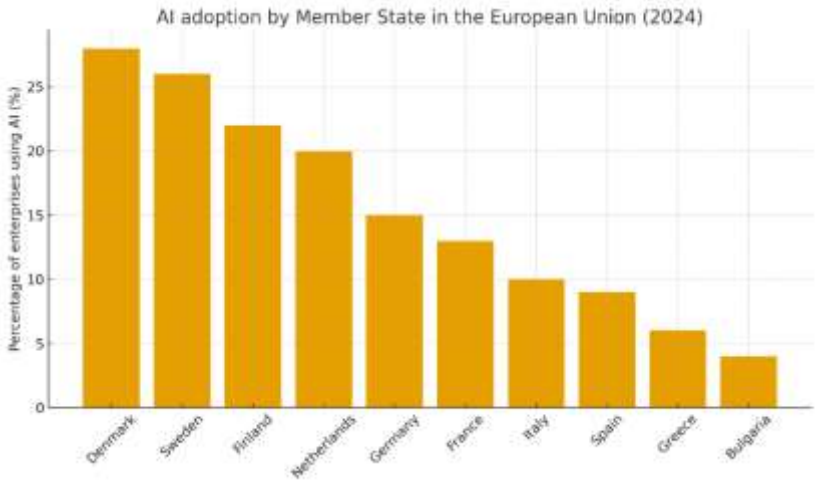
*Source:* Eurostat (2025)

This size-related gap indicates that larger firms have both the financial and human capital resources to integrate AI effectively, while SMEs remain constrained by cost, expertise, and access to infrastructure.

### 2. Regional Differences

AI adoption varies widely across EU Member States. Digital leaders such as **Denmark (28%)** and **Sweden (25%)** outperform lagging countries where adoption remains below 6%.

*Figure 1 – AI adoption by Member State (2024)*



*Source:* Eurostat (2025)

Note: Data refer to enterprises with 10 or more employees.

These disparities have resilience implications: economies with higher AI adoption are more capable of adapting quickly to shocks and achieving rapid recovery, while lower adoption risks widening the digital and economic divide within the EU.

### 3. Regulatory and Policy Context

The **EU Artificial Intelligence Act**, effective from **1 August 2024** (European Commission, 2024), is a landmark regulatory framework. Its risk-based approach provides legal certainty, reducing investor hesitancy and promoting cross-border AI deployment. By mitigating ethical and safety concerns, the Act strengthens resilience by ensuring AI adoption does not compromise trust and inclusiveness.

### 4. Macroeconomic Impacts

An IMF Working Paper (Misch, Park, Pizzinelli, & Sher, 2025) finds that a **10% increase in AI adoption** could yield a **1.5–2% rise in total factor productivity (TFP)** in the medium term. Improved TFP enhances fiscal space and long-term competitiveness, crucial components of resilience.

*Table 2 – Simulated impact of AI adoption on TFP (EU average)*

| AI Adoption Increase | Estimated TFP Growth (%) |
|---|---|
| +5% | 0.7–1.0 |
| +10% | 1.5–2.0 |

*Source:* IMF (2025)

This suggests that scaling AI adoption is not only a driver of innovation but also a macroeconomic stabilizer in times of crisis.

### 5. Challenges and Constraints

Despite positive outcomes, risks persist.

- **Digital divide**: SMEs and certain regions lack resources for adoption.
- **Skills gap**: AI deployment requires advanced digital skills, which are unevenly distributed across EU labor markets.
- **Ethical and social risks**: Algorithmic bias and lack of transparency may erode public trust (Floridi et al., 2018).
- **Cybersecurity**: Increased reliance on AI systems expands vulnerability to cyber threats.

## Conclusion and Policy Recommendations

### *Conclusion*

The analysis confirms that Artificial Intelligence (AI) has become a critical driver of economic resilience in the European Union. Adoption rates are rising, especially among large enterprises, but significant gaps remain between SMEs and Member States. Countries with higher levels of AI integration demonstrate greater adaptability and competitiveness, aligning with resilience theory. At the macroeconomic level, evidence from the IMF shows that increases in AI adoption correlate with higher total factor productivity, creating fiscal and structural buffers against shocks. However, the benefits of AI are not automatic: they depend on complementary factors such as digital skills, infrastructure, and effective regulation.

***Policy Recommendations***

1. **Support SME Adoption**

Provide targeted funding, advisory services, and access to digital infrastructure so that small and medium-sized enterprises can integrate AI into operations.

2. **Strengthen Skills Development**

Invest in digital and AI-related skills at all education levels, with a focus on upskilling the existing workforce to reduce the skills gap.

3. **Ensure Ethical and Inclusive AI**

Implement the EU AI Act with strong monitoring and enforcement, while also promoting awareness of ethical principles such as transparency, accountability, and fairness.

4. **Reduce Regional Disparities**

Use cohesion funds and digital innovation hubs to close the gap between high-adoption and low-adoption Member States, avoiding a two-speed digital Europe.

5. **Promote Cybersecurity Resilience**

As AI becomes central to critical infrastructure, ensure robust cybersecurity frameworks are in place to protect against systemic risks.

6. **Encourage Public–Private Partnerships**

Foster collaborations between governments, academia, and industry to drive responsible innovation and accelerate AI diffusion across sectors.

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# ECONOMIC AND AGROECOLOGICAL EFFICIENCY OF INNOVATIVE AGRICULTURAL PRACTICES UNDER THE GREEN DEAL FRAMEWORK

**Daniel Petrov**[1]

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***Abstract***

*This paper evaluates the economic and agroecological efficiency of three sustainable agricultural practices - stabilized urea with inhibitors, cover crops, and no-till systems - implemented on an industrial grain farm in Northeastern Bulgaria. Drawing on a two-year case study, the research uses indicators such as nitrogen use efficiency , return on investment, and soil organic matter)to assess the impact on wheat, maize, and sunflower production. Results show that stabilized urea significantly improves yields and profitability, cover crops enhance soil fertility and crop productivity, and no-till reduces input costs while improving soil health. These practices are found to be both economically viable and environmentally resilient. The findings support policy measures that encourage sustainable technologies and align with the European Green Deal's goals, positioning these practices not only as alternatives but as strategic instruments for agricultural transformation.*

***Keywords:*** *sustainable agriculture; nitrogen use efficiency; no-till; cover crops; Green Deal*
***JEL Codes:*** Q12, Q57

## Introduction

The sustainable transformation of agriculture has become a critical imperative in the context of contemporary environmental and economic challenges. The agricultural sector is not only particularly vulnerable to these pressures but also uniquely positioned to address them through the transition to more resilient and sustainable production models. Within the European Union (EU), this vision has been institutionalized through the European Green Deal, which outlines an ambitious pathway toward climate neutrality by 2050. It includes targeted commitments for the agricultural sector – notably the reduction of greenhouse gas emissions, the restoration of soil health, the decrease in pesticide and fertilizer usage, and the enhancement of ecosystem services delivered by agricultural land (European Commission, 2019). Sustainable agriculture is a scientifically and politically consolidated concept, rooted in the integration of economic viability, ecological resilience, and social responsibility. It necessitates the adoption of technologies and management strategies that simultaneously meet farm-level objectives while generating public and environmental benefits (Costanza et al., 1997; Daly and Farley, 2011; Brodt et al., 2011). According to Daly

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and Farley (2011), sustainable agriculture should be interpreted within the broader framework of ecosystem services – including climate regulation, pollination, nutrient cycling, and soil fertility maintenance – all of which are essential for the functionality of agroecosystems.

Among the most widely researched sustainable practices are minimum tillage (no-till), stabilized fertilizers with nitrification and urease inhibitors, cover crops, precision farming, and agroecological technologies. As demonstrated by Pisante et al. (2012), Tian et al. (2016), and more recently by Tariq et al. (2022), these approaches contribute to improved nitrogen use efficiency, greater yield stability, cost reduction, and the long-term enhancement of soil health.

From a theoretical standpoint, sustainable agriculture can be analyzed through the lens of externalities and market failures. As argued by Stiglitz (1987) and Arrow et al. (1995), economic activities that generate non-internalized benefits or harms create justification for public intervention. Sustainable agricultural practices often yield considerable positive externalities – including soil conservation, carbon sequestration, and pollution mitigation – which are insufficiently reflected in market prices and therefore require institutional support. Despite the inherent potential of the Bulgarian agricultural sector to adopt such practices, actual uptake remains limited. This gap is attributable to a range of interrelated barriers – from economic and regulatory constraints to knowledge deficits and insufficient enabling environments. Bachev (2017; 2021) emphasizes that the governance of sustainability in Bulgarian agriculture is shaped by the interplay between formal institutions, informal norms, and the individual strategies of farmers. He argues that the transition to sustainable models is contingent on an effective institutional framework and a policy environment that aligns with the specific characteristics of agricultural organizations. Ivanov (2016) adds that economic incentives and targeted investment tools are essential in supporting environmentally oriented farming, while Mitova (2021) underlines the need for high levels of awareness, access to expert knowledge, and policy continuity to ensure successful integration of sustainable technologies.

A further conceptual contribution to the assessment of sustainability is offered by the notion of adaptive capacity, as developed by Moore and Lobell (2014). This concept refers to the ability of agricultural systems to respond to environmental and climatic change through technological, organizational, and managerial innovations – with attention to contextual heterogeneity and the potential for transformative adaptation. Such a framework is particularly relevant to Bulgarian agriculture, which is characterized by diverse production models and necessitates tailored adaptive strategies. In line with behavioral economic theories, the success of sustainable transformation depends not only on technical efficiency but also on the broader institutional compatibility and the socio-cognitive environment. Prospect theory, as formulated by Kahneman and Tversky (1979), posits that decision-making under risk is often guided by the aversion to loss – a factor that significantly influences farmers' willingness to adopt innovations. Complementarily, the theory of real

options (Dixit and Pindyck, 1994) conceptualizes investment decisions in innovation as responses to uncertainty and irreversibility – especially relevant in capital-intensive, long-horizon sectors like agriculture. Moreover, Putnam's (1993) theory of social capital – supported by empirical findings in the Bulgarian context (Bachev, 2018) – highlights the importance of trust, social networks, and shared norms as catalysts for cooperation and adaptability. Against this backdrop, the present study introduces the concept of the adaptive potential of sustainable agricultural practices as a multidimensional framework for evaluating their real-world applicability. Adaptive potential encompasses the economic, ecological, institutional, and behavioral dimensions that determine whether a given practice can be successfully implemented and maintained within the realities of Bulgarian farming. This approach extends the classical notion of "feasibility" by incorporating a more integrative and interdisciplinary lens for assessing sustainability.

The objective of the study is to evaluate the adaptive potential of three sustainable agronomic practices – minimum tillage (no-till), stabilized nitrogen fertilizers with inhibitors, and cover cropping – in the context of an industrial grain farm located in Northeastern Bulgaria. The case study methodology employed allows for both quantitative and qualitative assessment of the economic and environmental impacts resulting from the implementation of these practices. Data were analyzed using a set of indicators including profitability, return on investment (ROI), cost efficiency, nitrogen use efficiency (NUE), as well as changes in soil organic matter and microbial activity.

The working hypothesis posits that the integration of sustainable agronomic practices with high adaptive potential into industrial-scale agriculture in Bulgaria leads to improvements in both economic profitability and agroecological performance, compared to conventional production models. This enhanced performance renders such practices strategically relevant for achieving the objectives of the Green Deal and promoting the sustainable development of the agricultural sector.

**Methodology**

This study adopts a case study approach, a strategic research design widely applied in agricultural economics for analyzing farm-level decision-making, economic rationale, and adaptive responses within real-world settings. Unlike aggregate econometric models that derive general trends from macro-level data, the case study method operates at the micro scale, allowing for the capture of heterogeneity in production practices stemming from differences in resource endowment, institutional frameworks, and socio-economic environments (Eisenhardt, 1989).

This methodological perspective is particularly valuable under evolving policy conditions such as those introduced by the Green Deal. It enables a holistic understanding of how agricultural producers respond to environmental regulations, adopt sustainable practices, and manage risk. The method facilitates a multidimensional assessment of efficiency – not only through technical, allocative, and market-based indicators but also by

evaluating strategic decisions such as innovation adoption, cooperative engagement, diversification, and the application of agroecological techniques. These may include minimum tillage, organic farming, integrated pest management, and sustainable irrigation systems (Just and Pope, 2003; Lal, 2020). Furthermore, the case study design is particularly well-suited for analyzing farmers' motivations and attitudes, incorporating insights from behavioral economics. Concepts such as prospect theory (Kahneman and Tversky, 1979) and real options theory (Dixit and Pindyck, 1994) help illuminate the trade-offs that farmers make between short-term profitability and long-term sustainability, especially in contexts characterized by uncertainty and irreversible investment decisions.

Beyond behavioral insights, the case study method contributes to uncovering institutional mechanisms and structural barriers linked to land access, subsidies, innovation uptake, and market integration. These are analyzed through the lens of transaction cost economics (Williamson, 1985). Within the broader discourse of sustainable development, the method serves as a robust tool for evaluating the viability of practices that integrate economic performance with the preservation of soil fertility, biodiversity, and water resources. Additionally, the methodology draws on the theoretical lens of social capital (Putnam, 1993), which enables the analysis to capture the influence of local networks, shared knowledge, and trust as drivers of sustainable behavior. In this way, the case study provides an integrated perspective on the economic, institutional, and socio-cultural dynamics that shape the uptake of sustainable practices. Under the framework of the Green Deal, such an approach also facilitates the assessment of how sustainable technologies and practices are perceived and implemented in practice. It sheds light on how factors such as farm size, managerial capacity, and openness to change influence the effectiveness of adoption (Rogers, 2003). The validity and reliability of the findings are ensured through methodological triangulation – combining interviews, field observations, and quantitative data. This triangulation enhances the robustness of the conclusions and strengthens the study's relevance for policy recommendations aimed at promoting the sustainable transformation of the agricultural sector (Denzin, 1978).

The empirical basis of the study is an industrial-scale grain farm located in Northeastern Bulgaria, encompassing approximately 1,030 hectares of arable land. The enterprise is characterized by a well-established organizational structure, with full ownership of machinery, extensive use of mineral fertilizers, fully mechanized field operations, and an integrated grain storage facility. The farm specializes in the cultivation of wheat, maize, and sunflower, employing conventional production techniques, but demonstrates growing awareness and willingness to integrate more sustainable agronomic practices. Situated in a temperate-continental climate zone, the area receives an average annual precipitation of approximately 550 mm. The predominant soils are "chernozem", known for their high agrochemical potential, yet increasingly affected by adverse trends such as seasonal droughts, structural soil degradation, and rising nitrogen input costs. These agro-environmental pressures underscore the relevance of exploring adaptive practices tailored to

local conditions. The study is subject to several limitations. First, the cropping system is relatively homogeneous, focusing primarily on cereal crops, which constrains the generalizability of findings to more diversified farming systems. Second, the analysis centers on a single agricultural unit, limiting the extrapolation of results across farm types and scales. Third, the observation period spans two consecutive cropping seasons, which, while informative, is insufficient to fully capture the long-term effects of sustainable practices on soil parameters. Despite these constraints, the methodological rigor of the study is strengthened through triangulation – combining field experimentation, soil sampling, farmer interviews, and accounting records – thereby ensuring high validity and practical relevance. The experimental design focuses on three crops of strategic significance for Bulgaria's grain sector – wheat, maize, and sunflower – selected due to their substantial economic share and role in domestic and export markets. The study evaluates three fertilization regimes with varying nitrogen inputs:

- A control treatment applying standard nitrogen doses using conventional urea;
- A reduced-nitrogen treatment with a 20% lower application rate; and
- A reduced-nitrogen treatment using urea stabilized with urease (NBPT) and nitrification (DCD) inhibitors, designed to minimize nitrogen losses and enhance uptake efficiency.

The dosage levels are calibrated according to the agro-environmental conditions of Northeastern Bulgaria and grounded in empirical benchmarks from the scientific literature, following the principle of the Economically Optimal Nitrogen Rate (EONR) for temperate climates (Raun and Johnson, 1999; Cassman et al., 2002; Debaeke and Casadebaig, 2008).

For wheat, the standard nitrogen dose is 180 kg N/ha, applied in three equal splits. The reduced version uses 144 kg N/ha, while the stabilized variant applies two treatments of 72 kg N/ha. In maize, the standard application is 220 kg N/ha, providing the yield potential for over 9 tons/ha. The reduced treatment applies 176 kg N/ha, while the stabilized variant retains the full nominal dose but delivers it through a single, precision-timed application during the critical vegetative phase. For sunflower, the standard dose is 90 kg N/ha; both reduced and stabilized variants apply 72 kg N/ha as a single pre-sowing treatment.

The experimental field layout employs a randomized complete block design (RCBD), with each block covering 50 hectares and containing all crop and nitrogen treatment combinations. This design ensures statistical reliability and enables internal comparison across treatments, accounting for spatial variability in field conditions

*Table no. 1 – Indicators and formulas used in the analysis*

| Analytical Dimension | Indicator / Formula | Description |
|---|---|---|
| Agronomic | Y = M / A | Yield – crop mass (M) per cultivated area (A) |
| | Quality parameters | Gluten, protein, and Zeleny index (wheat); starch content (maize); oil content (sunflower) |
| Economic | NR = P – C | Net Return – total revenue minus total costs |
| | RR = (P_exp / P_ctrl) × 100 | Relative Return – performance of the experimental treatment vs. control |
| | ROI = NR / C | Return on Investment – ratio of net return to total costs |
| Soil and Environmental | Laboratory values | Organic matter (Walkley-Black), mineral nitrogen (Kjeldahl), bulk density, water retention, infiltration rate, microbial activity |
| Technological-Integrative | NUE = [(Y_t – Y_c) / (N_t – N_c)] × 100 | NUE – effectiveness of nitrogen application |

*Source* Compiled by the author.

**Results**

As previously outlined, the two-year case study was conducted on a large-scale industrial farm in Northeastern Bulgaria and focused on evaluating the effects of three sustainable agronomic practices: the application of stabilized urea with urease and nitrification inhibitors, the integration of cover crops, and the adoption of minimum tillage (no-till). The practices were assessed across three major cereal crops – wheat, maize, and sunflower – using a randomized complete block design that combined three nitrogen fertilization strategies (standard rate, 20% reduced rate, and stabilized urea with NBPT and DCD), two tillage systems, and experimental plots with cover crop incorporation. The total experimental area covered 270 hectares annually. The evaluation was based on a robust set of quantitative indicators, including, NUE, NR, ROI, and basal microbial activity (BMA). Data were presented in comparative form for the two agricultural campaigns: 2022–2023 and 2023–2024.

In wheat cultivation, the results presented in Table 2 demonstrate the clear superiority of the stabilized urea treatment. It achieved an average yield of 7.45 tons per hectare and an NUE of 52.1 kg of output per kg of applied nitrogen – representing a 28.9% improvement compared to conventional urea. Moreover, the quality of the output was enhanced, with protein content reaching 12.0%, exceeding the minimum threshold for premium pricing by grain purchasers. From an economic perspective, the stabilized treatment also delivered the highest profitability, with a return on investment of 199.7%, while exhibiting minimal interannual variability in yields. These findings position the stabilized fertilization scheme as both agronomically efficient and resilient under conditions of climatic uncertainty.

*Table no. 2 – Wheat – Results from the 2022–2023 and 2023–2024 Campaigns*

| Treatment | Total N Dose (kg/ha) | Yield 2022 – 2023 (t/ha) | Yield 2023 – 2024 (t/ha) | Δ Yield (%) | Protein (%) | Avg. NUE (kg/kg N) | Revenue (BGN/ha) | Costs (BGN/ha) | Profitability (%) |
|---|---|---|---|---|---|---|---|---|---|
| Control (urea) | 180 | 7.00 | 7.40 | 5.70 | 11.8 | 40.4 | 2,072 | 760 | 172.6 |
| Reduced urea (-20%) | 144 | 6.90 | 7.20 | 4.30 | 11.5 | 48.6 | 2,016 | 710 | 183.8 |
| Stabilized urea (-20%) | 144 | 7.30 | 7.60 | 4.10 | 12.0 | 52.1 | 2,128 | 710 | 199.7 |

*Source* Compiled by the author.

Maize exhibited pronounced sensitivity to both the form and timing of nitrogen application. As shown in Table 3, the stabilized urea treatment yielded an average output of 11.2 tons per hectare, accompanied by the highest NUE at 64.4 kg of grain per kg of applied nitrogen. This treatment also demonstrated cost optimization, leading to a profitability rate of 217.1%. Notably, the starch content reached 73%, which is particularly relevant for premium segments of the processing industry. The extended availability of ammonium nitrogen in the soil – enabled by the use of urease and nitrification inhibitors – proved to be a key factor in enhancing nitrogen efficiency, especially during the V6–V12 growth stages, which are critical for determining final yield potential.

*Table no. 3 –Maize – Results from the 2022–2023 and 2023–2024 Campaigns*

| Treatment | Total N Dose (kg/ha) | Yield 2022 – 2023 (t/ha) | Yield 2023 – 2024 (t/ha) | Δ Yield (%) | Starch (%) | Avg. NUE (kg/kg N) | Revenue (BGN/ha) | Costs (BGN/ha) | Profitability (%) |
|---|---|---|---|---|---|---|---|---|---|
| Control (urea) | 220 | 10.6 | 11.2 | 5.70 | 72.2 | 49.1 | 2,560 | 880 | 191.0 |
| Reduced urea (-20%) | 176 | 10.4 | 10.6 | 1.90 | 71.5 | 59.3 | 2,488 | 820 | 203.3 |
| Stabilized urea (-20%) | 176 | 11.1 | 11.3 | 1.80 | 73.0 | 64.4 | 2,632 | 830 | 217.1 |

*Source* Compiled by the author.

Although sunflower exhibited a comparatively weaker yield response to nitrogen input variations, the results in Table 4 still highlight the advantages of the stabilized fertilization scheme. The highest yield was recorded under the stabilized treatment at 3.3 tons per hectare, alongside the best oil content at 45.5% and the highest profitability rate of 165.6%. NUE reached 46.5 kg/kg N – a notable value for a crop with relatively low nitrogen requirements but high economic sensitivity to product quality.

The extended availability of nitrogen achieved through the inhibitor-based formulation proved particularly effective during the early growth stages, facilitating optimal nutrient uptake and contributing to both productivity and quality gains.

*Table no. 4 –Sunflower – Results from the 2022–2023 and 2023–2024 Campaigns*

| Treatment | Total N Dose (kg/ha) | Yield 2022 – 2023 (t/ha) | Yield 2023 – 2024 (t/ha) | Δ Yield (%) | Oil Content (%) | Avg. NUE (kg/kg N) | Revenue (BGN/ha) | Costs (BGN/ha) | Profitability (%) |
|---|---|---|---|---|---|---|---|---|---|
| Control (urea) | 90 | 3.00 | 3.20 | 6.70 | 45.2 | 35.6 | 1,360 | 540 | 151.9 |
| Reduced urea (-20%) | 72 | 3.00 | 3.10 | 3.30 | 45.0 | 41.9 | 1,330 | 520 | 155.8 |
| Stabilized urea (-20%) | 72 | 3.20 | 3.30 | 3.10 | 45.5 | 46.5 | 1,408 | 530 | 165.6 |

*Source* Compiled by the author.

The integration of cover crops (vetch, clover, and radish) demonstrated a significant impact on key agroecological indicators. As shown in Table 5, vetch emerged as the most effective option, fixing 58 kg N/ha, enhancing the yield of the subsequent main crop by 6%, and increasing soil organic matter (SOM) content by 0.4%. The recorded economic return (BGN 140/ha) exceeded the associated input costs, providing a direct financial benefit. While radish does not fix nitrogen, it contributes positively through biomass accumulation and biofumigation, improving soil structure and health. These findings highlight the differentiated effects of various cover crops and underscore the importance of selecting species strategically, based on the specific environmental and economic objectives of the farm.

*Table no. 5 - Cover Crops – Results and impact on subsequent main crop*

| Cover Crop | Biomass (t/ha) | Fixed N (kg/ha) | Yield Impact on Next Crop (%) | Δ SOM (%) | Costs (BGN/ha) | Economic Return (BGN/ha) |
|---|---|---|---|---|---|---|
| Vetch (Vicia spp.) | 4.5 | 58 | 6.00 | 0.40 | 120 | 140 |
| White clover | 4.0 | 50 | 4.50 | 0.30 | 110 | 125 |
| Radish (Raphanus spp.) | 5.5 | 0 | 3.50 | 0.20 | 100 | 85 |
| Control (no cover crop) | 0 | 0 | – | – | 0 | 0 |

*Source* Compiled by the author.

Minimum tillage demonstrated significant economic and agroecological benefits. As presented in Table 6, fuel costs were reduced by 76%, and mechanization costs by 57.7%, resulting in notable savings. SOM increased by 0.5%, and improvements in soil biological activity were confirmed by higher basal microbial activity (BAI). Additionally, reduced soil

bulk density (1.28 g/cm³ compared to 1.45 g/cm³ under conventional tillage) facilitated water infiltration and root system development.

ROI for no-till practices exceeded 210%, indicating not only economic efficiency but also improved agroecological resilience – particularly relevant under drought-prone conditions.

*Table 6. No-Till System – Comparative results across two growing seasons*

| Indicator | Conventional Tillage | No-Till System | Δ Effect |
|---|---|---|---|
| Field passes per season | 3–4 | 0 | –3 to –4 |
| Fuel consumption (L/ha) | 50 | 12 | –76% |
| Tillage cost (BGN/ha) | 130 | 55 | –57.7% |
| Soil organic matter (SOM, %) | 1.6 | 2.1 | +0.5 |
| Soil bulk density (g/cm³) | 1.45 | 1.28 | –0.17 |
| Microbial activity (BAI) | Moderate | High | ↑ |
| Average yield increase (%) | – | 3.50 | + |
| ROI from No-Till (%) | – | 210 | + |

*Source* Compiled by the author

A comparative analysis with existing research (e.g. Cassman et al., 2002; Lal, 2020; Bachev, 2017; Ivanov, 2018; Mitova, 2021) validates the findings and confirms that the implementation of sustainable practices in industrial agriculture generates synergistic benefits – enhanced productivity, optimized resource efficiency, reduced environmental losses, and improved system resilience. The results clearly demonstrate that the assessed practices not only contribute to the goals of the Green Deal, but are also economically viable and agronomically effective under real-world production conditions.

**Conclusion and Recommendations**

The findings from the two-year case study provide strong empirical evidence that sustainable agronomic practices, when implemented in an industrial-scale grain farm in Bulgaria, deliver high economic returns, agronomic resilience, and agroecological benefits. The three innovations under investigation – stabilized urea with inhibitors, cover crops, and no-till cultivation – demonstrate clear advantages over conventional practices in terms of yields, economic indicators, and soil quality parameters. The highest profitability and nitrogen use efficiency were observed under the inhibited urea schemes – improvements in both yield and quality contributed to increased revenues and optimized costs, even under reduced nitrogen input. Cover crops contributed not only through nitrogen fixation and organic matter enhancement but also through a direct increase in the yield of subsequent crops, all while ensuring a positive economic return. The no-till approach emerged as a strategic response to rising production costs and climate stressors, combining substantial savings on fuel and mechanization with improved soil structure and overall system productivity.

The aggregated results confirm that sustainable practices are not only aligned with the goals of the European Green Deal and national agricultural policy but also possess tangible applicability in Bulgarian farming contexts. Based on these findings, policy support is recommended for farmers adopting inhibited fertilizers and cover crops, as well as for including no-till methods within the scope of agri-environmental compensation schemes. In parallel, broader access to advisory services, knowledge dissemination, and the development of risk management models tailored to the advantages of sustainable technologies are essential.

In conclusion, the evaluated practices should not be regarded merely as alternatives to conventional agriculture but as a strategic pathway for transforming the sector in response to current economic, environmental, and regulatory challenges.

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# PARALLEL SESSIONS

# SECTION 3:

# INNOVATIONS, EDUCATION AND CROSS-BORDER COLLABORATION FOR SUSTAINABLE TOURISM DEVEL

# MANAGING SUSTAINABILITY GROWTH IN BALNEO, SPA AND WELLNESS TOURISM: A SYSTEMATIC LITERATURE REVIEW

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***Abstract***

*Sustainability in balneological, spa and wellness tourism is essential for ensuring long-term growth and environmental preservation. This article explores the concept of sustainable growth in the context of balneology, focusing on the management of environmental, social, and economic dimensions. This comprehensive assessment of the literature examines how sustainability is changing in the specialized but quickly growing fields of wellness, spa, and balneo tourism.*

*In order for spa and wellness tourism to better connect with global sustainability goals, this research emphasizes the necessity of multi-stakeholder engagement and innovative policymaking. In order to promote resilient and responsible tourism models for the future, the study adds to the body of knowledge in academia and provides useful information for destination managers, legislators, and wellness professionals.*

***Keywords:*** *Balneology; SPA; wellness tourism; tourism; well-being; sustainability.*

***JEL Codes:*** *I10, Q25, R41*

## Introduction

In recent decades, spa and wellness tourism has witnessed significant global growth, fueled by rising health consciousness, an aging population, and a collective shift toward holistic well-being. Balneology, the study and application of natural mineral waters, muds, and gasses for medical and therapeutic purposes, is at the core of this movement. Traditional spa areas and contemporary wellness facilities are seeing a resurgence in popularity as tourists look for places that provide both leisure and preventative health advantages. However this expansion also comes with an urgent duty: making sure that local communities and natural resources are sustained over the long run.

Balneological destinations frequently depend on fragile ecological systems, like mineral-rich muds, thermal springs, and unspoiled natural settings. Uncontrolled tourism development, overuse of resources and poor environmental management can threaten these therapeutic landscapes. Local culture can be undermined by socioeconomic pressures, which can also result in seasonal job instability. Therefore, maintaining the integrity and value of these places for future generations requires that sustainability be incorporated into the fundamental planning and operations of spa and wellness tourism.

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With an emphasis on how spa and wellness tourism might develop responsibly while preserving the ecological, cultural, and economic well-being of its locations, this article examines the relationship between sustainability and balneology.

**Literature Review**

As wellness tourism around the world expands quickly, balneology and spa tourism are increasingly being studied from a sustainability perspective. In their thorough analysis of medical, health, and wellness tourism studies from 1970 to 2020, Zhong et al. (2021) emphasized the trend toward a preventive, holistic approach to health. In addition to its benefits for physical and mental health, wellness tourism is valued for its sociocultural and environmental aspects of well-being. In the opinion of Kirov (2022) the distribution of leisure time as part of the social life is something very important in terms of regaining physical strength. The "holisticscape" concept is also put forth by Valente-Pedro, de Matos, and Pinto (2023), who contend that social context, environmental stimuli, and spaces all work together to affect visitors' overall health outcomes in sustainable tourism settings. These research lay the theoretical groundwork for connecting medical spa treatments to more general wellness and sustainability goals.

The crucial nexus between sustainability and business strategies is further supported by empirical research on spa tourist businesses and locations. According to a Polish study it is crucial for tourism businesses to include social and environmental responsibility into every facet of their operations in order to promote sustainable tourism business models in health resort locations. This entails giving suppliers' sustainable practices a priority, working directly with local authorities to control tourism and increase awareness, and revamping their value offer to include advantages for both clients and the neighborhood. As noted by Kirov (2025) one of the key challenges includes prioritizing profit over other values, so to address this challenge, firms should adopt a proactive approach that prioritizes ethical values and principles. Businesses should also acknowledge natural resources as important assets, include sustainability-related costs and benefits into their financial models, and promote social and ecological objectives. In addition to enhancing the tourism experience, promoting natural and cultural assets, particularly in historic spa towns, encourages community involvement (Szromek AR., 2021).

Simultaneously, the European Spa Association and affiliated groups released a statement in 2023 highlighting the substantial economic contributions made by medical spas to local economies, but also the necessity of stringent environmental regulations pertaining to waste, energy, natural springs, and urban greenery in order to ensure sustainability (Karlovy Vary Declaration, 2023). Katsarova's case study of Bulgaria shows how strategic national planning may elevate balneotherapy as part of sustainable health tourism at the destination and policy (macro) level. With more than 800 mineral springs, Bulgaria incorporates spa tourism into its year-round tourist plan, connecting it to local economic growth, green tourism, and public health advantages. Balneotherapy and wellness are

specifically promoted as measures to decrease seasonality, enhance workforce quality, and lower healthcare expenses through preventive in the nation's national tourist strategy for the period 2014–2030 (Katsarova, 2021). Although a comprehensive estimate of the total expenses related to tourism's unsustainable water consumption is still pending, it appears certain that the majority of water-use reduction strategies are affordable, and making efforts to guarantee sustainable water use will contribute to securing tourism's future. Water use needs to be studied in the same way that life cycle analysis is starting to look into the whole energy and emissions impacts of transportation and infrastructure used by tourists. Water conservation management and investments in sustainable technologies are therefore important approaches to take. Research on the health benefits of spa and wellness tourism adds credence to the case for sustainable balneology (Chenmei Liao, Yifan Zuo, Shaogui Xu, Rob Law, Mu Zhang, 2023).

In summary, research shows that wellness and balneological tourism are expanding quickly, providing quantifiable health and financial advantages, but also posing hazards to communities and natural systems if improperly managed. Emerging frameworks that provide guiding principles include eco-labels, sustainable business strategies, and holisticscape. The necessity for case studies that integrate environmental management, policy support, stakeholder involvement, and health outcomes in sustainable spa tourism is highlighted by the fact that research gaps still exist in practical implementation at the destination level.

**Methodology**

Sustainable growth in balneology is an interdisciplinary issue that touches on environmental protection, community engagement, governance, wellness trends, and business innovation. Through a systematic literature review and a thematic analysis approach this study offers a thorough grasp of how sustainability is conceptualized and operationalized within the spa and wellness tourism industry. The study finds important trends and gaps that influence sustainable growth in balneology by using Braun and Clarke's (2006) thematic approach for qualitative synthesis and Zhong et al.'s (2021) methodological framework for structured source selection.

Peer-reviewed journal articles and conference proceedings, published between 2000 and 2025 were gathered using databases including Scopus, Web of Science, and Google Scholar. Relevant sites were found using the keyword combination “sustainable management” and "balneology", “sustainable management” and "innovations in spa tourism", "community involvement” “sustainable management" and "wellness tourism". The systematic review was based on a total of 26 peer-reviewed articles written by 65 authors. Studies containing actual data, conceptual frameworks, or case studies concentrating on the socioeconomic, environmental, and governance facets of spa and wellness destinations were given preference under the inclusion criteria.

**Research Analysis and Discussion**

This approach facilitated a thorough synthesis of the body of research and contributed to the critical discourse on the opportunities and difficulties of sustainability in balneological spa and wellness tourism.

*Figure no. 1 Overview of sustainability perspective and key sources*

| Sustainability Perspective | Number of Authors Cited | Authors/Sources Included |
|---|---|---|
| **1. Environmental sustainability and resource management** | 5 | -Toshima Makoondlall-Chadee, Chandradeo Bokhoree (2024) - Bhuyan, K.N., Naik, R. & Khangarot, G. (2025). |
| **2. Public governance and policy frameworks** | 10 | - Katsarova S. (2021) -Zhong L, Deng B, Morrison AM, Coca-Stefaniak JA, Yang L. (2021) -Wanner A., Seier G., Pröbstl-Haider Ul. (2020) -Farsari, I. (2021). |
| **3. Community and cultural involvement** | 5 | - Valente-Pedro, C., de Matos, N., Pinto, P. (2023) - Tuti Elfrida, Anik Nuryani (2020). |
| **4. Sustainability innovations, IoT Technologies, Well-Tech** | 17 | -Tiwari Vivek, Thakur Shivani (2021) - Carballo-Cruz, E., Maroto-Martos, J. C., & Pinos-Navarrete, A. (2024). - Marios, S., Poullas., Elena, Kakoulli. (2023), Trip D., Simut R., Badulescu D. (2023) - Dimova D., Velikova E. (2022) - Zhang, Z.-H., & Huang, H.-C. (2025). |
| **5. Sustainable business and entrepreneurship** | 12 | -Kontic L., Todosijević M., Kontic J. (2022) – Bozhkova R. (2025), -Trip D., Simut R., Badulescu D. (2023) - Szromek, A.R.; Polok, G. A (2022) - Arsić M, Vujko A, Knežević M. (2024). |
| **6. Tourist perceptions** | 16 | - Qu, Mingjing (2024) - Lakicevic, M., Pantovic, D., & Fedajev, A. (2021) - Konajiya K., Meshram Y. (2024) - Qiang Li, Nutteera Phakdeephirot, Chai Ching Tan (2024) - Albasrie A., Himawan I., Sharipudin M. (2024) - Niță, A., & Drăguleasa, I.-A. (2025) Neacșu N., Popescu A. (2024). |

*Source:* Author's research (2025)

Reducing the ecological impact of tourism, especially in resource-sensitive areas like spa towns, has long been a concern, as evidenced by the prevalence of environmental sustainability and resource management in the reviewed literature. In balneological environments, where natural thermal resources are essential to the tourism offering, authors like Toshima Makoondlall-Chadee and Chandradeo Bokhoree (2024) emphasize how important it has become to assess environmental effects in the hotel industry. Hotel companies may support sustainable development by implementing best practices and a set of measuring standards. Advanced evaluation tools and techniques are advantageous because they can reduce pollution, attract eco-aware customers, improve the hotel's reputation, and reduce expenses through effective operations. Wellness tourism, a field that provides opportunities for rest, renewal, and comprehensive self-care, is gaining popularity as the world situation improves according to Bhuyan, K.N., Naik, R. and Khangarot, G.

(2025) who present the present state of this type of tourism in India, the potential for growth and the environment prospects, and compatibility with the Sustainable Development Goals. At the same time they emphasize that in the post-COVID-19 era, the adage "Health is Wealth" has gained new meaning, searching the value of putting one's health and wellbeing first.

From the perspective of public governance and policy frameworks Katsarova S. (2021) emphasizes in her article how balneotherapy is partly or entirely reimbursed by the National Bulgarian Health Insurance Fund by clinical pathways and social insurance programs, where the main focus is on the prevention and the promotion of human health making use of the natural healing resources in the region. A very important aspect in sustainable development of the sector is forming and updating certain regulations. As this industry develops, it is becoming more and more influenced by regional and national policy objectives that affect wellness services' strategic positioning as well as its integration with larger care systems. Markets (demand and behavior), destinations (development and promotion), and development environments (including regulations and impacts) have been highlighted by Zhong L, Deng B, Morrison AM, Coca-Stefaniak JA, Yang L. (2021) as the three main research issues in this context. Further investigation into how policymaking might promote equitable and sustainable growth in medical-health-wellness tourism is suggested for future studies. Wanner A., Seier G. and Pröbstl-Haider Ul. (2020) present in the analysis provided how evident it became that although national and European policies adhere to many sustainability goals, they have minimal impact on local growth. So, they explore the circumstances that could make policies more feasible for the local execution of broad policy objectives by offering suggestions. Farsari, I. (2021) argues that shift toward more corporatist and networked policymaking institutions has been a defining feature of governance.

The vital role that community and cultural engagement play in promoting sustainable spa and wellness tourism is another recurrent theme in the literature. This idea is especially applied to spa towns in more recent publications, such as Valente-Pedro, C., de Matos, N. and Pinto, P. (2023). The support and involvement of locals is crucial for the long-term success of tourist development, especially when tourism activities impact common natural and cultural resources, according to research by Tuti Elfrida and Anik Nuryani (2020), which contend that locals are proud to participate in the events as having a wider network, such as foreigners. They also take pride in the fact that people from different cultures can understand and learn about their culture. Interactions between visitors and locals foster cultural exchanges that impact both hosts' and guests' personal development.

Another major theme that supports balneology's distinct place in the larger sustainability conversation is the incorporation of innovations, IoT Technologies, Well-Tech aspects into spa tourism. According to researchers like Tiwari Vivek, Thakur Shivani (2021) innovative methods have the power to fundamentally alter how hotels and resorts provide their services and goods, and as a result, they may play a key role in creating a forward-

thinking society that encourages sustainable living, further supported by Trip D., Simut R., and Badulescu D. (2023). Furthermore, Carballo-Cruz, E., Maroto-Martos, J. C., & Pinos-Navarrete, A. (2024) demonstrate the necessity of an ongoing innovation process since it serves as a short-term stabilizer rather than a source of ongoing development. In addition Marios, S., Poullas and E. Kakoulli (2023) have found that the hospitality industry's sustainability concerns may be greatly addressed by IoT technology. But, for IoT technology to be successfully implemented in the hotel sector, there are still a number of important issues that must be resolved. It is possible to generate this fresh, contemporary convenience that is essential for the needs of the clients by adding clever amenities, facilities, and designs. The authors Dimova D., Velikova E. (2022) maintain that staff digitalization for example is linked to automated solutions that improve visitor satisfaction, cut expenses, and save operating time. Zhang, Z.-H., and Huang, H.-C. (2025) go further and examine the effects of immersive 360-degree virtual reality experiences on psychological health and life purpose as influenced by sustained VR encounters. According to their research, VR travel increases participation, promotes cultural appreciation, and offers a substitute for high-emission travel, all of which support the commercial reforms in the tourist industry that are driven by environmental sustainability.

A key element in the development of spa and wellness tourism toward long-term viability is the topic of sustainable business and entrepreneurship. According to academics like Kontic L., Todosijević M. andKontic J. (2022) stakeholders in the wellness sector and important tourism players are encouraged to create customized products and invest capital on digital marketing techniques to increase demand and drive prospective clients to businesses' websites. Additionally, providing a wide range of activities could enhance a country’s reputation in the travel industry. Bozhkova R. (2025) examines the relationship between current health issues and the function of wellness, spa, and balneological tourism businesses in reducing the negative impacts of urban pressures, emphasizing the potential of alternative therapies to improve quality of life. Even while there are sustainable initiatives in place for small enterprises, they are less developed and diversified than those in large hotels; also, their motivation is lower and the possibility of innovation is narrower. In other words according to Trip D., Simut R. and Badulescu D. (2023), large hotel resorts are mostly in charge of achieving the goals of sustainability in spa and health tourism (equipment, services, employee qualification and recruiting, and a sustainable and ecologically friendly orientation). Although spa businesses do not commonly apply business models as a management tool according to Szromek, A.R. and Polok, G. A (2022), the authors Arsić M, Vujko A. and Knežević M. (2024) believe that a positive experience of the development of wellness and spa tourism in a hotel/resort/spa destination will have a domino effect for the activation, development and success of other spa establishments in a country.

Since visitor views and expectations influence service design, resource usage, and general compliance with responsible tourism standards, it is critical to comprehend these aspects for efficient sustainability management in spa tourism. Qu Mingjing (2024) has

examined tourists' perceptions and emphasizes the role of feedback mechanisms in enhancing service quality and aligning with evolving tourist expectations and suggests actionable strategies for improving service quality, cultural integration, and sustainability practices to meet modern traveler expectations and promote sustainable tourism development. Lakicevic, M., Pantovic, D., and Fedajev, A. (2021) also agree that given that spa tourism is the area of the tourism business with very quick rate of growth and that wellness tourism is a significant component of spa tourism, it is necessary to determine the elements that affect the development of visitor loyalty to these types of travel destinations. Academics like Konajiya K. and Meshram Y. (2024) highlight the importance of sustainability in wellness tourism as a driving force behind visitor experiences, business success, and environmental responsibility. The researchers Qiang Li, Nutteera Phakdeephirot and Chai Ching Tan (2024) had examined the effects on visitor loyalty of destination image, service quality, affective commitment, and visitor satisfaction. Remarkably, affective commitment fosters loyalty more strongly than enjoyment. In order to promote visitor loyalty through greater emotional and psychological attachment, these findings emphasize the significance of a favorable destination image and excellent service quality. The results provide stakeholders with ways to enhance Kangyang (China) tourism's growth by emphasizing service excellence and emotionally engaging experiences. Sustainable wellness tourism is explored and by Albasrie A., Himawan I. and Sharipudin M. (2024) through the Hanara Wellbeing Center's holistic health offerings, where are promoted eco-friendly behaviors among visitors, such as the use of natural goods, the encouragement of conventional healing methods, and nature-based treatments that leave as little of an ecological impact as possible. Niță, A., and Drăguleasa, I.-A. (2025) suggest that understanding why tourists visit spa resorts will give new practical insights for the development of DMOs, as well as for hotel managers and small business owners involved in the spa and health tourism industry. This will enable those who currently engage in tourism activities, to modify their offerings of tourist products over the medium and long term and conduct more effective marketing and communication campaigns that are focused on meeting the needs of foreign visitors rather than local ones. In a research of Neacșu N., and Popescu A. (2024), the majority of respondents expressed an openness to sustainability issues and said they take environmental factors like waste reduction, energy and water conservation, and environmental protection into account when selecting a place to stay.

**Conclusion**

This systematic study emphasizes the need for an integrated strategy across environmental, social, technological, and managerial dimensions, highlighting the complex nature of sustainability in wellness, spa, and balneo tourism. The results indicate that in addition to environmental resource use and innovation, public governance, cultural involvement, entrepreneurial models, and changing visitor expectations must all be taken into account for effective sustainability management.

As the industry expands, it will be more difficult to match wellness tourism practices with more general sustainable development objectives without increased regulatory backing, stakeholder cooperation, and flexible approaches that take into account local community demands as well as worldwide trends. Future studies and applications should focus on filling in the gaps, especially when it comes to assessing long-term effects and incorporating smart technologies to promote sustainable change.

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# THE IMPACT OF CLIMATE CHANGE AND ITS CONSEQUENCES ON TOURISM IN THE CROSS-BORDER REGION OF THE REPUBLIC OF NORTH MACEDONIA AND BULGARIA

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***Abstract***

*The impact of climate change on business development in the past was not so explored as it is today, for one simple reason: in the past the cause was nature, but today, the cause is a human. This paper explores the impact of climate change on rural tourism in the cross-border region between the Republic of North Macedonia and Bulgaria and the implications for future economic development. The fires in 2024, especially in North Macedonia, greatly affected local tourism, damaged many natural assets, caused fear, and many reservations were canceled to the detriment of tourism operators. In this paper, by applying a methodology with data analysis of some climate change issues will be presented and analysis of a potential intervention will be provided. Climate changes awareness, cross-border cooperation and their integration into crisis management, dealing with the sustainable growth of rural tourism will be the subject matter of the analysis.*

***Keywords:*** *climate changes; crises; rural tourism; sustainable growth*

***JEL Codes:*** *Q54, L83, O18*

## Introduction

Climate change is one of the greatest global threats of the twenty-first century. The Intergovernmental Panel on Climate Change (IPCC, 2022) emphasizes that global temperature has already increased by 1.1°C compared to the pre-industrial period, and projections indicate a further rise if greenhouse gas emissions are not reduced.

These changes inevitably affect tourism, which is highly dependent on climate, natural resources, and perceptions of safety and security. Any change in the environment tends to result in fewer tourists, shorter stays, or substitutions towards other destinations, making tourism a vulnerable sector (Hall & Higham, 2005; Gössling & Hall, 2006).

In the Republic of North Macedonia, tourism accounts for around 5% of GDP (State Statistical Office, 2023). In the eastern and south-eastern parts of the country, especially rural areas where tourism is particularly important since generating income in communities facing depopulation and limited opportunities for economic development. Wildfires are becoming more frequent and more intense. According to the Crisis Management Center

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(CMC, 2024), 246 forest fires were recorded in 2024, affecting about 13,500 hectares of forest and scrubland. The Protection and Rescue Directorate (PRD, 2025) reports that the most affected areas were the east and south-east, including Mount Goten, where numerous weekend settlements and small accommodation facilities are located.

Fires cause not only environmental damage but also economic consequences усшг fewer tourists, cancellations, and a damaged destination image. According to the European Forest Fire Information System (EFFIS, 2024), the Republic of North Macedonia ranks among the countries with the highest percentage of burned area relative to national territory, together with Greece, Portugal, and Bulgaria.

In Bulgaria, fires in the Blagoevgrad and Sandanski regions in 2024 affected more than 9,000 hectares of forest (National Statistical Institute of Bulgaria, 2024), which also impacted tourism. This paper aims to analyze the impact of climate change on tourism in the cross-border region, based on primary research on the Macedonian side (focusing on tourist destinations near the fires on Mount Goten), but within the broader context of cross-border cooperation with the Republic of Bulgaria.

**Literature review**

Climate change is recognized as one of the most tremendous threats to humanity and global development in the twenty-first century. According to the IPCC Sixth Assessment Report (IPCC, 2022), average global temperature has increased by 1.1°C compared to the pre-industrial period and could rise by up to 4°C by the end of the century unless urgent mitigation measures are taken. These changes lead to more frequent extreme weather risks such as heatwaves, droughts, floods, and wildfires that directly negatively affect tourism.

Hall and Higham (2005) argue that tourism is very sensitive and vulnerable to climate change because its sustainability depends on stable climatic conditions, natural resources, and personal perceptions of safety. Gössling and Hall (2006) stress tourism's dual relationship with climate change: on the one hand, it contributes to emissions (about 8% of global greenhouse gases originate from tourism as reported by UNEP, 2021), and on the other hand, it is among the most affected industries.

The European Environment Agency (EEA, 2023) notes that Southern and South-Eastern Europe are among the continent's most vulnerable regions. These areas have experienced an increase in the number and intensity of forest fires. According to the Copernicus Emergency Management Service (CEMS, 2024), more than 500,000 hectares of forest burned in Europe in 2023, with the largest losses in Greece, Spain, Portugal, and across the Balkans.

EFFIS (2024) indicates that the Republic of North Macedonia is among the countries with the highest percentage of burned area relative to national territory. This heightens vulnerability, since forests are a key resource for eco-tourism, rural tourism, and hiking activities. Country examples corroborate the link between wildfires and tourism. In Greece, the 2021 fires on the island of Evia led to the immediate evacuation of over 10,000 tourists

(Papagiannakis et al., 2022). In Portugal, the 2017 fires resulted in a lasting decline in tourist numbers in affected regions (Santana-Jiménez & Hernández, 2011).

The Balkans are especially vulnerable due to the fact that they are expoesed to both Mediterranean and continental climatic influences. In Bulgaria, forest fires have become more frequent over the past decade. According to the National Statistical Institute (2024), more than 120 fires were recorded in 2024, affecting 9,000 hectares, mostly in the Blagoevgrad and Sandanski regions. Beyond environmental losses, Bulgarian fires have significant effects on tourism. Petrova (2019) finds that local communities rely on rural and spa tourism, which are vulnerable to climate change. Similarly, Ilieva and Marinoski (2018) emphasize that cross-border regions are particularly sensitive due to economic, infrastructural weaknesses or conflict of interests with stakeholders (Paligorov et al, 2014). North Macedonia has a high share of forest cover (about 37% of national territory). However, forest fires are among the greatest threats to forest ecosystems and to tourism.

According to the Crisis Management Center (CMC, 2024), 246 forest fires were recorded in 2024, affecting more than 13,500 hectares. The most affected regions were the east and south-east. The fires on Mount Goten, which are the focus of this work, led to serious economic consequences for owners of weekend houses and small accommodation facilities. The Protection and Rescue Directorate (PRD, 2025) highlights that wildfire response is hampered by three main issues: the absence of equipment for firefighting, difficult terrain access and insufficient inter-institutional coordination.

Research has long acknowledged that climate change modifies the vulnerability of destinations and their communities. In the Bulgarian context, Berberova (2012) emphasizes the country's high susceptibility to natural disasters, noting that increasing temperature extremes, droughts, and wildfires represent some of the most persistent risks. The consequences are not only environmental but also socio-economic, given the dependency of local economies on nature-based tourism. Complementary to this, Georgieva (2012) highlights the role of Geographic Information Systems (GIS) in wildfire prevention, stressing that technology-supported risk assessment is crucial for tourism destinations situated in or near forest ecosystems. The European Forest Fire Information System (EFFIS) and the Advanced Fire Information System (AFIS) provide practical tools for monitoring and managing fire risk, both of which have been integrated into regional and national wildfire strategies. In this direction, a specific type of citizen education and additional acquisition of literacies (Spasov, 2021; Kiryakova-Dineva & Yaneva, 2025) can be considered crucial.

At a broader scale, scholarship in tourism geography and climate adaptation has pointed to the complex interplay between tourism, climate change, and risk management. Frändberg (2005) problematizes tourism's dual role as both victim and driver of environmental change, underscoring the difficulty of reconciling development with sustainability. Mather, Viner and Todd (2005) similarly stress that climate change restructures international tourism flows, with regions highly dependent on weather-sensitive

outdoor activities becoming especially vulnerable. Perry (2005) situates this vulnerability in the Mediterranean, where rising temperatures and fire risk threaten to undermine the world's most popular tourism destination. These insights are highly relevant for the cross-border region of North Macedonia and Bulgaria, which shares both ecological fragility and a reliance on mountain and forest-based tourism. This also applies to the scope of international tourism (Kirov, 2015).

Additionally, EFFIS (2024) shows that in North Macedonia the average area burned per fire is significantly larger than the European average, indicating weaknesses in prevention and rapid suppression. At the national level, Macedonian authors (Trajkovski, 2019; Nikolovska, 2020) argue that rural tourism in the eastern part of the country has development potential but is highly vulnerable to climate change. Fires alos increase the risk of expecting fewer tourists and obtaining economic losses.

Taken together, the reviewed literature underscores that the cross-border region of North Macedonia and Bulgaria is positioned at the intersection of multiple challenges. Climate change amplifies wildfire risk, threatening both ecosystems and the tourism sector that depends on them. While technological tools such as GIS, EFFIS, and AFIS provide valuable support for prevention and monitoring, the sustainability of tourism in the region depends equally on institutional capacity, cross-border cooperation, and diversified tourism supply. Moreover, the literature highlights that effective crisis management must go beyond technical fixes, incorporating community perspectives, equity considerations, and post-crisis recovery strategies (Kiryakova-Dineva & Panov, 2024), including the restoration of destination image and the mobilization of alternative tourism offerings.

**Methodology and research design**

This study employs a mixed-methodological approach that combines quantitative and qualitative data. Such an approach have been chosen in line for the complexity of the problem: climate change and wildfires entail not only measurable economic impacts but also subjective psychological and social dimensions that are best understood through interviews and observation.

The research focuses exclusively on the Macedonian side of the cross-border region, centering on the most weak tourist destinations around the 2024/2025 fires on Mount "Goten" and the surrounding area, where the greatest impacts on tourism were recorded.

This study aims to answer three research questions:

RQ 1. *What is the impact of the 2024 and 2025 wildfires compared with previous years?*

RQ 2. *What measures were taken by owners, tour operators, and local institutions to cope with the crisis and which are the main economic and social consequences for local communities?*

The study looks at the impacts of the wildfires in 2024 and 2025 compared to what occurred in previous years, with a particular emphasis on tourism in Goten (Nort Macedonia) and the neighbouring areas. The study objectives revolve around whether tourist facilities

located in proximity to the fires were more severely impacted compared to those further away. The study will also assess how the media affected tourist perceptions of risk and safety, the research participants' individual coping mechanisms (the owners of the accommodation, tour operators and the local authorities), and the overall economic and social impact to the local communities.

To address the aims of the study, a purposive sample of 30 weekend homeowners and small accommodation facilities owners and five local authority and institutional representatives were used. Data was collected from May to August 2025 in a multi-method fashion. The questionnaire collected information in three areas including economic information (bookings and financial losses), tourist perceptions of fear, uncertainty, and cancellation motives and the participants' perceptions of institutional responses. The interviews with accommodation facility owners and institutional representatives provided deeper reflection on their experiences and ways of coping. In addition, field observations, including site visits and informal conversations with local residents, provided contextual understanding and complemented the survey and interview data.

Quantitative survey data were analyzed using the descriptive statistics: percentiles, medians, and comparisons among groups. Qualitative data extracted from the interviews and stake-holder information were analyzed by themes based on recurring themes associated with the economic losses, perceptions of risk, effects of the media narrative, and adequacy of institutional responses. Observational field notes confirmed and added detail to the findings. The research, however, has limitations. The study zone is restricted to tourist accommodations and facilities around Mount Goten; as a result, the general conclusions are to be limited within the region. Additionally, some of the information was, inevitably, personal perceptions, which introduces some subjectivity to the data. Furthermore, as the data were elicited from the short-term costs of the fires, no long-term effects can be identified at this time.

**Results**

One of the most important results here is the identificated decline in tourist numbers. Based on survey data, 10 of 30 owners (33.3%) of weekend houses indicated that the number of tourists during the summer 2024 and 2025 season had dropped by more than 50% compared to a similar period in pre-fire years. The greatest drop was noted by owners who use international booking platforms (e.g. Booking.com) after having received a spike in cancellations following a media blitz of the fires by international media. These owners are also the facilities that were closest to 2024 and 2025 fire sites. In contrast, for 15 owners (15/30 or 50%), especially those located farther from the fire epicentres, which made no sense to mention or much heightened drop. Owners focused on downplayed only by less than 10% decline than previous years, but discussed the psychological impact of fear which tourists harboured. Tourists often requested live calls or updates so they could be assured that the fires posed no threat to their vacation.

For the remaining 5 respondents (5/30 or 16.7%), they reported not changes with these facilities located far from fires.

*Table no. 1. Impact of fires on tourist destinations*

| Location of the tourist destination | Percentage of respondents % | Economic losses in %, for 2024 and 2025 compared to previous years | Other impacts |
|---|---|---|---|
| In the immediate vicinity of the fire | 33,3 % | Around 50 % losses | Panic, high risk, avoidance of the destination |
| At a safe distance from the fire (from 30 to 40 km) | 50 % | Losses less than 10 % | Fear and uncertainty among tourists, risk for future reservations |
| Location from the fire > 50 km | 16,7 % | No losses | No impact |

*Source:* Author's representation of the results

Results indicated clear spatial differentiation in wildfires' impacts on tourism-related businesses. Facilities closest to the fire suffered most overall; roughly one-third (33.3 percent) of respondents reported losses about 50 percent. These locations suffered unbelievably more than other regions, with panic and perceptions of risk from wildfires moving tourists to avoid the tourism destination altogether and increased the local owners' economic consequences. Facilities located at a distance of 30 to 40km from the wildfires experienced the moderate effects. Fifty percent of respondents reported losses of less than 10 percent. These reports suggest that booking levels were still affected, even though the damage was relatively minor. In these cases, tourists communicated feelings of fear and uncertainty rather than overt to avoid the destination altogether. Concern seems to be directed more towards risk with future reservations rather than cancellations of reservations upon return. Facilities located more than 50km from fire sites seem to lose contact with the economic loss altogether; only 16.7 percent of respondents noted they felt the tourism business suffered economic loss, and the guests expressed no negative perceptions regarding safety.

These findings indicate that proximity has a large influence both on tourist behavior and business outcomes. Panic responses were most pronounced in the areas where the fires were burning. In the areas outside the fires' immediate danger, perceptions were influenced less by the fire's immediate danger, and more by an overall climate of uncertainty. This would suggest that the impacts of wildfires on the social and economic conditions of an area may extend well past the areas directly affected, and the impacts dissipate significantly with proximity.

The study also showed a third result, with no specified research question highlighting the crucial role of the media in shaping tourists' perceptions of safety and risk during the wildfire crisis, though these perceptions were also deeply intertwined with institutional measures such as the forest access ban. This result can be identified in terms of decision on a complete forest-access ban and local community perceptions. Due to the fact that media

coverage of the fires was intense and often dramatized, emphasizing danger and uncertainty rather than providing nuanced information about the actual spatial extent of the threat. As a result, tourists who were located even at considerable distances from the fire-affected areas tended to associate the entire region with risk. This broad perception of danger was reinforced by the nationwide ban on movement in forested areas between July and August 2025, which, although necessary for safety, clashed with the realities of tourism in a region heavily dependent on outdoor activities.

Respondents consistently reported that the ban constrained tourism supply by cutting off the very experiences like hiking, cycling, and adventure tours, which in fact form the backbone of the North Macedonian local tourism product. The combination of alarming media narratives and institutional restrictions contributed to a climate in which tourists not only feared potential risks but also found themselves deprived of the activities they had traveled for. The reported opinion of one accommodation owner illustrates this dual effect. German tourists, who had not directly experienced fire danger, were confused and disappointed when denied access to biking trails, a restriction they found difficult to understand given the distance from the actual fires. Their reaction reflects how media-driven perceptions of danger, when coupled with sweeping institutional bans, can erode the sense of trust and satisfaction that is central to the tourist experience.

This dynamic shows that while the media played a major role in amplifying fear and uncertainty, the impact was compounded by the disconnect between risk communication and tourism policy. Instead of differentiating between high-risk and low-risk zones, both the media and official measures produced a generalized image of danger, which discouraged visitors across the region. Thus, the role of the media cannot be seen in isolation but must be understood in relation to institutional responses, which together shaped how tourists evaluated safety, risk, and ultimately, the desirability of the destination.

**Conclusion and Recommendations**

The findings confirm that climate change is a direct driver of crises in tourism. The 2024/2025 fires in the Goten area are part of a broader trend of more frequent extremes in South-Eastern Europe (IPCC, 2022; EEA, 2024).

CMC (2024) data indicate that the number of forest fires in North Macedonia in 2024 was 37% higher than the average of the previous decade. The PRD (2025) notes fires are becoming harder to extinguish due to droughts, lack of precipitation, and high temperatures. EFFIS (2024) similarly shows that North Macedonia has one of the largest burned areas per fire in Europe.

Declines in tourist numbers and revenues among many owners represent a serious blow to the local economy. In the Goten region, where tourism is one of the few income sources, such crises heighten community vulnerability.

This is consistent with Becken & Hay (2012) and Gössling & Hall (2006), who note that destinations reliant on natural resources with limited economic diversification are most

exposed to climate shocks. Findings show that Macedonian institutions have limited capacity for major fires. Although the CMC and PRD mobilized over 1,000 responders, a shortage of helicopters and aircraft reduced effectiveness. EEA (2024) similarly calls for modernizing firefighting capacity across South-Eastern Europe.

By contrast, in Bulgaria in 2024 additional forces were activated through the EU Civil Protection Mechanism, including aircraft deployed to Blagoevgrad (National Statistical Institute, 2024). This demonstrates the value of regional and European cooperation for effective crisis management.

Although focused on the Macedonian side, results indicate cross-border tourism effects. Tourists on North Macedonia–Bulgaria package routes often avoided mountainous areas. This supports Petrova's (2019) thesis that tourists perceive the destination regionally, not strictly by national borders.

The study results point to the need for strengthening institutional capacities in order to better prepare for and respond to crises of this magnitude. Investments in firefighting equipment such as aircraft, helicopters, and modern technologies are essential, alongside improved coordination among all actors involved in crisis management. It is equally important to ensure that decisions taken during emergencies are coherent and applicable across different sectors. A rapid-intervention system, supported by the European Union and regional partners, would significantly enhance the effectiveness of response measures.

Another major result highlights the importance of cross-border cooperation. The development of joint fire-management plans between North Macedonia and Bulgaria is vital for addressing risks that transcend national borders. Participation in European civil protection mechanisms, as well as the use of resources such as Copernicus Emergency Management Services and the European Forest Fire Information System, would further strengthen regional preparedness. Beyond immediate crisis management, collaborative post-crisis promotional campaigns are needed to help restore the image of affected destinations and reassure potential visitors.

This research also emphasizes the necessity of diversifying the tourism supply in order to reduce vulnerability to future crises. While mountain-based tourism remains a key attraction, the promotion of cultural, gastronomic, and spa tourism could provide alternative sources of resilience. Investments in forms of tourism less directly dependent on forest ecosystems, such as wine tourism or traditional cultural events, would not only enrich the regional offer but also help stabilize the sector during periods of environmental disruption.

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# INNOVATIVE TOURISM POLICY SOLUTIONS FOR SUSTAINABLE DEVELOPMENT FOR DESTINATION BULGARIA

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***Abstract***

*This study examines how national tourism policy shapes the sustainable development of the tourism sector in Bulgaria. The focus is on measures and actions designed to ensure the resilience of the tourism industry during crises, including frequent political changes, economic instability, health emergencies from the global Covid pandemic, geopolitical tensions in the Black Sea region and beyond, and various environmental disasters.*

*Tourism is a vital component of the Bulgarian economy, contributing significantly to employment, regional and national development, the preservation of national traditions. However, the vulnerability of the sector to crises has highlighted the need for adaptive actions and measures focused on the sustainability of political and economic policies in the field of tourism. Through a qualitative analysis of existing documents, the creation of new crisis-adaptive strategic policies, conducting interviews with stakeholders, this study identifies key challenges and opportunities for the development of Bulgarian tourism policies tailored to the existing crises in the field of tourism to achieve sustainable development goals. The analyses and findings highlight the impact of integrated crisis management, diversification of tourism products, support for local communities and national investments in green infrastructure. The study concludes with policy and economic recommendations aimed at increasing the sustainability of tourism in Bulgaria, while ensuring long-term environmental, social and economic Sustainability.*

***Keywords:*** *Bulgaria (Destination Bulgaria); Covid-19; Crisis; Crisis management; European Union; Ministry of Tourism; OECD - Tourism Trends and Policies; Tourism; Tourism Policy; Proactive or reactive approach; UNWTO; War Russia and Ukraine.*

***JEL Codes****: I10, Q25, R41*

## Introduction:

The Bulgaria`s tourism framework is an active and important instrument of the political system, which has become established for last two decades, as a result of the transformation of tourism from an individual necessity to a public necessity. Bulgaria's tourism development strategy is gaining increasing importance, which is projected in various directions such as: ensuring stable internal and external economic conditions for business, forming a favorable investment climate, supporting and stimulating small and medium-sized tourism enterprises, coordinating various sectoral policies with a tourism focus and for regulatory provision of the sustainable development of tourism.

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With reference to the European Parliament's official Fact Sheets on Tourism in the European Union from April 2025, tourism contributes around 10% to the European Union's GDP. It represents a significant share of economic activity, having an impact on promoting growth, generating employment, and fostering social development across the Union. It can be a important tool in the fight against economic decline and reducing unemployment.

According to Maria Velasco (2022) in the *Global Encyclopedia of Public Administration, Public Policy, and Governance*, tourism policy can be understood as a structured framework of ideas, decisions, and coordinated actions developed by governments, often in cooperation with private and societal stakeholders to achieve specific objectives within the tourism industry.

Tourism policy is a concept encompassing the purposeful activity of the state or other supranational structures such as the EU and UNWTO aimed at developing, regulating and managing tourism as an economic and social activity. It is a set of goals, principles and strategies through which the state and local authorities regulate the development of tourism. The aim of tourism policies is to achieve sustainable economic growth, social benefit and the protection of natural and cultural heritage.

The ultimate purpose of tourism policy is to foster balanced economic growth, generate social value, and safeguard cultural and natural heritage. As defined by the UNWTO (2008) in *Definitions of Tourism Policy and Developments in Tourism Policy-Making*, tourism policy comprises "all activities coordinated by public administrations with the objective of achieving predefined goals related to the analysis, attraction, reception, and evaluation of tourist flows within a tourism system or destination."

Tourism policy in Bulgaria is formed and implemented by several main institutions and their powers are regulated in legal and strategic documents. The leading state body for the formation, coordination and implementation of the state tourism policy is the Ministry of Tourism. According to Art. 5 and Art. 6 of the Tourism Act (promulgated in the State Gazette, No. 30/2013), it is stated that the Ministry of Tourism is a specialized body of the executive branch, responsible for developing and implementing state policy in the field of tourism.

The approval of national strategies and programs for tourism development in Bulgaria is carried out by the Council of Ministers, which also endorses all regulatory acts and strategic documents proposed by the Ministry of Tourism.

The formation of tourism policy in Bulgaria is also attended by industry organizations and local authorities, who consult and propose measures to improve tourism policy on the basis of Article 10 of the Tourism Act.

The strategic tourism policies of both Bulgaria and the European Union as a whole aim to maintain Europe's position as a leading tourist destination by promoting cooperation between EU countries by creating a strategic framework that provides mechanisms for response, adaptation and restoration of tourism sustainability in times of crisis. The main objectives are the diversification of tourism products and the implementation of various

instruments for promoting domestic tourism, by creating flexible schemes for supporting employment in the tourism sector. The development of mechanisms for state support for the tourism sector and strong international cooperation turns any tourism policy into an adaptive, anti-crisis plan for long-term development and crisis management, ensuring greater sustainability of each local tourism market.

In Bulgaria, the interconnection between tourism policy and crisis management become particularly evident during the Covid-19 pandemic, where the Ministry of Tourism, within its competence under the Tourism Act, coordinated a number of measures to support the sector, such as targeted aid for tour operators and hoteliers, employment preservation schemes ("60/40"), as well as programs to stimulate domestic tourism through vouchers. In the National Recovery and Resilience Plan (2021-2027), tourism was included as a priority area, with an emphasis placed on the digital transformation of tourism services and the integration of sustainable operational models . Thus, tourism policy became a framework for an anti-crisis strategy, providing short-term relief of enterprises with long-term structural reforms transformation of services and increasing the competitiveness of the tourism sector.

**Why is sustainable tourism important in times of crisis?**

As observed by Mathes, Gärtner, and Czaplicki (1991), the true impact of a crisis lies in its ability to swiftly damage reputations, demonstrating how a single unfavorable event can negate the results of long-term image-building efforts.

In the contemporary global context, threats from uncertain and unstable situations strongly affect everyday life. The tourism industry, which, as a complex system, is highly sensitive to such conditions due to numerous external factors - political, economic, health-related, environmental and social. The combined impact of these forces often exposes the sector to volatility and disruption, reinforcing its status as one of the most crisis-prone areas of economic activity.

The emerging global and regional crisis situations, such as Covid and the subsequent war between Russia and Ukraine, are among the most striking examples of crises with a global impact, which increasingly affect the globalized tourism industry with unfavorable news about the political, economic or social situation in a each world destination**.** Similar adverse events of the last 5 years have revealed serious deficits in the sustainability and adaptability of tourism in the world, in the European region and, in particular, in Bulgaria. . As a result, international tourist mobility experienced a dramatic decline, and both consumer behavior and organizational management practices within the tourism industry underwent profound structural transformations.

**Conceptual framework of the study**

This paper draws on the author's doctoral research, which focuses on the possibilities for proactive anti-crisis management in the tourism sector. The study applies on a comparison with various international practices, adapted for the purpose of their application

to the conditions of tourism in Bulgaria (by regions), while proposing a new approach that goes beyond the traditional reactive thinking about crises and situations by placing a stronger emphasis on the possibility of predictability with preparation for adaptive and targeted planning of crisis situations. This conceptual reasoning is grounded in the direction on provoked by the understanding that " *In the reactive approach, the company takes actions in response to already occurred market events - for example, the development of a new product or service, in the proactive approach, companies manage this process by building a long-term vision for business development, which foresees the market trend and anticipates the actions of competitors"* TechNews.bg (29.06.2016)

The proactive management approach basically includes a timely identification of subsequent risk situations, due to various geopolitical, economic, health or social crises that have deepened in time and space in different territories. After identification, the creation of flexible management models and the implementation of innovative solutions follows, through the strategic use of modern technologies, digitalization and digitization, which allow tourism organizations and destinations to minimize the negative effects and restore their competitiveness to a rebuild through innovation driven transformation.

The need to create new management paradigms in the context of growing uncertainty and global risks is of strategic importance for the future of the tourism sector in our country.

Any conceptual model for proactive anti-crisis management in tourism in Bulgaria, applicable in different contexts and adaptable to future challenges, should include five fundamental components: strategic planning and marketing, follow-up monitoring, constant communication with consumers and stakeholders, professional training of personnel in the field of tourism and of course, last but not least - institutional support in the form of the Council of Ministers, Ministry of Tourism, Ministry of Transport and Communications, Ministry of Regional Development and local District and mayoral organizations.

Evidence from international practice demonstrates that crises can accelerate the transformation of the supply and demand of tourism services, both towards sustainability and towards digitalization and diversification of tourism products. European policies of the member states show the promotion of an integrated approach to "greening" and the transition to digital tourism services as part of increasing sustainability in the tourism sector.

The 2022 OECD report “Tourism Trends and Policies: Bulgaria” highlights that the government’s initial response to the global pandemic consisted of mostly reactive measures aimed at stabilizing the tourism industry during its most critical phase. Neverthless, the report acknowledges that subsequent programs focused on long-term financial assistance and sector-specific tourism promotion have contributed to the development of a more competitive and forward-looking strategic framework supporting a proactive approach to sustainable tourism growth. Further comparative analysis by the OECD highlights that, although Bulgaria’s short-term crisis management has been effective, it remains an urgent need to build institutional capacity to implement lasting and sustainable transformations within its tourism policy framework.

This is a strategic moment when crises can serve as a "window of opportunity" for structural changes, such as shifting to more environmentally friendly practices, expanding price offers in the off-season and, most importantly, introducing digital applications and skills into the tourism industry.

"A crisis is a window of opportunity that is not obvious to many people and does not last long. We must learn to take advantage of it and emerge as winners, not victims." — Dr. Lucas D. Chalua

**Discussion context**

Tourism policy for sustainable tourism should offer good practices oriented towards:

- Economic development that provides income to the local population, creates opportunities for development in remote areas and reduces dependence on foreign markets and mass tourism;
- Social and health responsibility by promoting cultural understanding, solidarity and ethical practices
- Conserving nature by limiting the carbon footprint, conserving water and energy, and protecting ecosystems.

When developing anti-crisis measures in tourism during military and geopolitical crises, clear protocol procedures are created, taking into account the direct impacts of war on tourism, such as safety and visa restrictions. The focus is gradually shifting to domestic travel within Europe and to safer regions (Bluewin, 2024). The suspended visa facilitation agreement by the EC led to a sharp decrease in the issuance of Schengen visas to Russian citizens - from about 4 million in 2019 to approximately 0.55 million in 2024. (Bluewin.ch - Dangerous trend, 2025). Countries such as: Bulgaria, Finland, Latvia and Estonia lost a significant share of the Russian tourism market (Anadolu Agency, 2023). These changes highlight the need for adaptive strategies and anti-crisis mechanisms for the sustainability of tourist destinations.

Of great importance for adequate anti-crisis management in tourism on the international and national arena is taking into account the closed airspace over the Russian Federation. It is prohibited for most Western air carriers, which adds nearly 5 hours of flight time from Europe to Asia and increases not only time, but also fuel bills and makes airfares more expensive. For example, British Airways has suspended flights from London to Beijing until October 2025. Long-haul flights mean higher prices, lower demand and undoubtedly a higher competitive advantage for Chinese and Turkish airlines, which can still use Russian airspace.

The cruise industry is suffering huge losses after the suspension of cruise trips in the Black Sea region and the regional consequences of Baltic cruise visits to Tallinn, which fell by 50% after St. Petersburg, a leading destination, stopped being part of the routes. Montenegro, Bulgaria and the Baltic countries lost 20%-30% of their tourist visitors related to the Russian market. The economic consequences of all this are reflected in increased

transportation costs, higher airfares, reduced demand due to flight restrictions, and loss of tourist flows. Tourists are looking for nearby and accessible destinations, which stimulates domestic tourism, but does not fully compensate for the loss of foreign markets. The advantage of airlines that have access to Russian airspace – Chinese and Turkish airlines – is that they can maintain shorter routes at lower prices, which increases their competitiveness on the international market.

Against this backdrop, it is important for countries like Bulgaria and the Baltic States to diversify their tourism markets and strengthen the resilience of the sector. The importance of internationally coordinated measures, especially in the cruise sector and aviation, to reduce the risks of geopolitical restrictions is increasing.

The main anti-crisis strategy at the international level should be aimed at managing the price shocks resulting from the war in Ukraine and the sanctions imposed on Russia by the EU. Wholesale electricity prices in continental Europe continue to rise and by the end of 2024 exceed 200% of pre-war levels. (ScienceDirect, 2025) In this context, international institutions, such as the World Tourism Organization (UNWTO), are developing guidelines, recommendations and coordination mechanisms between countries that help deal with global crises and ensure the sustainability of the tourism field. (UNWTO, 2024)

***The future of avant-garde solutions in tourism policy***

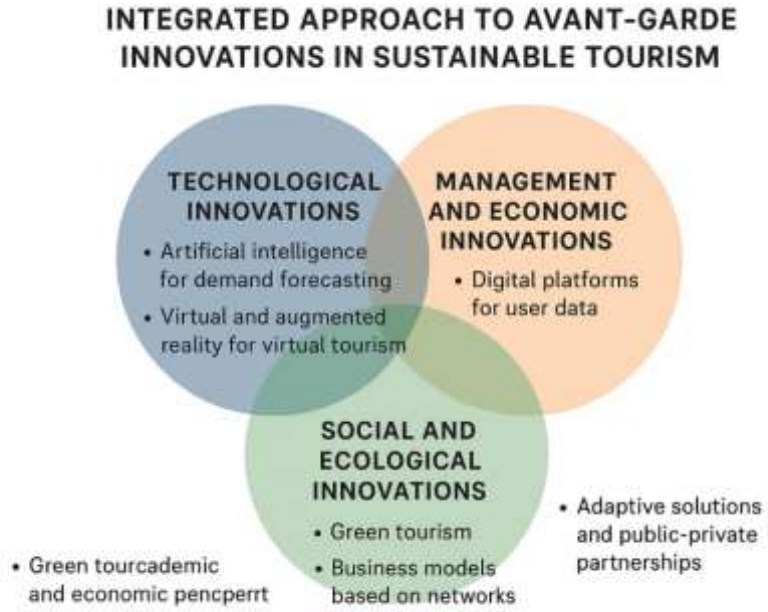
Developing a new, modern tourism policy must consider the opportunities and challenges for implementing cutting-edge and innovative solutions in the tourism industry. Global tourism is transformed annually, under the impact of climate and demographic changes, crises such as pandemics and energy crises, and last but not least the challenge of the digital revolution entering our daily lives. In this new global society, traditional tourism policies are proving slow and insufficiently adaptive. The future of cutting-edge solutions means the introduction of new technologies, fast management approaches and social innovations that not only optimize tourist flows, but also reshape the sustainable nature of the tourism field.

Achieving sustainable development of the tourism industry in the contemporary global context requires an integrated approach that brings together technological, managerial and socio-ecological innovations. Technological solutions play a key role in the optimization of tourist flows and adaptation to crises. Artificial intelligence allows for demand forecasting, dynamic capacity management and early warning of emerging risks, while virtual and augmented reality offer virtual tourist experiences, educational programs and the possibility of pre-selection of destinations, which increases tourist engagement and service efficiency (Buhalis & Amaranggana, 2015; UNWTO, 2024).

Management and economic innovations complement technological advances by providing flexibility and adaptability. Digital platforms for collecting and analyzing data on visitors and the load on tourist sites allow for informed decision-making and rapid response to changes in demand. Adaptive solutions, including temporary permits to test new services,

as well as public-private partnerships through tourism funds, support the financing and sustainable development of innovative projects (OECD, 2022). Socio-ecological innovations ensure the long-term sustainability of tourism destinations through green practices, ecosystem restoration, and waste minimization. Also, business models based on collaboration between small and medium-sized enterprises and sharing platforms promote social integration, ethical practices, and local economic development (Gössling, Scott, & Hall, 2021).

The unification of these dimensions: technological, economic and social innovation, forms an integrated strategic framework that not only allows for effective response to crises and market changes, but also creates new tourism models with competitiveness, social responsibility and environmental protection. Thus, cutting-edge innovations become a driver for sustainable and adaptive development of the tourism industry, balancing economic, technological and environmental goals and ensuring the long-term sustainability of tourist destinations.




*Source*: M. Belkoleva, 2025

The adoption of innovative and advanced solutions in tourism policy includes systems of technological, regulatory and social innovations designed to enhance destination efficiency and strengthen their long-term sustainability. In the context of rapidly evolving climate risks (fires, earthquakes, floods and others), policy responses require rapid adaptation from the application of real-time data to the introduction of quotas, fees and various instruments for the distribution of benefits and harms.

This paper, drawing on a critical analysis of established practices and innovative approaches applied within the European Union and the Balkan region, a conceptual model for building an innovation platform in the tourism industry of Bulgaria is proposed. The proposed model priorities the advancement of national digital marketing and the integration of value-added services through virtual and augmented reality, relying on proven results for increasing the competitiveness, sustainability and adaptability of tourist destinations in a dynamic market environment.

To inform the development of the proposed model, several European and Balkan approaches adopted over the last three years have been examined as representative case studies, such as:

- Slovenia. National strategy "a little more, a lot better"

The state has in recent years visualized the national image for a "green boutique", focusing on Vision 2022-2028 and the "Green Scheme of Slovenian Tourism (GSST)" initiative, directing European and national funding towards the development of sustainable tourist destinations aimed at domestic tourism and green experiences.

- Croatia, the city of Dubrovnik presents integrated plans for heritage management and limiting tourist flow. Dubrovnik is an attractive port city-museum subject to mass tourism under the auspices of UNESCO. In order to limit the negative effects of overtourism, the city developed an Integrated Action Plan, including zoning and management of tourist flow from cruises and limiting day visits. The port city has the territorial capacity to simultaneously receive up to 7 cruise ships of 3,500 tourists each, but through the developed plan of the city, only four cruise ships can dock in the port daily, to balancing economic activity with heritage preservation and urban sustainability.

- Greece, and particularly the island of Santorini, provides another significant example of adaptive tourism policy in practice. An iconic island destination known for its high seasonality, water and infrastructure constraints, and heavy cruise traffic. In March 2025, the Greek authorities adopted a plan to introduce restrictions on the number of cruise passengers, introduce landing fees to finance local infrastructure and protect the environment. This approach demonstrates a proactive balance between economic viability and ecological sustainability within high-pressure tourist environments.

Montenegro and Albania - in recent policy developments further demonstrate the growing regional commitment to sustainable tourism planning. Supported by the World Bank, Montenegro has initiated a National Strategic Project for Integrated Coastal Zone Management, scheduled for completion by the end of 2025. Similarly, in Albania, the "Albanian Riviera" Project was introduced in 2024 for the creation of national parks and the inclusion of natural sites in a single tourist destination. Both cases illustrate a shift toward integrated coastal management and eco-oriented destination development, reflecting broader regional trends in sustainability and responsible tourism governance.

The adoption of Artificial Intelligence into digital marketing technologies enables the possible to generation more extensive and reliable descriptions of the purchasing interest of

the potential client, without using human expertise and analysis. The implementation of various algorithms for digital processing is mandatory for the successful functioning of the marketing platform. The effective operation of contemporary digital marketing platforms will lead to a more accurate and extensive selection of offers that will be displayed in the form of advertising banners to users. For example, Google Ads - advertising under the PPC (pay-per-click) model, returns about $2 USD for every $1 USD spent - that is, an average of 200% ROI (Return on Investment) or numbers if a digital advertising company costs $100 USD and generates $300 USD in sales, then the profit is $200 USD or 200% *(RecurPost: Digital Marketing Statistics: Data-Driven Trends for 2025, August 2025)*

The digital marketing process enhances everyday consumer interest by presenting broadly targeted advertisements that contain not only offers and services that can be directly purchased, but also combinations of different offers that are not yet offered in the tourism market, based on the consumer's preferences. In doing so, digital marketing expands consumer awareness and stimulates demand for novel experiences that may not yet exist within the traditional tourism marketplace.

According to data published by Expedia Group, approximately "45% of travellers visit destination-related websites during the inspiration stage" Partners Expedia Group, 2025

User segmentation is a unique component of targeting the tourist journey using digital marketing technology. An example of segmentation can be observed in the sale of airline tickets, by targeting customers who have already traveled with a company and received various discounts and those who have never traveled with a given company. It is important to add that users can also be targeted according to the places they have already visited or want to visit and are looking for information about a new destination.

Different marketing campaigns, created on specific results, can be successfully used for analysis and targeting with different relevance, from exactly how a given product works best to creating a specific personalized message. For example, offering travel packages including hotels, airlines, rental cars in packages based on opinions from previous trips. Collecting more information from user data and creating profiles of travelers will lead digital marketing to offering individual offers.

The use of advertising banners enables users to plan their next trip with a specific company, to target more attractive destinations, and to receive special offers from travel companies.

**Conclusion**

The reviewed examples from Slovenia, Croatia, Greece, Montenegro and Albania show that avant-garde and innovative solutions in tourism policies have real potential, but will be economically and image-effective only when they are part of an integrated national strategic framework. For Bulgaria, avant-garde solutions offer solid potential for transforming our tourism policy, through the establishment of a unified, national digital platform and digital marketing and promoting Bulgaria as a single tourist destination with

diverse sectors of interests and experiences. Recent years have proven that in Bulgaria the division and promotion of the nine separate tourist regions does not work, for many reasons, for example: purely territorially, many tourist sites, due to their geographical location, are located in one municipality and are financed by one municipality, and according to the distribution of nine tourist regions, they belong to another tourist region, the Ministry of Tourism does not provide funding for marketing, advertising, service personnel and the tourist regions are left to finance themselves, relying on the membership of various organizations located on the territory of the tourist region, there is no single advertising campaign for all tourist regions and funding is relied on separately from local municipalities and regional districts.

The national tourism industry with its over 200 industry organizations has a solid amount of information and data that can be used by creating a single, national, digital tourism platform to target users selected by interests. The use and analysis of this consumer data, extracted through artificial intelligence algorithms, is key to the success of our tourism industry. The tourism sector must adapt and adopt the correct analysis of the data obtained and provide a comprehensive view of consumer demand.

The construction of a digital platform with visualization of tourist sites, united by different interest groups and based on artificial intelligence algorithms should promote Bulgaria as a single tourist destination. Each specific tourist site or cultural and historical complex can be presented through a sub-site, from which the potential user can load a virtual reality of the experience and experience it with reliable visual truthfulness and interactivity, based on photogrammetry from different resorts. The potential user, who is located tens of thousands of kilometers from our country, can virtually "walk" the tourist site and interact with the environment. In this way, every traveler can see and feel the place where he would like to go.

Transforming and renewing the overall approach to Bulgaria's tourism policy is vital for the future development of the sector. By implementing innovative technologies for managing consumer demand and cutting-edge tourism policies, Bulgaria will consolidate its position as a year-round destination attracting a wide range of tourists, increase its competitiveness in the international market and create a sustainable environment for the development of local communities.

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# DIGITALIZATION AND INNOVATION AS DRIVERS OF SUSTAINABLE GROWTH IN TOURISM: THE ROLE OF THE EXPERIENCE ECONOMY

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***Abstract***

*This study investigates the primary factors influencing sustainable tourism growth, focusing on digitalization, innovation and the experience economy. Through an analysis of current literature, it examines how new technologies and innovative approaches contribute to the sustainable development of the tourism sector. Digitalization is considered as a tool for increasing and improving the sustainability, efficiency and adaptability of tourism services, alternatively, innovations help to implement new solutions and practices that respond and satisfy changing tourism needs. It focuses on emotionally impacting experiences and the importance of the experience economy. The implementation of innovative practices and digitalization in the context of the experience economy provides opportunities for competitiveness and long-term sustainability in tourism across the industry, directing attention to measures and strategically oriented actions.*

***Keywords:*** *digitalization; experience economy; innovation; sustainability.*

***JEL Codes:*** M31, O31, Q01, Z32

## Introduction

In recent decades, tourism has developed not just as an economic activity, but as a platform for unique experiences and cultural exchanges. The concepts of digitalization, innovation and the experience economy are changing the way tourists interact with destinations and how the value of the services offered is built. In the modern world, where information and services are available at the click of a button, traditional approaches to travel are no longer enough - tourists are looking for personalized, engaging and memorable experiences. In this context, the digital economy provides tools for optimizing resources, improving accessibility and creating new models of interaction between tourists and businesses (Adeyinka-Ojo et al., 2020) and is commonly referred as component of the digital govenrment (Buhalis, 2007).

Innovation, in turn, allows the implementation of sustainable solutions and practices that minimize negative environmental impacts and support local communities (Kumar, 2016). By focusing on the emotional impact and uniqueness of experiences, the experience economy is a key factor for the long-term development of tourism, stimulating both

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economic and social sustainability. The purpose of this study is to explore how digitalization, innovation and the experience economy together shape the conditions for sustainable tourism growth. Through an analysis of contemporary literature, it examines the role of new technologies, creative solutions alongside the integration of socioecological frameworks that have the potential to transform the tourism industry and create competitive and sustainable practices for the future (Hwang et al., 2022), including on the national level (Todorov et al., 2023).

**Literature review**

Over the last few decades, the experience economy has gained a name as a theory that continues the furthers the enhanced value and quality in the service economy. Its basic claim is that the value of services and products can be seen not only in their material parameters, but through the personal and emotional experiences offered to consumers (Tripathi & Kumar Singh, 2024). In the classical economy, the focus of consumers is on goods, then services, in turn, the experience economy skips this and directs all attention and efforts by placing experiences at the center of consumer value. This transforms classic tourist trips from a basic trip to a specific destination into an emotional, engaging and innovative experience that seeks to leave tourists with lasting memories. The origin of EE is related to the behavioral economics(Şeker & Unur, 2022) and the modern development of marketing. In this context, the new type of literacies is relevant as well (Kiryakova-Dineva & Yaneva, 2025; Spasov, 2021). While mass models focus on rational and functional needs of consumers, EE focuses on their cultural, emotional and individual needs. By integrating experiences in tourism, consumers are offered personalization and uniqueness, which is extremely attractive to them in this day and age, where access to everything is just a click away. By applying the unique and emotional aspect in tourism, consumer satisfaction and thus loyalty increases many times over. The importance of EE can be observed at both the micro and macro levels. Looking at the individual level, tourists receive meaningful, unique, engaging experiences that satisfy both their cultural and social needs. On the other hand, at the macro level, tourism enterprises and destinations benefit from sustainable economic growth, competitiveness and social adaptability (Boswijk et al., 2012). EE also changes the requirements for the design and way of offering the tourism product. Including cultural experiences, engagement with local traditions, and educational or social interactions requires a deliberate, innovative, and strategically planned approach. Here, in turn, a natural connection with new technologies and digitalization is created. Modern technologies such as VR and mobile applications allow tourists to enrich their tourist experience in a new and interactive way, making it even more emotionally saturated and unique (Pouri & Hilty, 2021). In this line of thought, digitalization and technologies become a tool that enhances uniqueness and experiences, making them often even more accessible and adaptable, also contributing to the sustainable development of tourism, while at the same time creating the opportunity for new models and resource management (Tripathi & Kumar Singh, 2024). Additional aspects of digitalization can be

revealed in view of the competitiveness of the overall entrepreneurial business, as indicated by Atanasova (2024). Some new forms and preferences (Kirov, 2023), regarding not only management but also future aspects of AI implications, are expected to emerge in the academic discussion in the near future.

The digital economy is one of the most developing areas of the global economy and at the same time is a major driver for applications in tourism. It can also be defined as a process of transformation of economic activities and relationships through the incorporation of information and communication services and technologies (Tang, 2023). The tourism industry is one of the sectors most affected by digitalization, as it changes the process of creation, distribution, supply and consumption of tourism services. The development of DE in tourism includes several stages. The first is the creation of global reservation systems that offer an easy and accessible way to choose accommodation, transport, etc. from a huge amount of options. Some of the leading such systems are. Amadeus, Galileo, Worldspan and Sabre, which are constantly developing and improving (Tang, 2023). The second stage is online marketing, the way in which the offer reaches, how it is shaped, targeting an audience according to age, interest, gender, etc.

The second stage includes the introduction of virtual offices as well as the automation of a number of processes in tourism. The third stage is the implementation of virtual reality, which is often used for educational and advertising purposes through virtual tours. Augmented reality (AR) and virtual reality (VR) are some of the newest and most promising technologies that are completely changing tourism (Adeyinka-Ojo et al., 2020). They offer tourists the opportunity to "immerse" themselves in the spirit of a given destination, hotel or museum, thus further igniting the desire and interest in visiting. Such types of virtual visits, in addition to strong advertising and marketing benefits, also have a huge social focus, enabling people with disabilities, disadvantaged backgrounds or limited mobility to also touch cultural and natural landmarks and get to know the world in a way that was previously impossible. Thanks to VR, it is also possible to "visit" sites that are already closed or inaccessible for physical visits, a good example being the Laski Caves in France (Tang, 2023).

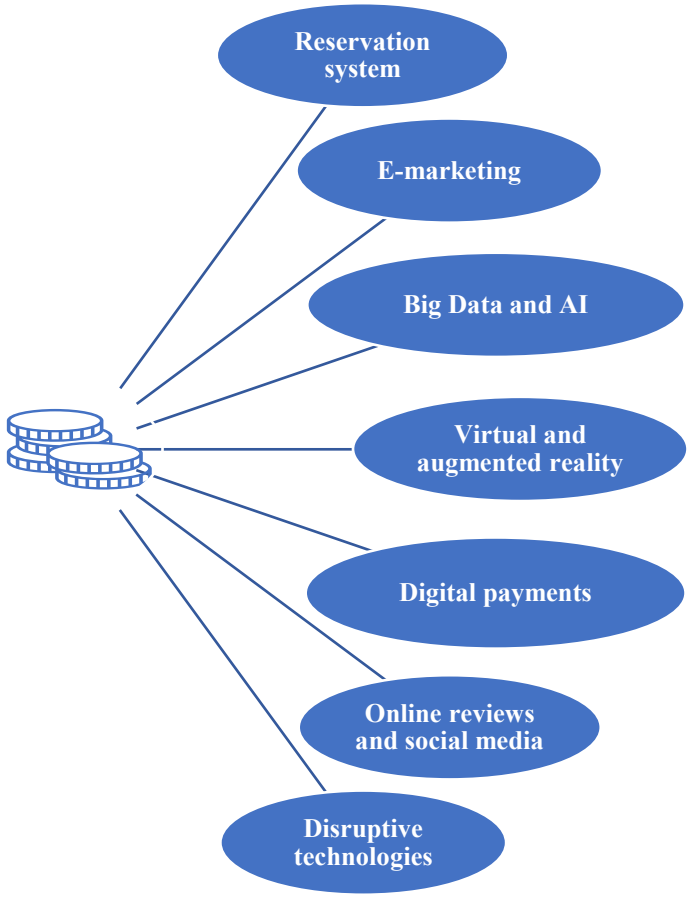
New technologies also have a major impact on the organization of package tours. Booking platforms offer access to a huge volume of different offers, using algorithms for offering and personalized services. In this way, customers are offered services tailored to their previous searches and interests (Laakkonen & Kivivirta, 2021). Another huge plus that facilitates users is the possibility of online payment, which makes the purchase much easier and faster. On the other hand, thanks to impulsive shopping and constant online advertisements, in addition to online payments, sales increase significantly.

Social networks also have a great impact on tourism, sharing photos on different platforms, online reviews, tagging different locations, directly affect the reputation of destinations and tourists' preferences. While positive ratings and beautiful photos provoke greater interest and visits, bad reviews force companies to increase quality and correct

mistakes already made. In this way, DE acts as a catalyst for competitiveness and tourism sustainability (Voronkova, 2018).

Digital applications in tourism can be classified into 4 groups as follows: consumer applications (browsers and social media), reservation and operating systems for companies, strategic management applications, innovative technologies such as VR and AR.The connection of EE, DE and behavioral economics builds a new paradigm in tourism development. While EE emphasizes the emotional value for tourists, behavioral economics emphasizes the relationship between factors such as emotions, social norms and prejudices and how it influences tourist choices. When we add digital to these three factors, products are created that meet the modern needs and preferences of consumers (Adeyinka-Ojo et al., 2020).

*Figure 1. Main Manifestations of the Digital Economy in Tourism*

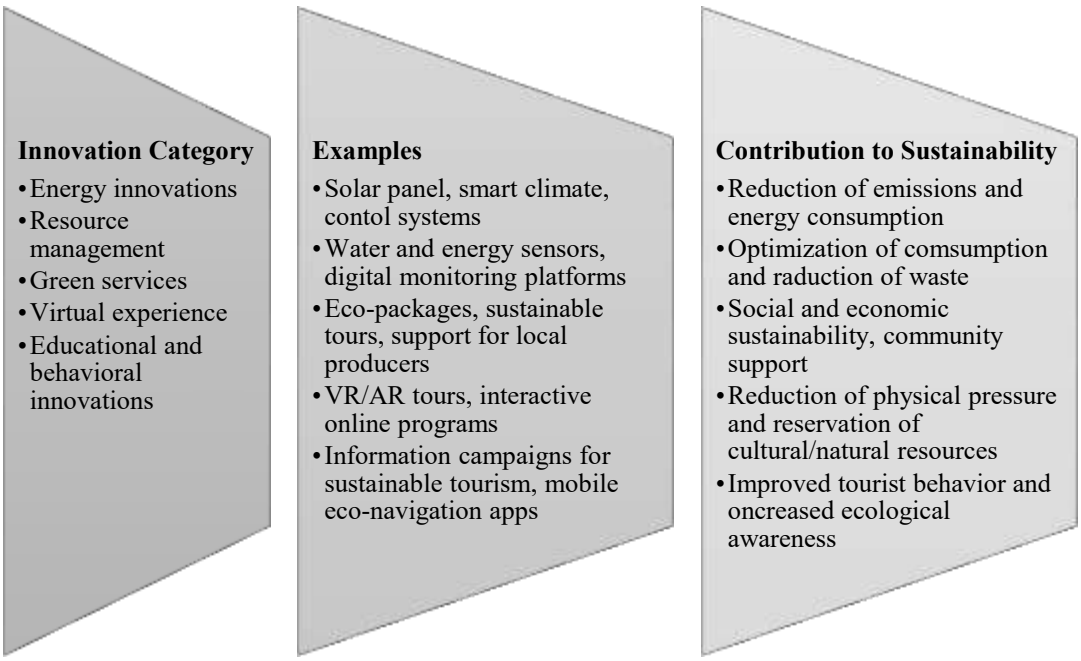



Modern tourism is undergoing a significant transformation thanks to the advancement of digital technologies, which are changing the way people plan, book and experience their travels. Online booking platforms allow quick and convenient access to transport, accommodation and travel packages, making it easier to compare offers and expand the possibilities of choice (Laakkonen & Kivivirta, 2021; Pouri & Hilty, 2021; Tang, 2023). At

the same time, digital marketing and social networks provide the opportunity for targeted campaigns, personalized offers and building brand trust, while online reviews directly influence the choice of destinations and the quality of services offered.

Virtual and augmented reality technologies allow tourists to immerse themselves in destinations even before they travel, exploring museums (Braun & Hollick, 2006; Voronkova, 2018), landmarks and hotels through interactive tours, which also supports the preservation of cultural heritage and social inclusion. Big data and artificial intelligence enable customer behavior analysis, demand forecasting, dynamic pricing and personalized recommendations, while supporting the effective management of resources and optimizing the work of tourism companies (Budeanu et al., 2016). Digital payments make international transactions fast, secure and convenient, eliminating the need for physical currency and reducing the risk of fraud. At the same time, new models of the sharing economy and disruptive technologies such as Airbnb, Couchsurfing and virtual hotel tours offer alternatives to traditional tourism, stimulating innovation and creating new business opportunities while challenging established practices (Bugaian & Diaconu, 2020; Chang, 2020; Emas, 2015). As a result, digitalization not only makes travel easier and improves the consumer experience, but also stimulates the development of more flexible, competitive and sustainable models in the tourism sector.

*Figure 2. Sustainable Innovations in the Tourism Sector*




*Source:* Author's table based on the works of: (Budeanu et al., 2016, 2016; Emas, 2015, 2015; Naydenov, 2018; Strippoli et al., 2024; Tescașiu et al., 2018)

The table visualizes how innovations encompass technological, organizational and behavioral aspects for tourism. Energy efficiency, social practices and digital tools combine to create long-term benefits for society and the environment.

Based on the reviewed analyses and examples of digitalization in tourism, five key recommendations can be formulated to guide the development of the sector towards more personalized and emotionally engaging experiences for tourists. First, instead of traditional maps of tourist attractions, it is recommended to develop interactive maps that show the places that evoke the strongest emotions in visitors – joy, inspiration, nostalgia or a sense of wonder. This allows the management of tourist flows not only according to the capacity of the destinations, but also according to the "emotional load", thus improving the experience and reducing stress in popular places (Baggio & Cooper, 2010; Şeker & Unur, 2022). The second recommendation concerns the creation of virtual "museums of the future", where through AR/VR technologies tourists can see not only the past, but also the future of a given place – for example, what the city would look like in 50 or 100 years under different scenarios of sustainable development. In this way, tourism tours become an educational and inspiring process that raises awareness and encourages participation in sustainable practices (Bugaian & Diaconu, 2020; Naydenov, 2018; Strippoli et al., 2024). The next recommendation concerns models of property-free travel, in which tourists do not bring their own equipment or materials, but rely entirely on shared resources on site – clothing, transportation, sports equipment, etc. This reduces pressure on resources and waste generation, while stimulating the local economy through the use of available services (Strippoli et al., 2024). The fourth recommendation involves "programmed slowdown" of technologies, where restrictions on digital services – such as the internet or digital signage – can be introduced in some areas to create space for slow and conscious tourism. This allows visitors to immerse themselves in the place, interact with the local culture, and experience the moment without being distracted by technology (Erdiaw-Kwasie et al., 2023; Nart & Öztürk, 2021). Finally, it is recommended to develop "collective memory" indices that assess how tourism experiences influence the preservation and transmission of cultural identity – for example, how many stories, rituals, or local traditions are shared between tourists and the community. These indicators can be used in strategic tourism planning so that it brings benefits not only to the economy, but also to cultural heritage (Loureiro, 2014; Paulauskaite et al., 2017). Finally, it is recommended to develop "collective memory" indices that assess how tourism experiences influence the preservation and transmission of cultural identity – for example, how many stories, rituals, or local traditions are shared between tourists and the community thus contributing to the broader scope of strategic planning. From a more detailed perspective, as pointed out by Kirov (2023), there is also a need to apply ethical behaviour in tourism practices. Such indicators can be used in strategic tourism planning so that it brings benefits not only to the economy, but also to cultural heritage (Loureiro, 2014; Paulauskaite et al., 2017).

## Conclusion

The research indicates that sustainable tourism growth today can no longer be seen in isolation – it is the result of the interaction between technology, innovation and skillfully constructed experiences. Digitalization provides new opportunities for optimization, personalization and expanding access to tourism services, while innovation allows for the integration of socially and environmentally responsible practices. The experience economy puts the human factor at the center, turning travel into an emotionally engaging experience that remains in the memories of tourists long after the trip has ended. The synthesis of these three approaches – digitalization, innovation and experiences – provides an opportunity to create sustainable tourism models that not only increase the competitiveness of enterprises and destinations, but also minimize the negative impact on the environment, support the local economy and strengthen cultural identity. Furthermore, the study highlights the importance of understanding the emotional reactions and behavioral patterns of tourists in order to be able to design experiences that are both meaningful and responsible. By leveraging new technologies such as virtual reality, artificial intelligence, and big data analytics, tourism service providers can anticipate visitor needs, improve service quality, and drive long-term engagement. Ultimately, the integration of these elements transforms tourism into a platform for sustainable interaction between tourists, businesses, and communities, where each experience is simultaneously unique, responsible, and inspiring.

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# DIGITALISATION AND INNOVATION IN EARLY WARNING SYSTEMS IN THE TOURISM SECTOR

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***Abstract***

*Tourism is increasingly facing crises caused by natural disasters, climate change, geopolitical instability, and health epidemics. A necessary way to remain out of such conditions among many others is the implementation of digitally supported Early Warning Systems (EWS), which are an essential element of prevention in managing risks. With the development of artificial intelligence (AI), geospatial analysis (GIS), the Internet of Things (IoT), mobile applications and the concept of digital twins, a new level of proactivity and adaptability in tourism planning and management is enabled.*

*The aim of this paper is to analyze the impact of digitization on the development and effectiveness of early warning systems in tourism. Using a theoretical approach and comparative analysis of countries with good practices such as Japan, Austria, Indonesia including the initiatives of North Macedonia and Bulgaria, the potentials and limitations of technological integration in the context of tourism security are explored. The results impose the need for interdisciplinary and institutional coordination, based on transparency, digital literacy and regulatory compliance with personal data protection regulations. The paper concludes with recommendations for advancing the resilience of tourism destinations through smart, inclusive and sustainable EWS strategies*.

***Keywords:*** *digitalization, innovation, early warning system, tourism, crisis management, smart technologies*

***JEL Codes:*** *Z32, O33, Q54, C88*

## Introduction

The modern tourism sector is undergoing serious transformations as a result of increased exposure to crisis events of various nature – natural disasters, climate change, epidemics, terrorist attacks and geopolitical tensions. These events not only disrupt the continuity of tourism activities, but also undermine visitors' confidence and increase the need for a comprehensive and preventive risk management system (UNWTO, 2022).

In this regard, Early Warning Systems (EWS) represent a fundamental mechanism for increasing the resilience of tourist destinations. Through the integration of digital technologies – such as artificial intelligence (AI), the Internet of Things (IoT), big data, satellite sensors, and mobile applications – EWS are transforming from reactive to proactive tools, enabling the indentification of early risk, effect prediction, including coordinated intervention (Riaz et al., 2023; Gaur et al., 2021).

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Additionally, the concepts of smart tourism and digital twins are receiving significant attention in the literature as innovative approaches to risk simulation, infrastructure management, and decision support (Giannoukou and Kougia, 2024). The *critical need for such digital solutions* was starkly highlighted during the COVID-19 pandemic, particularly for vulnerable tourism operators like the Bulgarian guest houses and family hotels, who faced a severe public health risk environment (Kiryakova-Dineva et al., 2021). It is this opportunity of the digital tools that creates conditions for real-time communication between tourists, local authorities and operators, which strengthens the capacity for prevention without compromising tourist safety.

This paper aims to examine the impact of digitalization and technological innovation on early warning systems in tourism, with an emphasis on:

-to identify the key digital technologies used in modern EWS;

-to present case studies of countries with good practices, including reference to the Balkans (Republic of North Macedonia and the Republic of Bulgaria), and

-to offer recommendations for developing the EWS in tourism.

This paper uses a qualitative methodology based on analysis of secondary sources (scientific papers, institutional reports, regulations), comparative analysis of case studies (Japan, Indonesia, Austria) and initiatives of the Balkan countries.

**Literature review**

The current literature on risk management in tourism points to the integration of information and communication technologies (ICTs) as key drivers of risk resilience. The underlying theories derive from the concepts of resilience theory, smart tourism, ecosystems, and risk communication models, which together highlight the importance of digitally-based prediction and intervention mechanisms.

The European Forest Fire Information System (EFFIS) and the Advanced Fire Information System (AFIS) provide practical tools for monitoring and managing fire risk, both of which are increasingly integrated into regional and national wildfire strategies. In this direction, a specific type of citizen education and the additional acquisition of literacies can be considered crucial. These critical digital and educational approaches (Kiryakova-Dineva & Yaneva, 2025; Spasov, 2021) are essential for effective risk management and real-time response capability.

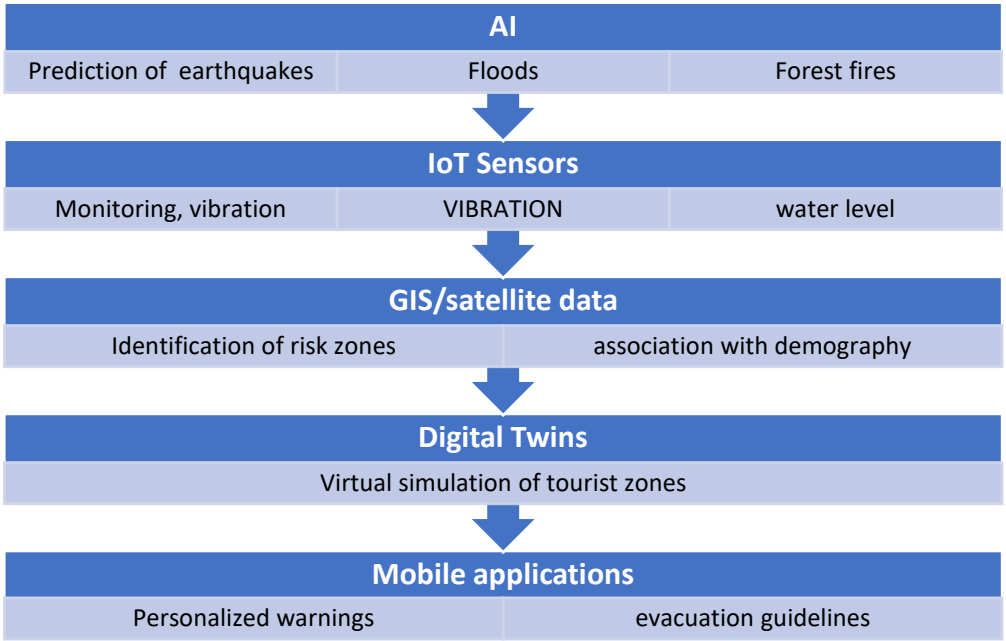
Resilience theory (Folke, 2006) examines the capacity of systems – in this case tourist destinations – to absorb shocks, adapt, and transform after a crisis. In the context of tourism, it means implementing tools that not only alert to hazards but also enable real-time adaptation. According to Puccio et al. (2025), EWS enable predictive analysis, dynamic response, and increased awareness in all parties concerned.

Smart tourism refers to a digitally enabled experience for tourists, where destinations use data, technologies, and algorithms to improve services and safety (Gretzel et al., 2015). This concept is key to transforming traditional EWS into integrated and personalized risk management tools. For example, systems in Japan automatically send earthquake notifications through mobile apps linked to a tourist's location (Tanaka, 2022). This issue

relates to a high extent to the preferences of leisure acitivities, as indicated by Kirov (2022) and finally concerns the impact of digitaliation on the competitiveness of entrepreneurial business (Atanasova, 2024).

The following figure presents the main aspects in the field of digitalization and technological supporting.

*Fig. 1 Technologies that drive the development of EWS*




*Source:* Author's representation based on the following authors Riaz et al. (2023), Gharbia et al. (2022), Alkurdi and Al-Orainat (2025), Giannoukou and Kougia (2024) and Wu et al. (2024).

Discussing the opportunities presented, the opinion of Monaco and Sacchi (2023) can be revealed, stating the greatest potential is to combine these technologies into a single system, where different data sources work in sync. This enables so-called decision-support systems (DSS) such as platforms that help authorities and operators make informed decisions quickly.

Last but not least, the use of technology in EWS must be compliant with national and international personal data protection regulations. According to the European Union (2022), any processing of location or biometric data must be legal, fair and transparent, especially when it concerns foreign tourists. The problem of the "digital divide" – i.e., unequal access to technologies – is also often highlighted as a barrier to effective implementation (Abbas et al., 2022).

**Methodology and presentation of the case studies in a research design**

This study employs an analytical methodology based on case studies identified in three countries and the discussion of their relevance to Bulgaria and North Macedonia.

Through the analysis of specific case studies, effective practices and different models of digital early warning systems in tourism can be identified. This chapter presents five examples from different geographical contexts: Japan, Indonesia, Austria, North Macedonia and Bulgaria. All cases demonstrate the adaptation of technological solutions according to local conditions, legal framework, and tourism infrastructure.

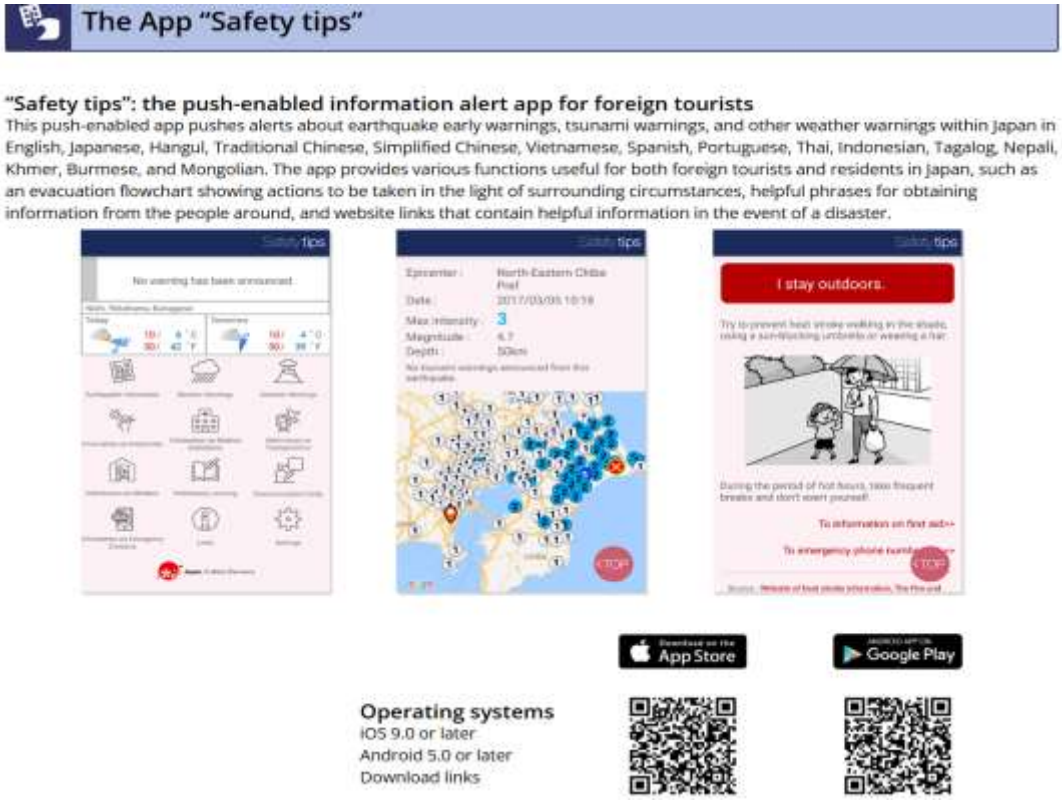
**Results and presentation of the case studies**

*Japan: The Integrated mobile applications for earthquakes*

Japan is a world leader in the development of digital EWS, especially due to high seismic activity. The city of Kyoto has introduced a mobile app integrated with IoT sensors, local radio signals, and with the National Meteorological Agency. The app automatically sends alerts in multiple languages to all visitors, based on their location (Tanaka, 2022). The system is directly connected to local tour operators, hotels and public transport, which allows for timely action and evacuation.

There can be identified seven key components of the system, i.e. 1. The "Safety tips" App, 2. Multilingual Support, 3. Real-Time Alerts, 4. Actionable Information, 5. Emergency Resources, 6. Integration with Other Systems, and 7. Purpose and Effectiveness. *The "Safety tips" App* is the core of the system for tourists. It functions as a direct communication channel, pushing important alerts and safety information to users. The app for *Multilingual Support* supports numerous languages, including English, to ensure that a wide range of foreign tourists can understand the warnings and information provided. The *Real-Time Alerts system* delivers real-time notifications for impending disasters such as early earthquake warnings, tsunami warnings, typhoon updates and other weather warnings, volcanic eruptions and other special warnings. The app *Actionable Information* the provides practical guidance on what actions to take during a disaster, such as instructions for being outdoors, inside a building, or near the waterfront. Then, the *Emergency Resources* includes contact information for emergency services and embassies, as well as communication cards with useful phrases for interactions during a crisis. The information is also broadcast through traditional media like TV and radio, and by network providers to smartphones, ensuring wider dissemination is provided by the *Integration with Other Systems*. The last one is the *Purpose and Effectiveness* which goal is to enhance the safety of foreign visitors in Japan by providing them with timely and crucial information when they are in a vulnerable position. By integrating disaster warnings into a user-friendly, multilingual application that also offers practical advice and emergency contacts, Japan has built an effective early warning system that caters specifically to the needs of its tourism sector.

*Figure 2. Presentation of the applications*




*Source:* The figure is based on the information for Japan - Early warning Mobile App in https://www.jnto.go.jp/safety-tips/eng/app.html

*Indonesia – Safe Tour: Tsunami Warning System*

In Bali and Java, Indonesian authorities are collaborating with the private sector to develop Safe Tour, a national digital platform that integrates data from sea level sensors, GPS, and mobile infrastructure. The app uses an AI model to predict potential tsunamis and automatically sends evacuation instructions (Gaur et al., 2021). Additionally, the platform is integrated with booking and accommodation systems, enabling the distribution of critical information directly to tourists. Some implications of ethical management can also be revealed, as indicated by Kirov (2023).

Monitoring and alerts are operated by *the Agency for Meteorology, Climatology and Geophysics (BMKG*), the system uses a network of sensors, including seismographs and tidal gauges, to monitor for earthquakes and changes in sea level. If a potential tsunami is detected, the BMKG issues a warning within five minutes to local authorities and media.

There are several *Public channels* that disseminate warnings to the public through multiple channels, including the following:

✓ Coastal sirens are regularly tested on the 26th of every month at 10:00 a.m. A steady three-minute siren indicates an immediate evacuation is necessary. These are the *Sirens.*

✓ Warnings are sent via television, radio, and sometimes mosque loudspeakers. These are the *Broadcasts*.

✓ The government can send text message alerts, although these have proven unreliable in past disasters due to network outages. This is the *Emergency messaging*.

✓ Historical failures, such as during the 2018 Sulawesi tsunami, expose significant weaknesses in the warning system. *These are System limitations*.

✓ However, delays in notifications have been noted due to lack of maintenance and funding. They can be reported *as Failed equipment* or even "Last-mile" problems concerning *Power and communication outages* following an earthquake when reaching coastal communities and tourists.

*Figure 3. Tsunami – Indonesian early warning system*

*Source:* The figure is based on the information for Indonesia, given on https://rtsp.bmkg.go.id/

*Austria – Digital Twins and simulations in ski resorts*

In Tyrol and Salzburg, tourist centers use digital twins of ski areas to simulate avalanches, mass evacuations and risk analysis. These digital models are based on GIS and satellite data, combined with real-time data from IoT devices placed along the routes. Giannoukou and Kougia (2024) note that such systems not only improve safety, but also create a competitive advantage in winter tourism through transparency and trust. Digital twins create dynamic, digital replicas of physical assets or environments, integrating real-time data from sensors and simulations to provide up-to-date information on their condition and performance.

By combining historical data, real-time information, and predictive models, digital twins can identify early warning signs of potential system failures, natural hazards, or other critical events. These digital models offer a holistic view of complex systems, allowing for data-driven decision-making in facility management, infrastructure monitoring, and

disaster response. Digital twins provide a unified platform for data sharing and visualization, facilitating clear communication of potential risks and potential impacts to stakeholders, from facility managers to civil protection authorities.

*Fig. 4. Digital Twin of Alps – Early warning system*

*Source:* The figure is based on the information for Austria, given on https://digitaltwinalps.com/

**Case Study Analysis**

The development of digital early warning systems (EWS) plays an essential role in reducing the risks of natural disasters in tourist destinations. Through a comparative analysis of five case studies – Japan, Indonesia, Austria, North Macedonia and Bulgaria – we can see the key strengths and limitations in their approach to integrating technology with tourism security.

Japan is an example of technological and institutional maturity. The "Safety Tips" app combines IoT sensors, mobile location, multilingual support, and direct integration with the public transport and hotel sectors. Strengths are the high availability of real-time data and clear communication with tourists. The weaknesses are minimal, but the system requires constant maintenance and a high degree of coordination. Indonesia, through Safe Tour and the national InaTEWS system, is showing innovations in the use of AI and tsunami sensors. Integration with tourist booking platforms is an advantage, but a serious drawback is the last-mile problems – delayed warnings, non-functional equipment and poor coverage in rural areas, which poses a risk to visitors. Austria uses digital twins for ski resorts, enabling avalanche and evacuation simulations. This approach offers proactive risk management and builds confidence among tourists. The system is technically advanced, but depends on financial resources and regional support, which may be a limitation to its widespread application.

*North Macedonia* has several components – E-112, NICS, MKFFIS and Meteoalarm – which individually have potential, but the systems are not integrated, not adapted for tourists and lack a mobile platform with multilingual support. Poor coordination between institutions and the tourism sector limits the impact of existing resources.

*Bulgaria* is showing progress through BG-ALERT (cell broadcast), Copernicus/EFFIS and local video fire detection systems. The systems are functional and partially accessible to tourists, but lack a unified interface or mobile application for foreign visitors. Potential is present but fragmented.

Overall, countries like Japan and Austria clearly stand out with systems that are technologically advanced, connected, and visitor-oriented. Indonesia is showing innovation, but it faces operational challenges. Bulgaria and North Macedonia have partial solutions, but lack integration, tourist adaptation, and real-time mobile communication. This points to the need for digital transformation and regional strategies to improve tourism safety.

**Conclusion and Recommendations**

The global distribution of multi-hazard early warning systems (MHEWS) remains deeply uneven, despite technological advances in risk monitoring and modeling. As the World Meteorological Organization (WMO, 2022) points out, only about half of the countries have functional early warning systems in place. It is particularly worrying in the context of intensifying climate extremes, urbanization and growing exposure of populations and tourists to risk.

Case study analysis confirms that technological solutions exist – from IoT-enabled mobile applications (Japan), through AI-based predictive models (Indonesia), to digital twins for ski areas (Austria). However, their effectiveness depends on institutional maturity, the quality of last-mile communication, and the level of integration with the tourism and public sectors. North Macedonia and Bulgaria, although facing limited resources, are showing potential through MKFFIS, BG-ALERT and regional GIS systems, which opens up the possibility of Balkan cooperation and knowledge transfer.

Research suggests that critical barriers lie not so much in a lack of technologies, but in institutional weaknesses, insufficient involvement of local communities, lack of funding, and low confidence in reporting systems (Shrestha et al., 2021; Taylor et al., 2018). Ineffective systems lead to catastrophic consequences, while positive experiences from early warning systems save lives.

These studies confirm that the effectiveness of systems depends not only on technology, but also on the ability to build trusted, transparent and inclusive communication channels that reach the most vulnerable groups – including tourists. Only through joint investment in institutions, regional cooperation and digital innovation is it possible to achieve the goal set by the United Nations: "Early Warnings for All" by 2027.

In this respect, several recommendations can be made. The first one is the integration of EWS into national tourism strategies, as a mandatory element of licensing and certification. The second is the creation of common digital platforms at the regional level

(e.g. Western Balkans), with the support of international bodies (UNWTO, EU Civil Protection). A third crucial recommendation is the investing in security-certified systems that can be adapted to local needs. Positive aspects can also be also realized through institutional support for the training and digital education of tourism staff and operators on the use of EWS, which is of utmost importance for the sector. Equally important are promoting digital ethics and the protection of personal data as a basis for trust and fairness. The final conclusion is that the proper implementation of digital EWS can transform the role of tourism from a passive recipient of risks to an active actor in prevention, resilience and sustainable development.

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# GLOBALIZATION OF THE ECONOMY AND THE CHOICE OF NEW ORGANIZATIONAL FORMS OF MANAGEMENT OF TOURISM INDUSTRY ORGANIZATIONS

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***Abstract***

*At present, the international tourism market is characterized by processes of fierce competition for clients, sales markets and spheres of influence. The number of foreign companies engaged in tourism is increasing on the Russian market. This inevitably leads to the fact that the majority of profits from international tourism in Russia go to foreign companies. Russian tourism industry organizations, due to the lack of sufficient experience, knowledge, financial capabilities, support from government agencies, are experiencing great difficulties in resisting competition from companies that have long been operating on the international market and engaged in tourism activities. It is possible to change the unfavorable situation by applying the strategy of synergy, for example by creating new models of organization and management of the tourism industry, which incorporate the latest achievements of the theory and practice of global management and governance. Globalization allows firms to achieve economies of scale through standardization of goods and take advantage of global marketing.*

**Keywords:** tourism organizations; globalization of economy; international markets; global associations;

***JEL Code:*** *F60*

## Introduction

The strategy of synergy is a strategy for obtaining competitive advantages by combining two or more organizations. The synergistic theory, which is ultimately relevant to this day, assumes the achievements of the theory and practice of global management and management of joint use of resources (strategy of technologies), market infrastructure (joint sales) or spheres of activity (synergy of planning and management). The significance of the strategy of synergy is that it helps to obtain higher profitability of production when organizations are interconnected than in a situation where they are managed separately. However, I. Ansoff notes in his works that the main danger of this strategy is the lack of flexibility, as well as possible compromises and delays in decision-making when creating and operating organizations resulting from mergers. The idea of forming global associations began to be actively promoted in the United States in the mid-1980s. Research conducted by universities and management consulting firms in the United States characterized global

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association as a sure means of conquering major foreign markets and increasing the competitiveness of American transnational companies.

**Literature review**

The term "global" means that companies view the world as a single whole, in which national borders and national differences between consumers are erased. Globalization allows companies to achieve economies of scale in production through standardization of goods, and to use the advantages of global marketing. The global market is an international market, the demand for which can be satisfied by the supply of one basic product, supporting this demand with sales and marketing tools. The main idea of globalization is to determine the general characteristics of markets and target groups of consumers, independent of the peculiarities of individual countries. The process of business globalization is characterized by: the disappearance of national and regional preferences, the gradual equalization of consumer needs and demands; economies of scale in production due to standardization of manufactured products or services; taking advantage of global marketing.

The internationalization of markets has led to the fact that the same competing companies operate in almost every country. A study of the literature has shown that there is no unity of views among scientists and management specialists on the nature of global associations, their advantages, disadvantages and prospects. The concept of "global association" is interpreted quite broadly and contradictorily (Table 1).

*Table no.1. Various definitions of the concept of "global unification" (GO)*

| Contents of the definition | Author of the definition |
|---|---|
| It is working on a global scale and coordinating the activities of all departments and branches regardless of the country of the company's location, "When most people say "global", they simply mean | R. Meyer is an Assistant Professor of Strategic Management at the Rotterdam School of Management, Erasmus University in the Netherlands. |
| "International"it is a single, integral entity, in which no preference is given to any one country. It is a corporation without a homeland | S.Weinig is the founder and director of the Materials Research Corporation, a subsidiary of Sony Inc. in the USA. |
| This is a strong position in all the most important markets for the corporation, the presence of a global information system, adaptability and balance with the needs of the supply system. | J. Stapford is Professor of International Business at the London Business School. |
| GO is a special type of strategic and organizational approaches | S. Ghoschel is a professor of strategy and management at INSEAD, Fontainebleau, France. |
| Its command of vast resources worldwide, thinking globally and acting locally, developing products that are needed by all while taking into account the specific needs of customers in individual regions, using world-class resources, and having managers act as “citizens of the world” | Vice President of Com-J. Freidheim of Booz Allen & Camilton |

| | |
|---|---|
| Internal advantages of firms, making them more sustainable. Internal advantages of a firm are mainly associated with the introduction of innovations, improvement of technology and constant changes in organizational and management structures in accordance with the latest requirements. Firms that have achieved international success do not remain passive observers in the process of creating competitive advantages, but are drawn into an endless process of searching for new advantages and in the struggle with competitors in order to retain them | M. Porter is a professor at Harvard University. |

*Source:* systematization by the author (2025)

Globalization of business within an organization contributes to the formation of strong competitive positions in comparison with competing organizations. Competitive advantages of an organization depend on the ability to use a number of factors: access to cheap resources; national stimulation of investment; overcoming trade barriers; access to strategically important sales markets; etc. The theory of competitive advantage states that an organization whose production intensively uses factors of production that are available in relative abundance within the organization will have an advantage over competitors in the production of those products.

Global associations are formed through mergers, acquisitions and takeovers of organizations. In many European countries (Great Britain, Germany, France, Spain) a global division of the market is taking place through the acquisition of companies. For the tourism industry, as for other industries, the process of concentration of enterprises is characteristically going beyond national borders through the creation of transnational corporations.

**Best practices**

An example is the German concern Preussag, which owns the leading tourist group TUI Group. Preussag is the undisputed leader in tourism both in Germany and in Europe. Its subsidiary tourist enterprise TUI Group accounts for more than half of the group's annual turnover. It is expected that by 2002 this figure will be 80%. Preussag's total turnover in 2000 was 21.8 billion euros (of which 10.6 billion euros came from tourism). In 2000, Preussag acquired one of the largest British tourist companies, TUI Group, for 2.8 million euros Thomson Travel Group. Another large German company, C&N Touristic, is the main competitor of TUI, formed in 1999 after the merger of the charter airline Condor and the Neckermann Reisen group. It is the number 2 European tour operator with an annual turnover of 15.1 billion German marks. C&N Touristic bought the French company Havas Voyages. Preussag also acquired a block of shares in the largest French network Nouvelles Frontieres. And C&N Touristic, in order to have influence on the English market, acquired the leading company in England, Thomas Cook. The third largest German company, Rewe

Touristic, expanded its presence in the domestic German market during 2000 by acquiring DER, LTU (including 40% of the shares of LTU airlines) and a number of others. The major British tour operator First Choice (its total turnover in 2000 was £1.88 billion) acquired the following tour operators in order to improve the operation of its own agency network: Tours in Turkey; Nazar in Germany; Marmara/Etapes Nouvelles in France; Tai-rus, operating in Austria and Switzerland; Bosphorus in Belgium.

The capacity and degree of competitiveness of the provided tourism services, the availability of management experience, production efficiency, the size of the business and the degree of concentration, and the investment climate of the host nation (political and socioeconomic stability, the state and prospects for the development of the economy as a whole and the industries of interest to the investor, attitudes towards foreign investment, economic and tax legislation, etc.) are all factors that tourism organizations must consider in order to implement an effective foreign investment policy. The organization's objectives and the characteristics that define it, as well as the economy and policies of the host nation, enable it to select the course of action that, with lower production costs, generates greater profit. Particular consideration is given to the organizational structure of foreign enterprise while establishing international associations: establishing a new tourism organization overseas; purchasing an existing foreign tourism industry organization; acquiring a portion of a foreign tourism organization's capital that grants control; purchasing securities of foreign tourism industry organizations that do not grant control; and lending money and credit to foreign branches for the expansion of their operations or to foreign businesses. Each of these forms has advantages and disadvantages of its own and requires specific conditions to be implemented. Establishing a new organization in the tourism services sector is one of the most costly and complicated processes, and it carries a significant amount of risk because it requires acting in an unfamiliar setting. Considering market characteristics, having a reputable and well-known trademark is beneficial. Such a foreign tourism operation is essential. Only a few Russian tourism firms require a thorough understanding of local conditions.

When a foreign company engaged in the tourism sector is acquired, the investor can exploit the contacts and authority of the acquired company, as well as instantly become involved in local structures. This type of investment has the benefit of allowing the acquired organization to run much more quickly and eliminating the need to perform tasks associated with starting a new business. The following issues are connected to transactions involving the purchase of foreign capital, either in full or as a portion of a foreign company's capital: the existence of extremely high (prohibitive) acquisition prices in many nations; an increase in transaction costs as a result of a thorough analysis of the acquired tourism organization's financial situation, which necessitates access to specialized organizations and firms for bank consultations, account checks, etc.

Since the new management of the organization is responsible for all of its past obligations, it is recommended to acquire not the entire organization, but only its real estate;

modernization or organizational restructuring of the acquired organization in the tourism services sector.

In developed countries, control over companies is most often established by buying up their shares, traded on the stock exchange or in over-the-counter circulation. These can be both “friendly” acquisitions and “aggressive takeovers”. For share purchase operations, special rules and procedures have been developed and are in effect in each country. In addition, for the processes of globalization in the tourism industry The following trends are typical: penetration of transport companies into the sphere of activity of tourist firms. Thus, the airline "Air France" founded a tourist company "SOTAR". The Belgian airline "Sabena" organized the tourist company Transair International was founded, and the Swiss Swissair has created the tour operator company Kiopi. The state The French railway company SNSF has a tour operator the company "Vacans 2000", one of the 13 largest travel agencies France, which accounts for 50% of the country's tourism market. The Dutch tourism consortium "HINT" was founded by the aviation by the company "KLM", the maritime concern "NSU" and the Dutch railway,railway company. In Russia, Aeroflot airline created the tourist company "Mir Aeroflota"; the creation of multi-industry concerns, which provides the opportunity for cross-subsidization, i.e. the activities of some enterprises included in the concern are financed from the profits of enterprises in other industries of the same concern. The formation of multi-industry concerns allows tourism industry organizations to avoid ruin. Capital is directed into tourism by oil companies (for example, "AGIP"); trading companies that are the owners of networks of the largest department stores and mail order trade (Neckermann, Kaufhof, Hertie). Having an extensive sales network, the trading companies "Neckermann", "Kaufhof", "Hertie" without significant material costs open offices for the sale of tourism products, placing them in their department stores; acquisition of their own accommodation facilities by tourism enterprises. Thus, the French travel company "Club Mediter-ranee" ("Club Med") has 172 tourist complexes (tourist villages) located in 35 countries around the world; participation of financial structures in the tourism industry. In the Netherlands, RABO Bank is engaged in tourism operations, in Russia, the insurance group Spasskie Vorota founded the tourism company Spasskie Vorota-Tour. The above-mentioned companies operate in the global market, strive to plan and control their activities on a global scale, develop a strategy for the development of their company, an organizational management structure, make decisions on investing funds, improve the work of personnel, use resources in those places and directions that promise the prospect of long-term growth and the possibility of making a profit. Currently, it is evident that multinational corporations are expanding into domestic markets, to which local producers can respond in several ways. They have the option to cease manufacturing and avoid competing in sectors without specificity more worldwide collaboration with renowned organizations. In the current environment, where competition from foreign tourism organizations has shifted to the Russian market, Russian tourism organizations must establish a variety of international cooperation strategies that enable them to learn the rules of international business, adjust to

the demands of international markets, and ultimately boost the competitiveness of both the organization and its tourist offerings. Therefore, in addition to using the available factors of production of tourism products or services, the processes of globalization require tourism industry organizations to focus on the following aspects in order to increase the efficiency of their operations: ensuring the organization's strong position in price competition on a global scale, including with foreign tourism organizations in the Russian tourism market; active innovative activities of tourism organizations; continuous improvement of products; expansion of the range of services provided; use of the latest achievements in management, marketing, finance, etc.; usage of contemporary information technology, gathering fresh concepts for enhancing the given goods and services, carrying out market research, creating a well-known trademark for the company, upholding its reputation, and winning over customers. According to experts, establishing and maintaining a global organization is a difficult process that takes a lot of time and money, which is why many foreign businesses are using strategic alliances as an alternative method of coordinating international cooperation. Generally speaking, there is still a lack of appropriate progress in the theoretical aspects of the formation of strategic alliances. The inability to see this phenomenon from the outside due to their brief existence and the ambiguous outcomes of the majority of coalitions is one of the primary causes of this. It is possible to identify the following variations in the formation of strategic alliances:

1. Concentration, such as mergers, cross-participation, or other types of regrouping of participants' property in strategic alliances, results from cooperation within the framework of subsequent projects. In this instance, the union merely serves as a stopover before concentration.

2. Regardless of the outcome of the cooperation, it is episodic in nature and ends without impacting the partners' strategic positions. Each participant regains autonomy after the project is over, but the union modifies the terms of the partners' competition.3. Strategic alliances develop over time, going beyond the initial goals, but this does not lead to vertical integration. Each partner retains independence in decision-making and the right to leave the alliance. The existence of such "unfinished" alliances indicates the desire of partner firms to use the experience of working together to improve the efficiency of cooperation.

3. Organizations established to carry out cooperative programs or joint activities eventually leave partners' control and start functioning as autonomous businesses, the logic of whose growth conflicts with the partners' objectives.

4. Using strategic alliances to strengthen one partner's position at the expense of others. Strong partners utilize alliances to weaken weaker ones and keep them from becoming competitors, whereas weak partners use alliances to overcome technical lag.

A comparative analysis of global associations and strategic alliances is presented in Table 2.

*Table no.2. Comparison of organizational forms of activity of tourism industry organizations*

| Problems solved by different organizational forms | | |
|---|---|---|
| **global associations and strategic alliances** | **only global joins** | **only strategic alliances** |
| 1. The likelihood of the collapse and "robbery" of small and medium-sized firms by larger ones that are part of the association | 1. Allocation of risks associated with the development and use of new technology | 1. Possibility of building complete technological chains |
| 2. Rational organization of marketing and scientific and technical production | | 2. Possibility of overcoming antitrust legislation and obstacles related to nationality |
| 3. Diversification of production to reduce risk 2. Possibility of overcoming antitrust legislation and obstacles related to nationality | | |
| 4. Financial support for enterprises developing and mastering a new tourism product or entering a new sales market | | |
| 5. Reducing production costs | | |
| 6. Strengthening competitive positions in the market of this type of tourism product | | |
| 7. The possibility of more easily bypassing difficulties of a political and administrative nature | | 3. Maintaining the formal independence of companies that are members of unions, which will allow them to count on the support of the government and the population of the country, which always has great confidence in the activities of national companies |

*Source:* systematization by the author (2025)

An analysis of Table 2 allows us to conclude that strategic alliances have a number of advantages over global associations: they do not require significant capital investments to develop activities; they allow us to overcome barriers of antitrust legislation; they use less complex organizational structures to coordinate international activities.

**Conclusion**

In an increasingly globalized economy, tourism industry organizations must adapt their management structures and strategies to remain competitive on international markets. The strategy of synergy, through the formation of global associations and strategic alliances,

presents significant opportunities for growth, efficiency, and market expansion. While global associations offer benefits such as resource consolidation and improved market presence, they often come with challenges such as high capital requirements and organizational rigidity. Conversely, strategic alliances provide a more flexible and cost-effective alternative, enabling companies to share risks, access new technologies, and maintain operational independence. For Russian tourism organizations facing intense foreign competition, embracing globalization through innovative organizational forms and international cooperation is essential for enhancing competitiveness and ensuring long-term sustainability.

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# TOURISM EDUCATION IN GREECE: HISTORICAL RETROSPECTION AND STRUCTURE

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***Abstract***

*Tourism education is the most important process for the development of tourism. There are two categories of tourism education programs. The tourism management program and the hospitality management program. The educational system in Greece regarding tourism is divided into three levels: secondary, post-secondary and higher education. At these levels there are public and private educational institutions. For good quality services, the education that the staff has received from educational institutions is not enough. Tourism development and tourism education are not synonymous terms. They have differences. Education focuses on the present, concerns each employee individually, is carried out immediately and aims to correct deficiencies. On the other hand, development focuses on the future, has long-term effects and prepares employees for the future. In this Article, a brief presentation will be made of the History of Tourism Studies in Greece and secondarily of their Structure.*

***Keywords:*** *Tourism; tourism education programs; higher education; quality services; history of tourism studies; Greece;*

***JEL Code:*** *L83*

## Introduction

Tourism education in Greece has evolved significantly since its inception in the 1960s, driven by the increasing importance of qualified personnel in the industry. The goals of tourism education include enhancing service quality, developing skilled workers, fostering partnerships between businesses and educational institutions, and aligning with technological advancements (Baum, 1995). Initial offerings focused on secondary-level training primarily in hospitality, but as tourism became a leading economic sector, diverse educational pathways emerged, such as Guide Schools and Technical Vocational Education Centers (Law 710/1977). The formal establishment of tourism studies as higher education occurred in 2001, transitioning to university status by 2018. Currently, tourism education spans various institutions, with a significant role played by the state and guidelines established by the Ministry of Education and Tourism. The formal structure encompasses three levels focused on vocational training, with specialized programs available in public and private sectors. The School of Guides, previously a significant institution under the Ministry of Tourism, faced changes following Law 4093/2012, which reduced training duration and eligibility. This led to disparities among graduates, prompting calls to reinstate

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earlier training models. Ongoing reforms aim to address modern requirements and improve the professionalism of tourism graduates, ensuring they meet market demands effectively. Two Tourism Vocational Schools in Rhodes and Crete operate at the higher vocational education level (level 5) under the Ministry of Tourism, established in 1956 and 1996. In 2020, a four-year curriculum was authorized to enhance qualification recognition. Pre-2000, tourism education included secondary and higher tertiary levels leading to Technological Educational Institutions (TEI), upgraded in 2001 to level 6 after lengthening programs to four years. The 2013-2014 "Athena" plan reformed this structure, merging tourism departments with broader business administration fields, resulting in increased admissions despite operational challenges. Post-2017, universities began creating tourism departments, including new programs at the University of Piraeus and the University of the Aegean, enhancing academic offerings in tourism studies.

**History of Tourism Studies in Greece**

An essential requirement for the development of tourism is the presence of staff who possess particular qualifications, talents, and competencies, which is facilitated by tourism education. Alongside academic instruction in the tourism sector, practical training plays a significant role in shaping labor relations today, amplifying competition in the open market, and fostering advancements in modern technology (Lytras, 1992). Baum (1995, 184-185) identifies several key objectives that tourism education programs should aim to achieve:

• enhancement of the quality of tourism services offered

• development of skilled personnel to satisfy requirements at every level within the tourism business structure

• facilitation of productive partnerships between companies and educational organizations

• maintenance of the tourism sector's connection to emerging technologies and the latest trends in tourism

• advocacy for policies that acknowledge the importance of human resource development

• elevation of graduates' reputation in the job market.

The swift and ongoing advancement of the tourism industry, alongside the emergence of more sophisticated markets and the introduction of specialized tourism offerings, necessitates a workforce that possesses greater specialization (SETE, 2014). According to a study conducted by SETE (2014), employers within the tourism sector show a preference for candidates who have completed higher education and possess expertise in a specific area. However, a notable gap exists, as there is a deficiency of individuals with the specific skills that employers are seeking, including proficiency in foreign languages and familiarity with various computer applications.

The participants in the study characterized public education as being antiquated and lacking a clear educational focus. Conversely, they highlighted the "specialized" nature of

private education, which, however, is devoid of a solid theoretical foundation. Additionally, they collectively concurred on the importance of training to ensure that graduates can fulfill the demands of their respective industries. Nearly all of the survey respondents deemed it essential to concentrate on a specific area within the tourism market, as well as to enhance theoretical knowledge, ensuring it is current and adequately equips graduates with the necessary resources.

**Early Beginnings**

In Greece, the importance of establishing tourism education as a separate discipline (Fidgeon, 2010) became evident during the 1960s. This recognition stemmed from a variety of social, political, and economic transformations that influenced the character and dynamics of tourism activities. The realization that tourism workers play a crucial role in shaping the tourism product and enhancing its quality underscored the necessity for skilled and knowledgeable personnel within the tourism sector. Over time, the inclusion of tourism education in Greece began with isolated courses in educational institutions and subsequently evolved into a specialization within Business Administration degree programs (Logothetis, 2001). Furthermore, the intricate nature and creativity inherent in tourism activities, which have led and continue to lead to the emergence of new tourism varieties and the provision of specialized services (Moira and Mylonopoulos, 2014: 321-328), highlighted the requirement to develop and offer advanced study programs as well as to expand existing curricula, transitioning from basic hotel management to more specialized domains. Over the past two decades, Greece has experienced notable advancements in tourism education and training. Specifically, the integration of technological institutions with universities, enacted by legislation in 2018, has had a considerable impact on the tourism sector. Higher education in tourism within Greece is endeavoring to partially respond to the new requirements that have emerged from the economic crisis, while also addressing the societal demand for an enhancement of tourism studies and, consequently, the professional standing of graduates.

**Expansion and Diversification**

The development of tourism education and training in Greece  Initially, tourism education in Greece was restricted to the secondary level and primarily delivered by state-operated Technical Vocational Schools for Tourism Professions (TESTE), as well as Technical Vocational Schools and Vocational Training Departments affiliated with the Greek Employment Agency (OAED). These programs focused mainly on hotel and restaurant management, as tourism was largely viewed in terms of hospitality services, especially cooking and serving meals. As tourism began to emerge as the leading economic sector of the country, new areas of education and training were established, including Guide Schools (Law 710/1977). Furthermore, the Higher Technical and Vocational Education Centers evolved into Higher Technological Education Departments (TEI), placing greater focus on Tourism Business Management (Logothetis, 2001).

**Structure of Tourism Education in Greece**

The transportation of populations together with the increased globalization during the last decades, caused important changes in the educational field (Agiannidou, C., & Bozhkova, R., 2021). The Greek educational system for tourism is structured across three main levels, each with its own institutions, curricula, and objectives. The formal establishment of tourism studies at the highest educational level did not occur until much later, following the legal acknowledgment of technological education as higher education in 2001. Subsequently, in 2018, technological education was effectively discontinued when Technological Educational Institutions (TEI) underwent a transition to university status. Presently, the tourism education framework continues to undergo significant changes and remains subject to ongoing scrutiny and development. In general terms, tourism education and training in Greece are noted for their complexity and multifaceted nature. This education is delivered by a wide range of institutions from both the public and private sectors (Moira, Mylonopoulos & Anastasiou, 2004:59). The leading institution is the state, represented by the Ministry of Education and Religious Affairs. Concurrently, various private institutions offer tourism education, with their programs and curricula receiving approval from the Ministry of Education. A report indicates the existence of 39 private vocational training providers and 25 colleges that function either independently or in partnership with international universities (Thelen – Zouni – Papatheodorou, 2017). Therefore, within the public sector, the principal role in tourism education, training, and further education is primarily held by the State through the Ministry of Education and Religious Affairs, with a secondary contribution from the Ministry of Tourism (Law 3270/2004). In line with the amendments introduced by Law 4763/2020, vocational education and training in tourism is organized into three tiers: levels 3, 4, and 5. This education is offered by Vocational Training Schools (ESK) and Vocational Apprenticeship Schools (EPAS) under OAED (Ministry of Labor and Social Affairs) focusing on professions within tourism and hospitality at level 3, by Vocational High Schools (EPAL) that specialize in tourism businesses at level 4, and by Institutes of Vocational Education and Training (IEK) and EPAL Apprenticeship Schools at level 5. The IEKs can be either public or private. The public IEKs are administered by both the Ministry of Education and the Ministry of Tourism, as well as other relevant Ministries when applicable. All graduates are granted certification through standardized examinations conducted by the Ministry of Education.

**The School of Guides.**

The Ministry of Tourism runs the School of Guides, which is a vocational institution for post-secondary education. Prior to 2011, individuals aspiring to become guides were required to attend the School of Guides under the previous Tourism Education and Training Organization, which fell under the oversight of the Ministry of Tourism. The Schools located in Athens and Thessaloniki functioned regularly, and additional schools operated in places such as Rhodes, Corfu, Mytilene, Rethymno, and Heraklion, Crete, based on demand. To

gain entry into the school, applicants needed to succeed in several subjects, including an essay, Greek geography, and Greek history. The school provided free education for a duration of five academic semesters, and the curriculum encompassed various courses, museum and archaeological site visits, internships, educational trips, guided tours, participation in professional tours, and lectures. The courses were distinctly tailored, focusing on the history of Greece (ancient, Byzantine, and modern), the history of art, Greek mythology, Greek literature, Greek music and dance, Greece's geographical landscape, as well as Greek archaeological and tourism legislation (Mylonopoulos & Moira, 2011). The Athens School of Guides received an award from CEDEFOP as Europe's leading professional school. Law 4093/2012 led to the closure of tour guide schools and permitted accelerated training programs for tour guides by University Institutions (Mylonopoulos, Moira, and Kikilia, 2012). The law restricted these programs to graduates from archaeology, history, history and archaeology, social anthropology, cultural management, and ethnology programs, thus narrowing the eligibility for other potential applicants. The length of these programs decreased from 2.5 years to just two months. The financial responsibility for these accelerated courses fell to the trainees, with costs ranging from 600 to 900 euros. The programs primarily focused on theoretical instruction with little to no practical components. According to the Tourism Education Directorate's tour guide department of the Ministry of Tourism, since the initiation of training programs in 2013, twelve distinct programs have been conducted, leading to the graduation of 411 participants. This new regulation resulted in a division among tour guides, creating a disparity in skills and guiding capabilities among graduates. Graduates from traditional tour guide schools opposed this change. In light of the protests and the overall challenges posed by the current system, the decision was made in 2017 to reinstate the two-year Athens Tour Guide School run by the Ministry of Tourism (Ministerial Decision 13239/2017).

**The Higher Schools of Tourism Professions.**

At the higher vocational education level (level 5), two Tourism Vocational Schools are in operation, located in Rhodes and Crete, and are under the oversight of the Ministry of Tourism. These institutions have been functioning since 1956 and 1996, respectively (Mylonopoulos, 2016: 126-130). A distinctive characteristic of these schools is their classification as higher education (level 5 of the National Qualifications Framework), positioning them between secondary and higher education. Admission into these schools is determined by the examination process implemented by the Ministry of Education. In 2020, a modification was noted within the regulatory framework governing these schools, primarily affecting the duration of the academic program. To officially align with a four-year study period, essential for graduates to achieve maximum recognition of their qualifications, a new four-year curriculum was authorized through a ministerial decision (Ministerial Decision 20071/29-12-2020). However, this adjustment did not lead to any significant

changes in the selection process for teaching staff or the enhanced qualifications required from universities.

**Technological Education**

Prior to 2000, tourism-related education was organized within a well-structured framework that began at the secondary level and extended to technological education at a higher tertiary level, which was recognized as level 5 and entailed 7 semesters of study, though it did not reach a higher educational tier. In the year 2001, as previously indicated, an extra semester was added to the technological education program, increasing its length to four years (8 semesters). Consequently, the technological vocational institutions (TEI) were upgraded and acknowledged as equivalent to university-level institutions (level 6). During this period, the qualifications and experience required for educational staff were also updated to align with those of university instructors. Following nationalization, various local community demands for establishing a higher educational facility in their vicinity led to a swift expansion in the establishment of new TEI departments specializing in Tourism Business. This resulted in the formation of new branches under existing schools. For an extended duration, efforts were made to persuade Greek society of the equal standing between technological and university education.

Between 2001 and 2013, independent departments offering "Tourism Business Administration" were functional at seven Higher Technological Educational Institutions. However, the educational system experienced significant chronic issues during the 2013-2014 period, including inadequate staffing and a shortage of specialized teaching personnel, fragmentation of subjects and courses. Consequently, the seven Departments of Tourism Management accommodated 3,106 active students (as of 2012) and accepted 385 new students (2012-2013), yet only had 42 faculty members in the Teaching and Scientific Staff. Additionally, there were concerns regarding accommodation, spatial arrangements, and operational costs that frequently exceeded ten times those of similar departments located in Athens. Amid the economic downturn and pressure from European Union bodies to cut government expenditures, a comprehensive educational reform known as the "Athena" plan was implemented during 2013-2014, leading to the merging, dissolution, and renaming of departments alongside curriculum adjustments. The "Athena" plan sought to fundamentally reshape the national academic landscape while simultaneously contracting public higher education through a rapid "modernization" of its frameworks, targeting existing issues (Ministry of Education, Culture and Sports, 2013). Regarding tourism education, this reform resulted in the consolidation of the Departments of Tourism Business with other divisions from the School of Administration and Economics, such as Business Administration, Marketing, etc., all consolidated under a single Department of "Business Administration." Within this restructured department, various specializations emerged, providing options available from the initial semester of studies or in subsequent advanced semesters. Therefore, the Department of Tourism Management was assimilated as a specialization in

"Tourism and Hospitality Management" within the broader Department of Business Administration. The modifications served as the foundation for the gradual rise in admissions from 385 in the academic year 2012-2013 to 1,734 in 2020-2021. These alterations led to several challenges within the operational framework of the Departments offering tourism education. With the dissolution of a standalone Department of Tourism Management, which was replaced by a preliminary direction under the wider Department of Business Administration, faculty members emerged from various disciplines, frequently unrelated to tourism. Consequently, the newly established programs were expected to integrate diverse subjects, specialties, and expectations from both educators and students.

**University Education**

Following the abrupt "universityization" of all higher education institutions in 2017, other universities were also permitted to operate tourism departments. Initially, two new undergraduate departments focusing on Tourism Studies were established at the University of Piraeus (Department of Tourism Studies) and the University of the Aegean in Chios. Concurrently, the TEI of Athens and the AEI of Piraeus Technological Sector combined, forming a significantly larger institution known as the University of West Attica under Law 4521/2018. Within this new university, a Department of Tourism Management emerged from merging the previously separate programs of Tourism Business Management and Hospitality Business Management from the older institutions.

**Conclusions**

Tourism education in Greece has undergone significant structural changes, evolving from vocational and technological institutes to university-level programs. The system includes multiple layers of public and private institutions, overseen primarily by the Ministry of Education and Religious Affairs, with specialized schools such as the School of Guides and Higher Schools of Tourism Professions. Reforms over the past two decades have merged and reclassified tourism studies within broader academic departments, updated curricula, and increased student admissions, yet have also led to challenges such as faculty shortages and diluted specialization. The landscape continues to adapt, reflecting ongoing regulatory and institutional reforms.

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# TOURISM EDUCATION IN THE FOCUS OF SUSTAINABILITY: COMMITMENTS, INFLUENCES AND PERSPECTIVES

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***Abstract***

*The traditional perception of tourism as social phenomenon places it in a special position in relation to the pillars of sustainability, therefore expectations for it are high. In an attempt to underline connections and dependencies between tourism as industry, tourism business, tourists and local communities, this paper focuses on tourism education as a focal point of their common interests. Although at first glance such a position may seem indefensible, in fact, there are practices showing how correctly identified educational needs, promote development, and when linked to the SDGs, they also contribute to sustainable growth. Emphasizing the connection between the offered educational programs in tourism at the South-West University "Neofit Rilski" in the frame of reference of sustainability awareness as a research topic, specific results are presented regarding the innovative educational methods used, besides the attitudes of the tourism business from the Rila-Pirin region, using analysis methods such as case studies and a survey*

***Keywords:*** *education; sustainability; competence-based approach*

***JEL Codes:*** *A13, I25, J24*

## Introduction

The traditional perception of tourism as social phenomenon places it in a special position in relation to the three pillars of sustainability, which is why the expectations towards it, as a key economic sector, are high. From a social perspective, tourism contributes to solving significant problems in various fields. For example, tourism helps to overcome social and demographic challenges such as unemployment and women's employment or poverty, while also encouraging socially oriented development trough regions. It also stimulates social and cultural exchange, taking place through the contact between tourists and host communities. Moreover, tourism indirectly contributes to the development of social infrastructure, leading to the accumulation of additional funds in local municipal budgets oriented towards tourism development.

In an attempt to clarify the links and interdependencies between tourism as an industry, entrepreneurial initiative and business, tourists, and local communities, this study examines the role and significance of tourism education as a focal point of their shared interests. Although, at first glance, such a position may seem unconvincing, examples are found of how correctly identified educational needs of the sector and the local community promote the overall development of a given area. When these needs are tied to the challenges

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facing local communities, they also contribute to sustainable growth. In this aspect, the research focuses on tourism educational programs offered at South-West University "Neofit Rilski" within tourism industry. The subject of the study is its alignment - as course profiles and methodological support - with the challenges engaging the attention of local communities and the tourism business in South-Western region of Bulgaria. Based on existing practices, research on the industry's expectancies, along with presentation of the current programs' curriculum, sustainability perquisites are outlined through a competence-based approach.

**Conceptual Framework**

Among the global leaders and drivers of policies in the field of sustainable development and education, together with institutional initiatives promoting sustainability in tourism education, UNESCO, UNDP, and UNWTO are recognized. Their framework documents highlight issues of strategies for institutional sustainability (UNWTO, 2018) and achieving synergies to support education for sustainable development and sustainable tourism (UNWTO, 2019; UNESCO, 2020). One of the latest publications on the topic is again by UNESCO (2025), encouraging partnerships between UNESCO sites and education for sustainable development, offering practical teaching ideas for educators.

The unifying element between these and other similar publications in the field of environmental protection is the emphasis on the need for actions related to the sustainable future of the planet to be focused on education as a tool for increasing responsibility in consumption behavior and ethics. Another key aspect is the importance of educating the population as a means for developing civic awareness, competence, and engagement of citizens—not only in everyday life but also in processes of making decisions related to cultural, political, economic, and ecological issues.

Returning to the issue of university-level tourism education (Tilbury, 1995), its conceptual and philosophical foundations must be emphasized. Sustainable development and tourism education intersect at the theoretical foundation of the definitions and principles of sustainable tourism, while placing educational theory within the context of sustainability. Simultaneously, in practical terms, they promote interdisciplinarity and systems thinking among learners. On this point, the contribution of Tribe should be highlighted - he published three important studies (Tribe, 2000, 2003, 2006), focusing on the design of tourism curricula and drawing attention to different pedagogical approaches, such as experiential learning, critical pedagogy, and problem-based learning, which foster competence-based education for sustainability (Tribe, 2006; Wals & Jickling, 2002).

Tourism education and training are not always considered prestigious. At the same time, the interest of potential trainees remains high, on the one hand due to the wide range of training, and on the other hand, due to the sustainability of the tourism industry, as well as the diverse employment opportunities that exist (Fidgeon, 2010; Kirov, 2017). Moreover, with the expansion of the tourism industry, the demand for educated professionals is

growing. These professionals need not only specialized knowledge in tour operations, travel agency activities, hospitality, and catering, but also expertise in sustainability (Boley, 2011).

Sustainability-oriented education, especially in tourism, should be a priority for the Bulgarian education system. The content at both secondary and higher education levels should focus on practical programs and best practices in relevant educational fields, based on the principles and goals of sustainable development. Furthermore, the introduction of complementary specialized education and training in sustainable development would suppose conditions for a broader and deeper understanding of issues related to nature, culture, and their protection within tourism and beyond. Such an orientation is closely tied to the prospects of environmental education, discussed by authors such as Harvey (1978), Disinger (1986), Blackmore (2007), Chawla (2008), Srbinovski et al. (2010), Kostova & Vladimirova (2011), Ivanova (2011), Bahchevanova-Georgieva (2014), Stankova & Kirilov (2010, 2019), and Mileva (2015). Amid the different perspectives, interpretations, and methodological foundations of education for sustainable development, the general aim remains to explain the complex interrelationships in the human–society–nature system and to integrate this knowledge into programs and content that build personal ecological literacy and responsibility.

**Knowledge, Skills, and Competences for Sustainability**

Tourism is a social phenomenon, whose social and cultural aspects manifest primarily in relation to its subjects - tourists and the local population that welcomes and serves them. Tourism as a phenomenon implies encounters between people from different places, which triggers certain transformations within the destination itself. It can be considered as bridge, connecting people, ideas, ideologies, and cultures, both within one country and between countries. This brings benefits but also often negative impacts on the local nature, culture, and community.

Tourism development is closely tied to the economic, socio-cultural, and environmental interrelations within any territory recognized as a tourist destination. The pace at which this development occurs is among the key factors determining the effects of these economic, socio-cultural, and environmental impacts (Rátz & Puczkó, 2002). According to Sharpley & Telfer (2002), the speed of tourism development influences how many residents have time to adapt to the changes and how this process unfolds. If development is too rapid, locals may not be able to adjust, leading to cultural conflicts with negative effects. Rapid development may prevent the local community from meeting tourism demand, as it requires outside investors and additional workforce. In the long term, such rapid growth may harm local interests. As dependence on tourism increases, the destination becomes vulnerable to negative changes in demand. If the tourism industry faces a crisis, this can have devastating consequences for a society heavily reliant on it. In this respect, the importance and role of specialized education and training linked to sustainability come to the forefront.

Accepting the challenge of building an *"inclusive, skill-based curriculum that values lifelong learning and mastery of essential knowledge and skills"* (The beginner's guide to competency-based education, n.d.), efforts to improve the quality of tourism education at South-West University focus on incorporating a competence-based approach into individual courses. Its implementation depends both on understanding the specifics of its application and on the role of the competences being targeted. The first aspect reflects the view of the approach as an "ideology" for solving a problem set in an educational context, revealing economic, socio-cultural, ecological, philosophical, psychological, and pedagogical specifics (Hutorskoy, 2003). The second aspect, specifying competences from the perspective of modern pedagogy, focuses on viewing them as a new type of educational objective. Within the education system, this is linked to understanding the economic, social, and personal significance of business activities (Rakhmonov, 2019).

Within the competence-based approach, focusing on the learning outcomes of individual courses also realizes the priorities of the Council of Europe's Recommendation (2018/C 189/01) on key competences for lifelong learning (n.a.). Specifically, in the context of the programs in Professional Field 3.9 Tourism at South-West University "Neofit Rilski," the development of key competences is encouraged through diverse learning approaches that integrate competence-based education. In fact, these align with the *Education for Sustainable Development* task of the Aurora Alliance of European Universities, where South-West University is an associate partner.

Taking the example of the "Sustainable Tourism" Bachelor program, the main orientation is towards the Sustainable Development Goals (SDG) which are integrated into the curriculum within specific courses, offered learning content and targeted competencies for students. Furthermore, it focuses on the collaboration and co-creation between AURORA partners. teacher training, course elaboration and implementation of the COIL (Collaborative Online International Learning) and Community Service-Learning (CLS) teaching.

Training duration the Bachelor's SUSTAINABLE TOURISM Program is 4 years or regular 8 semesters with 240 ECTS credits. Its curriculum is in line with the requirements of the labour market in Bulgaria, as its main goal is to meet the growing needs of staff in the field of sustainable development and responsible tourism. The educational content and training is focused mainly on the deployment of the concept of sustainable development and implementation of SDGs in tourism, which is achieved through the study of courses such as: Introduction to tourism, Sustainable tourism development and policy, Human Resource Management, Digital tools in sustainable development, Intercultural communication, Sustainable tourism and sustainable mobility, Entrepreneurship in tourism, Crisis management in tourism, Leisure and life quality, Corporate social responsibility, Foreign language, etc.

Students graduating in "SUSTAINABLE TOURISM" receive key competencies in the practical application of the concept of sustainable development and sustainable management in the field of tourism and in all international and state institutions, as well as

in the enterprises in the tourism industry wishing to apply this concept. The implementation of the competency-based approach in the educational process under the program is set as the use of various forms and methods of organization, which allow creating the necessary conditions for forming students' readiness for independent cognitive activity as suggested by Zeera and Symaniuk (2005). Among the variety of options, the two mentioned above - COIL and CLS - have been recognized as suitable for the formation of the necessary general cultural and professional competencies, self-determination, socialization, development of individuality and self-actualization. It is assumed that they ensure the quality of education by orienting training in accordance with the needs of modern society, taking into account both the community's need for prosperity based on its members, but also that of individuals to identify with and be useful to the community.

**Community-Oriented Learning**

Community-oriented learning conceptualized in the **Community Service-Learning (CSL)** approach is a structured educational experience that combines socially beneficial work with clear learning objectives, preparation, and reflection. In this definition, proposed by Jacoby and associates (1996), the knowledge, skills, and competences provided and acquired through different disciplines should support learners in identifying specific problems, in connecting what they have learned in lectures, and in adapting it to expressed or potential problems of a given community in a real context. Students engaged in community-oriented, service-learning are expected not only to provide direct public service, but also to learn about the context in which the service is provided, the link between the service and their academic coursework, and their role as citizens. By the end of the course, the outcome contributes to bringing students closer to the specifics of local issues, shaping educational impact and positively influencing their orientation within the social and economic environment.

Students acquire theoretical knowledge in classes however, they can work directly on real problems faced by the community, investigating existing challenges under real conditions. In this direction, opportunities are sought for students to step outside the classroom, becoming active participants in the learning process and developing civic knowledge and skills. Currently, this educational approach is applied in certain disciplines, but the goal is to incorporate it into most courses to achieve interactive communication between teachers, students, and communities in the “mastery of numerous competences and sub-competences, including specific theoretical knowledge, practical skills, and attitudes” (Stefanova, n.a.).

For example, the course *Geotourism,* with is an elective one, includes Community Service-Learning approach with a problem-based focus. It improves students’ understanding of the course content by offering opportunities to engage them directly with community activities, tourist organization/s, or institution/s with mission or goals that align with the academic outcomes of the course. In the various topics of the course, students participate in

tasks that assist environmentally committed groups of people in Blagoevgrad, where the South-West University is positioned, or assist the experts of Rila National Park in solving specific problems. They may prepare project proposals and/or participate in distinctive activities to better understand the types of community efforts needed to improve sustainability in the real world. A particularly interesting and valuable detail is that such courses usually require students to volunteer in an organization or project to ensure that they are truly familiar with the "on-site" situation they are studying.

**Collaborative Online International Learning (COIL)** represents another strongly competence-oriented approach. It focuses on teamwork and collaboration through the use of virtual tools and remote work for international, student-centered learning, tailored to student needs while fostering intercultural experiences. Through COIL, students develop soft skills such as communication, cultural awareness and sensitivity, teamwork, problem-solving, conflict management, collaborative learning, empathy, and openness to diverse perspectives.

Due to the specificity of preparing specialized COIL courses, such are subject to further elaboration. For the 2025/2026 academic year, at least one COIL course is planned. Tentatively titled *Certification and Traceability*, it is the result of collaboration of a specialized COIL training organized by Universitat Rovira i Virgili – in fulfillment of the commitments of South-West University as an associated partner in the Aurora Alliance of European Universities (Aurora, 2025).

**Tourism Sector's Attitudes and Expectations Towards Employee Qualification in the Context of Sustainability**

When discussing the role and position of the tourism business in relation to tourism education, these must be placed in the context of the so-called *twin transition*—towards green policies and digital transformation. The central question here is which challenge is most urgent for ensuring workforce qualification and providing continuous requalification. Answers may vary depending on the economic background, though some common patterns can be identified. Observations indicate that one of the most persistent challenges is the mismatch between educational programs and the real needs of the tourism industry. This issue is acknowledged by higher education institutions, which are working towards overcoming it.

To illustrate specific manifestations of this problem, results are presented from a survey conducted within project RP-B1/25 *Exploring Opportunities for Professional Realization of Students Graduating from the Faculty of Economics at SWU* (https://docs.google.com/forms/d/1zl8SpdhdG-gYFHPz8_ozVcJatq0gZkkgl1fyJw6L5f4/). The results largely confirm the observations above, highlighting the lack of practical skills among students as the main challenge. It should be clarified that the survey was conducted in March 2025 and is based on responses from 160 companies, 83.1% of which are located in the Southwestern region of Bulgaria, Blagoevgrad district. The largest share of respondents (26.3%) are tourism companies, primarily micro and small enterprises.

Respondents indicated that they hire students (Question 5 – *Do you currently employ or have you employed students in the past 12 months?*). For 20.6% of companies, this is an established practice, while 34.4% hire students only when necessary. Notably, 28.7% reported plans to start offering students work opportunities. This orientation is logical, given the answers to Question 8 – *Do you encounter challenges when working with students?* and Question 11 – *What are the main shortcomings in student preparation according to you?* Nearly 45% of companies identified the lack of practical experience as the main challenge and shortcoming. Two additional insights from Question 8 reveal that 26.9% of companies find that students lack soft skills, while 27.5% see low work commitment. At the same time, almost a quarter (25.6%) believe students are well-prepared and motivated.

Question 10 – *How do you assess the preparation of the students you employ?* – provides context to these responses: over 53% of companies rate working students positively, noting that with minimal additional training they adapt successfully to specific work conditions.

What is most relevant here, however, are the expectations of employers (tourism businesses) towards education. These are reflected in Question 9 – *What skills and competences are most important when hiring students in your company?* With the option to select more than one answer, 68.1% emphasized teamwork skills as particularly important. Communication skills were valued by 56.9%, while adaptability and initiative were cited as key by 51.2%. Between 40% and 30% of responses highlighted theoretical knowledge in the specialty, language competences, critical thinking, and digital skills.

In Question 12 – *Would you collaborate with the university to improve student preparation?* – 16.9% of respondents reported existing cooperation, while an encouraging 47.5% expressed willingness to establish such collaboration.

The results do not directly show business attitudes and commitments towards sustainable development, even though this issue is highly significant for their economic performance. Tourism enterprises, in particular, face immense competitive pressure due to productivity challenges, the fragmented nature of the industry (dominated by small and medium-sized enterprises), and its labor-intensive character. These contextual specifics should be part of discussions between tourism enterprises and educational institutions, while also involving local communities as key supporting agents. In this sense, tourism education and training must be linked to community interests, problems, and challenges. This approach both helps rationalize business operations and adds value to educational offerings by making them adaptive and oriented toward real socio-economic conditions.

**Conclusion**

Placing tourism education at the focus of sustainability means that, in perspective, efforts must be directed towards identifying and implementing the goals of sustainable development. In this regard, efforts should be directed not only to educational programs and their improvement, but also to raising the prestige and increasing the social status of the

profession and its attractiveness. And this can be achieved in the conditions of partnership between the teachers, the students and the university. Teachers are a key figure in the educational process and there is no other alternative to investing in them, therefore their improvement as specialists is mandatory. This is also an aspect of the process of sustainable development, which can be linked to the acquisition of complex skills in the fullness of the application of the competency approach, innovative teaching (in the field of tourism), for the upgrading of multicultural competencies and skills for working in a dynamic and digitalized environment, beside the expansion of practical training, broad-spectrum and interdisciplinary training. Students, forming sustainable competencies are raised to a higher educational level. As for the university, through community-based or collaborative learning, quality of education can be increased, student creativity can be encouraged, and communities can be helped through its proactive engagement, considering its importance as main actor in the regional social and economic development.

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# TOURISM COOPERATIVES: BENEFITS, CHALLENGES, AND GOOD PRACTICES FROM A NARRATIVE LITERATURE REVIEW

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***Abstract***

*Tourism cooperatives have become increasingly relevant as mechanisms for community empowerment, sustainable development, and economic diversification, particularly in rural and disadvantaged regions. While case studies from different parts of the world highlight their role in linking agriculture, culture, and tourism, research on this topic remains fragmented. This paper presents a narrative literature review of cooperatives in tourism, based on sources identified through Scopus, Web of Science, and Google Scholar using the keywords "cooperatives" and "tourism." The review synthesizes recurring themes in the literature, including governance and community participation, social innovation and sustainability, gender and equity, diversification and market adaptation, and destination promotion. The analysis highlights a wide range of benefits, such as income redistribution, empowerment of marginalized groups, heritage preservation, and contributions to ecological and social sustainability. At the same time, it points to persistent challenges, including governance complexity, limited professionalization, financial fragility, and uneven inclusivity. From these insights, the review identifies the characteristics of good practices, such as transparent governance, integration of local identity, adaptability through diversification and digital tools, cross-border collaboration, and the balancing of economic and social objectives. Finally, the paper outlines key research gaps, emphasizing the need for comparative and longitudinal studies, robust measurement frameworks, and deeper examination of digital transformation and inclusivity. By consolidating scattered evidence, the review provides a clearer picture of how cooperatives function as both economic and social actors in tourism, and how they can contribute to more resilient and equitable tourism* development.

***Keywords:*** *Cooperatives; Tourism; Rural development; Social innovation; Sustainable tourism; Narrative literature review*

***JEL codes****: L83, R11*

## Introduction

Tourism cooperatives have emerged as important organizational forms at the intersection of local development, community empowerment, and sustainable tourism. They represent collective responses to the structural challenges facing rural areas and small producers, including limited access to markets, declining agricultural incomes, and demographic pressures. By pooling resources and sharing risks, cooperatives provide mechanisms through which communities can participate more actively in tourism, ensuring that benefits are distributed more equitably and that local voices are heard in decision-

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making processes. Their relevance is particularly evident in regions where tourism development is otherwise fragmented, underfunded, or dependent on external actors.

Over the past three decades, scholarly interest in cooperatives and tourism has expanded, reflecting both the diversity of cooperative models and the multiple ways in which they intersect with tourism practices. Early contributions emphasized the importance of cooperative planning and governance for integrative tourism development, particularly in developing and transitional economies (Timothy, 1998). More recent studies have highlighted cooperatives as vehicles for social innovation, local empowerment, and sustainable diversification, ranging from women's agrotourism cooperatives in Greece (Gidarakou, Xenou, & Theofilidou, 2000; Tsiaras, Triantafillidou, & Katsanika, 2016) to wine cooperatives in Portugal that have successfully expanded into wine tourism (Almeida, Massuça, Fialho, & Dionisio, 2022). Cooperatives have also been studied in conservation contexts, where multi-stakeholder models link tourism with ecological protection, as in the Namibian black rhinoceros case (Muntifering et al., 2020), and in accessible tourism, where cooperative marketing strategies are used to promote inclusion in cross-border destinations (Kourkouridis & Salepaki, 2023).

Despite this growing body of work, research on cooperatives in tourism remains scattered across disciplines, case studies, and thematic concerns. Studies differ widely in their objectives and conceptual frameworks, which complicates efforts to build cumulative knowledge. Some focus primarily on economic outcomes, while others emphasize governance, gender, or conservation, often without integrating these perspectives. This fragmentation makes it difficult to assess the broader contributions of cooperatives to tourism development or to identify conditions that determine success or failure.

In response, this paper undertakes a narrative literature review of tourism cooperatives. The objective is not to provide an exhaustive account of all available studies but to synthesize recurring themes and insights across contexts. The review identifies the main areas of scholarly attention, examines the benefits and challenges highlighted in the literature, and distils the characteristics of good practices. By doing so, it aims to provide a clearer understanding of the ways in which cooperatives contribute to tourism, while also outlining the limitations of existing research and the directions in which further study is needed.

**Research Design**

This paper adopts the approach of a narrative literature review in order to synthesize existing research on the intersection of cooperatives and tourism. The review does not aim to provide an exhaustive mapping of all publications in the field but rather to identify recurring themes, benefits, challenges, and good practices, while situating them within broader debates on sustainable tourism and community development. Narrative reviews are particularly suited to fields where scholarship is fragmented across disciplines and

geographies, allowing for the integration of diverse perspectives and case study evidence (Snyder, 2019).

The sources were identified through systematic searches conducted in *Scopus*, *Web of Science (WoS)*, and *Google Scholar*, using the keywords "cooperatives" and "tourism" in various combinations. Only peer-reviewed journal articles and academic case studies were included, ensuring a focus on scholarly contributions with methodological rigor. Grey literature, conference proceedings, and non-academic reports were excluded.

The selected studies span different regions, including Europe, Latin America, Africa, and Asia, reflecting the global relevance of cooperative models in tourism. They also represent a range of methodological approaches, from qualitative case studies and ethnographic accounts to quantitative assessments of cooperative performance and SWOT analyses of digital strategies. By drawing on this diversity, the review provides a multidimensional picture of how cooperatives contribute to tourism governance, community empowerment, and sustainable development.

The analysis proceeded by coding the literature around emergent themes such as governance, social innovation, gender and equity, economic diversification, accessibility, and destination promotion. These categories were then refined to identify overarching benefits and challenges, as well as the characteristics of good practices. The review concludes with an outline of research gaps, pointing to areas where further empirical and theoretical development is needed.

## Results and discussion

### *Main Themes in Cooperative Tourism Literature*

The literature on cooperatives in tourism spans diverse geographies, organizational models, and development contexts. While early studies emphasized the need for integrative planning and stakeholder collaboration, more recent research highlights cooperatives as drivers of social innovation, gender empowerment, diversification, and sustainability. The following section synthesizes the main themes that emerge across case studies and theoretical contributions, showing how cooperatives have evolved from small-scale community initiatives to significant actors in tourism governance, destination promotion, and digital transformation.

### 1. Governance, Cooperation, and Community Empowerment

One of the strongest themes is the role of cooperatives in governance and community empowerment. Cooperative planning is highlighted as a necessity for sustainable tourism development, requiring coordination between government levels, agencies, and the private sector (Timothy, 1998). Beyond governance, cooperatives are central to community-based tourism initiatives, where they serve as vehicles for participation, equitable benefit-sharing, and the redistribution of tourism income (Amran & Hamzah, 2013). This stream of research

frames cooperatives not just as business entities, but as institutions that enhance local agency, reduce fragmentation, and strengthen collective capacity to engage in tourism markets.

**2. Social Innovation and Sustainability**

Cooperatives frequently emerge in the literature as sites of social innovation. They provide platforms for experimenting with new governance models, addressing social exclusion, and linking tourism to broader sustainability goals. The Brazilian case of a tourism cooperative illustrates how cooperative structures can generate territorially embedded solutions under conditions of poverty and inequality (Quandt et al., 2017). Similarly, conservation-oriented cooperatives in Namibia demonstrate how wildlife tourism can be harnessed for ecological preservation when combined with inclusive decision-making (Muntifering et al., 2020). Cooperatives are thus portrayed as laboratories for sustainable development, capable of balancing ecological, economic, and social dimensions.

**3. Gender, Inclusion, and Equity**

Another prominent theme concerns the empowerment of marginalized groups, particularly women. In Greece, women's agro-tourism cooperatives have created new income opportunities, enhanced female visibility in local economies, and helped preserve cultural traditions (Gidarakou, Xenou, & Theofilidou, 2000; Tsiaras, Triantafillidou, & Katsanika, 2016). These initiatives demonstrate how cooperatives can act as vehicles for social equity and empowerment. The literature also extends this discussion to accessibility, where cooperative marketing initiatives in cross-border regions are seen as tools for creating inclusive tourism offers for persons with disabilities and seniors (Kourkouridis & Salepaki, 2023). Together, these works position cooperatives as drivers of more inclusive and equitable tourism systems.

**4. Economic Diversification and Market Adaptation**

Many studies highlight how cooperatives support economic diversification, especially in agricultural regions. Wine cooperatives in Portugal illustrate this trend, where diversification into wine tourism has allowed them to preserve heritage, strengthen branding, and secure member welfare while adapting to competitive markets (Almeida, Massuça, Fialho, & Dionisio, 2022). Similar cases show how cooperatives integrate tourism with local production and gastronomy, thereby linking economic competitiveness with territorial identity. Digital transformation and e-commerce also fall under this theme: while cooperatives recognize the potential of online platforms for promotion and market access, challenges remain around limited member engagement and marketing capabilities (Li, 2022; Calero-Chérres, Herrera-Chávez, Moposita Vásquez, & Zurita Gallegos, 2024).

### 5. Place-Based Development and Destination Promotion

Finally, cooperatives are increasingly seen as destination actors, not only as producers. Studies in Serbia show how agricultural cooperatives can assume roles such as initiators, coordinators, and promoters of rural tourism development (Dejanović & Lukić Nikolić, 2024). Similarly, in Ecuador, the COOPINCOSAN cooperative was found to integrate community tourism into its sales strategies, linking local heritage and cultural assets to cooperative marketing (Calero-Chérres et al., 2024). This theme emphasizes the capacity of cooperatives to mobilize resources, coordinate stakeholders, and brand rural destinations, reinforcing their identity and visibility on tourism maps.

*Balancing Benefits and Challenges in Cooperative Tourism Development*

Cooperatives in tourism have been widely recognized for their capacity to combine social, economic, and cultural objectives, thereby creating benefits that go beyond individual entrepreneurship. Their advantages are evident in diverse contexts, ranging from rural women's agrotourism cooperatives in Greece, to wine cooperatives in Portugal, to community-based models in Malaysia and Namibia. A primary benefit lies in their ability to redistribute income and opportunities more equitably across communities. By pooling resources and creating shared ownership structures, cooperatives strengthen social cohesion and empower members who might otherwise remain excluded from mainstream tourism development (Amran & Hamzah, 2013; Quandt et al., 2017). In this sense, they often act as vehicles for social innovation, stimulating new practices in local governance, training, and marketing that can revitalize disadvantaged areas (Quandt et al., 2017; Tsiaras et al., 2016). They also support diversification strategies, as seen in the case of wine cooperatives in Portugal that integrated wine tourism to preserve cultural heritage, improve branding, and enhance financial sustainability for their members (Almeida et al., 2022). Similarly, in Greece, women's cooperatives have provided opportunities for economic participation while simultaneously valorizing local gastronomy and crafts, making women visible actors in rural development (Koutsou et al., 2009; Gidarakou et al., 2000).

Another important contribution is the role cooperatives play in promoting sustainability and conservation. By embedding tourism within locally governed structures, they align the interests of communities with ecological and cultural protection. The Namibian black rhinoceros conservation cooperative, for instance, demonstrated how participatory frameworks and transparent decision-making could mitigate conflicts and enhance conservation outcomes while generating tourism revenue (Muntifering et al., 2020). In Malaysia, the cooperative model helped transform a homestay program into a broader community tourism enterprise that improved livelihoods while supporting forest conservation (Amran & Hamzah, 2013). Moreover, cooperatives have proven valuable in accessible tourism, where cross-border collaboration between Greece and North Macedonia demonstrated how shared marketing could enhance inclusivity and create competitive advantages (Kourkouridis & Salepaki, 2023).

Despite these achievements, significant challenges persist. Many cooperatives face structural and managerial difficulties, often rooted in limited professionalization and resource scarcity. A recurrent issue is the overreliance on voluntary labour and the lack of succession planning, which threatens the continuity of cooperative initiatives (Gidarakou et al., 2000). Financial sustainability is also problematic, as insufficient marketing skills and fragmented sales channels can limit competitiveness and reduce the visibility of cooperative products and services (Calero-Chérres et al., 2024). Even in cases where cooperatives manage to innovate, such as with the introduction of green marketing strategies or the use of digital tools, the uptake across members is uneven, and the required infrastructure may be lacking (Li, 2022; Tsiaras et al., 2016). Governance challenges further complicate matters, with difficulties in balancing diverse member interests, avoiding elite capture, and ensuring transparent decision-making. These issues are particularly evident in contexts where institutional support is weak or inconsistent, such as in developing destinations where cooperative tourism planning is constrained by political and administrative fragmentation (Timothy, 1998).

Moreover, while cooperatives frequently emphasize inclusivity, this ambition is not always fully realized. Women's cooperatives, though empowering in many respects, often struggle to provide stable incomes and attract younger generations, thereby limiting their long-term viability (Koutsou et al., 2009; Gidarakou et al., 2000). Similarly, in accessible tourism, attitudinal barriers and insufficient staff training remain significant obstacles, underscoring the need for sustained efforts in capacity building and cultural change (Kourkouridis & Salepaki, 2023). Conservation-oriented cooperatives face their own risks, particularly when tourism pressures displace wildlife or when decisions are dominated by external actors without sufficient local involvement (Muntifering et al., 2020).

In sum, cooperative tourism offers multiple benefits – empowerment, equity, sustainability, innovation, and destination promotion – but these are often counterbalanced by systemic challenges of governance, financing, professionalization, and inclusivity. The literature thus portrays cooperatives as both promising and fragile institutions: they provide models of collective entrepreneurship that can transform rural and marginalized regions, yet their effectiveness depends heavily on supportive policies, continuous training, market integration, and robust governance structures.

The literature on cooperative tourism highlights several characteristics that distinguish successful initiatives from those that remain fragile. A recurring element is the establishment of strong governance and inclusive participation. Well-functioning cooperatives are those that create transparent decision-making structures, ensure fair benefit distribution, and foster trust among members. In Namibia, the black rhinoceros conservation cooperative demonstrated that inclusive arenas for debate and evidence-based management practices were essential for reconciling ecological integrity with tourism development, producing a model that has been widely recognized for its transferability (Muntifering et al., 2020). Likewise, the Vidigueira–Cuba–Alvito wine cooperative in Portugal illustrates how moving

from an amateur, volunteer-based system to a professionalized governance model enabled innovation and diversification into wine tourism (Almeida, Massuça, Fialho, & Dionisio, 2022).

Another defining feature of good practices is the integration of local heritage and identity into market strategies. Cooperatives that succeed in tourism often leverage authenticity—through gastronomy, crafts, or traditional agricultural practices—as a basis for differentiation. Women's agrotourism cooperatives in Greece exemplify this approach by valorizing traditional recipes and crafts, while simultaneously adopting green marketing strategies that align with consumer demand for sustainable and ethical products (Tsiaras, Triantafillidou, & Katsanika, 2016). This dual orientation allows them to preserve cultural heritage while enhancing their market position.

Adaptability through diversification and innovation is also a hallmark of successful cooperatives. Those that branch into tourism often combine agricultural production with complementary services such as accommodation, guided tours, or cultural programming. The COOPINCOSAN cooperative in Ecuador demonstrates how aligning sales policies with community tourism strategies strengthened its market presence while advancing local social development (Calero-Chérres, Herrera-Chávez, Moposita Vásquez, & Zurita Gallegos, 2024). In the digital era, adaptability further extends to the uptake of e-commerce and big data, as shown by rural tourism cooperatives in China that have used digital marketing to broaden their market reach and improve competitiveness (Li, 2022).

Good practices are also associated with cooperative efforts that reach beyond the local scale, fostering partnerships at the regional and cross-border levels. In the Greece–North Macedonia border region, cooperative marketing initiatives have enhanced inclusivity by promoting accessibility for seniors and persons with disabilities, while also strengthening the overall competitiveness of peripheral destinations (Kourkouridis & Salepaki, 2023). Similarly, in Serbia, the Azanja agricultural cooperative assumed roles as initiator, coordinator, and promoter of rural tourism, thereby positioning itself as a central actor in destination governance and place branding (Dejanović & Lukić Nikolić, 2024).

Finally, effective cooperative practices balance economic goals with broader social and environmental missions. Rather than prioritizing profitability alone, successful cooperatives integrate fair returns for members with commitments to sustainability, cultural continuity, and community well-being. This integrative orientation enables cooperatives to act as laboratories of sustainable development, combining innovation, equity, and heritage preservation with entrepreneurial vitality.

*Research Gaps*

Although the literature provides valuable insights into the roles, benefits, and challenges of cooperatives in tourism, several research gaps remain. Much of the existing work is based on single case studies or descriptive accounts, which limits opportunities for generalization. Comparative and longitudinal studies are still scarce, making it difficult to

assess how cooperative models evolve across contexts or sustain outcomes over time (Timothy, 1998; Quandt et al., 2017). Another gap lies in the measurement of non-economic impacts: while empowerment, social cohesion, and conservation are often cited as benefits, common frameworks and metrics for evaluating these dimensions are lacking (Muntifering et al., 2020). Gender-focused studies highlight the potential of women's cooperatives, yet they also reveal persistent issues of financial sustainability, intergenerational renewal, and limited market reach that require deeper exploration (Gidarakou, Xenou, & Theofilidou, 2000; Tsiaras, Triantafillidou, & Katsanika, 2016). Similarly, accessible tourism remains underexplored, with limited empirical evidence on how cooperative marketing strategies impact participation among persons with disabilities or older travelers (Kourkouridis & Salepaki, 2023). Finally, although digital transformation is increasingly recognized as crucial, little is known about the conditions under which cooperatives successfully adopt e-commerce, data-driven promotion, and digital branding tools, or about the economic returns of such innovations (Li, 2022). Addressing these gaps would contribute to a more comprehensive understanding of how cooperatives can function as resilient, inclusive, and sustainable actors in tourism development.

## Conclusion

This review has examined the growing body of literature on cooperatives in tourism, synthesizing evidence across regions and thematic areas. The analysis confirms that cooperatives play a distinctive role in linking tourism with community development, social innovation, and sustainability. They provide mechanisms for pooling resources, redistributing income, and amplifying local voices, while also serving as custodians of cultural heritage and, in some cases, ecological conservation. Across contexts, they have been shown to empower marginalized groups—particularly women—enhance inclusivity through accessible tourism initiatives, and support economic diversification in rural areas through activities such as wine tourism and community-based agritourism.

At the same time, the review highlights persistent challenges. Many cooperatives struggle with governance complexity, financial fragility, and limited professionalization, which undermine their long-term sustainability. Inclusivity, although often a stated goal, is not always fully achieved, with barriers persisting for younger generations, women, and persons with disabilities. Moreover, the uptake of digital tools and e-commerce remains uneven, despite their growing importance for competitiveness and market visibility. These challenges demonstrate that while cooperatives have considerable potential, they are not immune to structural constraints and require supportive policies, capacity building, and sustained investment.

The identification of good practices provides important lessons for both researchers and practitioners. Transparent governance, integration of local identity into tourism offers, adaptability through diversification and digital tools, cross-border collaboration, and a balanced pursuit of economic and social objectives all emerge as critical factors for success.

These elements point to cooperatives not merely as service providers but as laboratories of sustainable development, capable of experimenting with new models that combine entrepreneurship with equity and resilience.

Finally, the review underscores the need for further research. Much of the literature remains fragmented and case-specific, limiting broader generalizations. Comparative and longitudinal studies, stronger evaluation frameworks for non-economic impacts, and deeper investigation into digital transformation and inclusivity are all needed to advance understanding in this field. Addressing these gaps will not only enrich academic debate but also inform policy and practice, ensuring that cooperatives can realize their potential as engines of more equitable, sustainable, and community-centred tourism development.

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# CROSS-SECTOR COLLABORATION FOR SUSTAINABLE WINE TOURISM IN THE PETRICH AND SANDANSKI REGION, SOUTHWESTERN BULGARIA

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***Abstract***

*This paper explores the current state of cross-sector collaboration in the context of wine and culinary tourism in the Petrich and Sandanski region of Southwestern Bulgaria. Situated in a culturally rich and agriculturally productive area, the region provides a valuable case for examining the interaction between key local stakeholders—winemakers, food producers, tour operators, and public institutions. The study is based on desk research and secondary data sources, including policy documents, regional development plans, promotional materials, and online content. Through this data, existing initiatives and forms of cooperation are identified and systematized. The findings reveal a variety of partnership models that contribute to the development of a shared regional identity, the promotion of local products, and the enhancement of the area's tourism appeal. At the same time, the analysis highlights the need for more structured coordination mechanisms and broader stakeholder engagement. The study contributes to the broader discourse on rural sustainable development by demonstrating the potential of cross-sector collaboration to diversify tourism offerings and valorize cultural heritage.*

**Keywords:** *wine tourism; wineries, innovation; Bulgaria; cross-sector collaboration*

**JEL Codes:** *L83, R11, L66*

## Introduction

Cross-sector collaboration has become a key driver for the growth and competitiveness of tourism destinations. One of the most emblematic examples of this is wine tourism, which naturally lends itself to synergies with other sectors—particularly culinary tourism—through the creation of integrated visitor experiences. These two sectors share a focus on sensory, emotional, and cultural immersion, offering experiences that engage multiple senses and create lasting impressions. One of the strongest assets of wine and culinary tourism lies in their ability to generate "gastronomic empathy," where the visitor develops a deep connection with the place, its history, and the people behind the product.

In this context, the combination of wine and culinary tourism enhances the overall visitor experience and strengthens the destination's identity. This synergy is of particular importance for the competitiveness of the Petrich–Sandanski region and its positioning on the national and international tourism map. As global tourism trends evolve, wineries are

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increasingly required to adopt innovative collaboration strategies to enrich visitor experiences, diversify their offerings, and promote sustainability.

Although wine tourism is traditionally well-developed in the region and has become a significant driver of rural development and economic growth (Alonso & Bressan, 2014), culinary tourism—especially in its authentic and locally rooted forms—remains underrepresented. Existing studies have explored different aspects of innovation in wine and culinary tourism, including the creation of complementary products that mutually enhance the overall experience. Much of the collaboration between wineries, municipalities, and NGOs aims to promote this sector and solidify its role as a regional priority.

Against this backdrop, wineries are increasingly expected to collaborate with stakeholders from other sectors in order to remain competitive and responsive to changing visitor preferences. As wine tourism continues to evolve as a key niche within the broader tourism industry, so too must the models of cooperation that support it.

This study is guided by the following research question: **What types of cross-sector collaboration between wineries and actors from other sectors, NGOs, and public institutions exist in the Melnik region, and how sustainable are these partnerships?** The research is based on publicly available data from websites and media sources. By addressing this question, the study aims to generate insights that contribute both to academic understanding and to practical strategies for enhancing wine tourism in the region.

## Literature review

### *The Role of Local Governance in Fostering Cross-Sector Collaboration*

Cross-sector collaboration has emerged as a key mechanism for enhancing the sustainability and competitiveness of rural tourism destinations. One of the primary drivers of such collaboration is the role of local governance. Rather than relying solely on top-down initiatives, local authorities are increasingly expected to act as facilitators—creating enabling environments where diverse stakeholders can work together to pursue shared development goals. As Guzal-Dec (2018) emphasizes, this process involves coordination, negotiation, and partnership-building among public, private, and civil society actors, rather than unilateral executive action.

### *International Models of Cross-Sector Collaboration in Tourism*

Various models of cross-sector collaboration have been developed and tested across different geographical contexts. Andersson et al. (2017), for example, developed a synergy model linking agriculture, hospitality, and tourism sectors in Scandinavian countries. Similar approaches have been adapted successfully in other parts of the world. In China, community-based tourism (CBT) has proven effective in underdeveloped rural areas near World Heritage sites, by mobilizing local assets and fostering local ownership (Qian et al., 2016; Qian et al., 2017). In Senegal, cross-sector linkages between agriculture and tourism have been analyzed

using the Structural Path Analysis (SPA) approach, which helps identify bottlenecks and opportunities within territorial value chains (Tchouamou Njoya & Nikitas, 2020).

*Wine Tourism as a Driver of Rural Development*

Wine tourism is increasingly recognized as a strategic tool for rural development. In regions where viticulture is a traditional economic activity, tourism can support its preservation while contributing to broader goals such as economic diversification and environmental sustainability. According to Lakner et al. (2018), small and medium-sized wineries play a central role in sustainable wine tourism and have a vested interest in maintaining high-quality natural and built environments. These actors are also more likely to engage in collaborative partnerships when supported by appropriate governance frameworks and incentives.

*Social Capital, Networks, and Trust*

The success of cross-sector partnerships depends not only on institutional arrangements but also on social capital—particularly trust, mutual understanding, and shared norms. Inkpen and Tsang (2005) and Tinsley and Lynch (2001) emphasize the importance of trust for effective cooperation and knowledge exchange within networks. Novelli et al. (2006) further argue that trust is fundamental for firms to commit to shared long-term goals and co-create value through joint use of resources. Community involvement is also a critical success factor. As noted in the literature, the most successful tourism projects are those where local residents are actively involved in planning and implementation, contributing to the mitigation of negative tourism impacts and reinforcing local ownership.

*Clusters and Integrated Rural Tourism*

The development of tourism clusters—geographically proximate groupings of interlinked businesses and institutions—has received considerable attention as a means to foster innovation and competitiveness. Michael (2003) introduces the concept of "diagonal clustering" to describe collaborative arrangements between actors from different sectors operating within the same region. Such collaborations generate value beyond the boundaries of single sectors and contribute to the emergence of specialized regional products. Lenaoa and Saarinen (2015) describe this process in the context of integrated rural tourism, which encompasses economic, social, cultural, and environmental development dimensions. Petrou et al. (2007) also emphasize the strategic commercialization of place-based resources through collaboration between local and external actors.

**Regional Context and Sectoral Dynamics**

The development of wine tourism is of strategic importance for enhancing the competitiveness of the Petrich–Sandanski region and strengthening its visibility on both the

national and international tourism map. In response to evolving global tourism trends, wineries are increasingly required to adopt innovative strategies to enrich visitor experiences, diversify their offerings, and embrace sustainable practices. Despite the region's natural and cultural advantages, culinary tourism—particularly in its authentic and locally distinctive forms—remains significantly underdeveloped.

Given the profile of wine and culinary tourists, who typically belong to higher-spending visitor segments, the sector has begun to place greater emphasis on stimulating taste and tactility, with a focus on enhancing the complexity of food and wine pairings, textures, and multisensory experiences.

In the past decade, wine tourism has emerged as one of the fastest-growing segments of the Bulgarian tourism sector. This surge has contributed to renewed interest in viticulture as a form of agricultural production. According to reports submitted to the European Commission, approximately 6,000 decares of new vineyards have been planted in Bulgaria over the past ten years. However, only 10.2% of these vineyards are planted with indigenous Bulgarian grape varieties—a trend that raises concerns about the preservation of local viticultural heritage. The country's wine regions include two with Protected Geographical Indications (the Danubian Plain and the Upper Thracian Lowland) and several areas with Protected Designations of Origin (such as Melnik, Sungurlare, Asenovgrad, and Pomorie).

Among these, the **Struma Valley** stands out as a particularly dynamic region, where recent efforts have focused on developing integrated wine-cultural tourism packages. These initiatives involve partnerships between wineries, food producers, municipalities, local parishes, monasteries, museums, and archaeological sites, aiming to attract a broader and more diverse visitor base.

The section of the Struma Valley encompassing the Petrich–Sandanski area lies within a warm continental-Mediterranean climatic zone, making it highly favorable for agriculture. Over the past 70–80 years, climate change has significantly altered local farming priorities, shifting production towards Mediterranean crops such as olives, pomegranates, and figs. Nevertheless, viticulture has remained a constant in the region for over five centuries. While grape varieties have evolved due to both climatic shifts and human intervention, the enduring tradition of winemaking continues to shape the region's identity and development potential.

**Research Design**

This study employs content analysis of websites belonging to businesses, public administrations, NGOs, and governmental institutions in order to assess the current state of cross-sector collaboration in the tourism sector—particularly among wineries—in the Melnik region. The research is guided by the central question:

**What types of cross-sector collaboration are currently practiced by wineries in the Melnik region, as reflected in publicly available online information?**

The analysis focused on all wineries in the region that are open to tourists and maintain an active online presence. This approach enabled a comprehensive review of the available

digital content. Data collection was carried out in August 2025, when each website was examined to capture the most up-to-date information on the wineries' collaborative and innovative practices.

The content analysis was conducted using a predefined coding table that classified various forms of collaboration. The categories included:

- **Type of collaboration**: horizontal, vertical, or diagonal;
- **Form of collaboration**: informal, formal, project-based, or network/cluster-based;
- **Purpose of collaboration**: marketing, joint product development, logistics, training, cultural engagement, or advocacy/lobbying;
- **Duration**: one-time, seasonal, medium-term, or long-term (sustainable);
- **Stakeholders involved**: wineries, businesses, NGOs, local authorities, and others.

To ensure consistency and reliability, the coding process involved a detailed review of both textual and visual elements of each website. The websites of wineries, institutions, and NGOs were analyzed for the presence or absence of collaborative initiatives with actors from the broader tourism sector. The results were then quantitatively assessed to evaluate the frequency and relative importance of each type of collaboration.

## Results and Discussion

This section presents a summary and analysis of data gathered through the mapping of cross-sector collaboration initiatives in wine and culinary tourism in the Petrich and Sandanski region. The analysis focuses on several key dimensions: type and form of collaboration, primary objectives, participating actors, and duration. Table 1 provides a quantitative breakdown of the observed cases based on these categories.

*Table 1. Summary of Quantitative Results from the Analysis of Cross-Sector Collaboration in Wine Tourism in the Study Region*

| Dimension | Category | Number of Cases | Relative Share (%) |
|---|---|---|---|
| **Type of Collaboration** | Diagonal | 7 | 63.6% |
| | Horizontal | 3 | 27.3% |
| | Vertical | 2 | 18.2% |
| **Form of Collaboration** | Informal | 3 | 27.3% |
| | Formal | 3 | 27.3% |
| | Formal (association) | 1 | 9.1% |
| | Project-based | 4 | 36.4% |
| **Goals (multiple answers)** | Marketing | 8 | 72.7% |
| | Joint Product | 6 | 54.5% |
| | Culture | 8 | 72.7% |
| | Training | 3 | 27.3% |
| | Logistics | 2 | 18.2% |
| | Lobbying | 0 | 0% |
| **Duration** | Long-term (Sustainable) | 5 | 45.5% |
| | Medium-term | 2 | 18.2% |
| | One-time | 3 | 27.3% |
| | Seasonal | 1 | 9.1% |

*Type of Collaboration*

One of the key dimensions explored in this study was the **type of collaboration** between wineries and other local actors, including businesses, municipalities, and NGOs. The data show that the **majority of initiatives (63.6%) involve diagonal collaboration**, where actors from different sectors and levels of governance interact – for example, partnerships between wineries and cultural institutions, NGOs, or IT companies.

Notable examples include:

- **CAPTOUR** – A transnational initiative aiming to capitalize on the tourism potential of SMEs in cross-border regions, emphasizing their socio-economic role in rural development.
- **Culinary Trail** – A collaborative project involving NGOs, hotels, wineries, and local producers, focused on preserving culinary heritage and developing gastronomic tourism products. The project also includes the creation of a mobile app to map culinary and cycling routes in support of green mobility.
- **The Traveling Satirical Art Festival** – Hosted at Kordopulova House Winery in Melnik, this initiative uses digital tools to bring satirical illustration to rural areas, fostering creative engagement.
- **National Television Production** – Filming by Bulgarian National Television at Villa Melnik and Kordopulova House helped raise the profile of the region and its indigenous grape variety *Shiroka Melnishka*, showing how creative industries can support tourism branding.
- **SERENE (INTERREG)** – A public-NGO partnership involving Sandanski and Gotse Delchev municipalities, Skopje-based institutions, and tourism agencies, focusing on upgrading tourism infrastructure such as open-air museums and cycling trails.
- **Beeograph Project (Villa Orbelus)** – An eco-innovation initiative linking smart beekeeping with viticulture sustainability, raising awareness of the ecological dependencies in wine production.
- **Balloon and Wine Tasting Event** – A creative tourism product developed by multiple wineries, combining balloon flights with wine tasting. Though currently one-off, there are ambitions to establish it as a seasonal attraction.

**Horizontal collaboration** represents **27.3%** of the cases, mainly involving joint efforts among wineries. A key example is the **Struma Valley Open Cellar Days**, an annual off-season event involving 15 wineries, combining wine tastings, guided tours, and cultural programming.

By contrast, **vertical collaboration**—which connects wineries with public authorities or intermediary organizations—was observed in just **18.2%** of cases. Notable initiatives include:

• **Melnik Wine Routes Map** – A bilingual digital guide developed jointly by a winery and an IT specialist, enhancing visitor orientation and visibility of both wine and cultural sites.

• **Destination Sandanski** – A legacy organization involving wineries, small producers, hotels, and the Sandanski municipality, working to build a unified tourism brand and facilitate coordination between sectors.

*Form of Collaboration*

The analysis of collaboration forms shows that **informal partnerships** account for **27.3%** of the cases (3 initiatives), typically emerging through spontaneous interactions or shared interests without formalized agreements. **Formal collaborations** represent another **27.3%**, and are characterized by structured relationships with clearly defined responsibilities. One initiative (**9.1%**) involved formal collaboration through an association structure. The most frequent category was **project-based collaboration**, with **36.4%** of cases (4 initiatives), most of which involved NGOs or were driven by public funding mechanisms.

*Purpose of Collaboration*

**Marketing** and **cultural engagement** emerged as the most prevalent goals of collaboration, each appearing in **72.7%** of the initiatives (8 cases). These reflect a strong emphasis on regional branding and the promotion of local identity. **Joint product development** was identified in **54.5%** of the cases (6 initiatives), indicating a growing interest in co-creating integrated tourism experiences. **Training** was present in **27.3%** (3 cases), while **logistical collaboration** appeared in **18.2%** (2 cases). Notably, **lobbying** was not a stated goal in any of the initiatives.

*Duration of Collaboration*

In terms of duration, the most frequently observed model was **long-term (sustainable) collaboration**, accounting for **45.5%** (5 initiatives). These initiatives tend to be embedded in ongoing strategic partnerships or institutional arrangements. **One-time collaborations** represented **27.3%** (3 cases), often linked to events or pilot initiatives. **Medium-term initiatives** accounted for **18.2%** (2 cases), while **seasonal collaborations** were the least common, observed in just **9.1%** (1 case).

**Conclusion**

This study examined how wineries in the Melnik region of Bulgaria enhance their visibility and attract visitors through participation in various cross-sector initiatives. Each of these initiatives contributes to the diversification and enrichment of the region's wine tourism offerings. Through content analysis of the websites of wineries, municipalities, and

NGOs, the study found that, although **informal events** were fewer in number, they often played a **critical role** in promoting the region, the wineries, and their products.

One notable example is the **Open Cellar Days** initiative, which initially promoted equal visibility among participants. Over time, however, the dominance of larger wineries diverted tourist flows away from smaller participants, leading some to drop out. Despite international best practices demonstrating the benefits of coordinated cluster branding, such **collective marketing strategies remain underutilized** in the Melnik region. For instance, the **Melnik Wine Routes map**, created to promote the region's wine trails, has not been updated in terms of content or design since its launch, rendering it outdated in an era increasingly shaped by digital innovation and AI integration, particularly in tourism.

The findings also highlight a **competitive rather than cooperative atmosphere** among wineries. Still, there are encouraging signs of increasing collaboration with local businesses and tourism networks, which strengthens the region's appeal as a destination.

This research has several limitations. Because it relied solely on publicly available **website content**, some ongoing initiatives may have been overlooked, especially those not directly targeting the tourist market, potentially underestimating the extent of wineries' collaborative activities. Additionally, the findings are **specific to the Melnik region** and may not be generalizable to other wine-producing areas with different cultural, economic, or regulatory contexts. Finally, while content analysis allows for systematic observation, it cannot fully capture the **qualitative impact** or depth of individual initiatives.

These limitations point to future research opportunities, such as integrating **visitor feedback**, conducting **comparative regional studies**, and utilizing **additional data sources** beyond websites to develop a more comprehensive understanding of how each initiative shapes the landscape of wine tourism.

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# ECONOMIC BENEFITS OF BULGARIAN MARINE TOURISM COMPANIES FROM YACHTING INVESTMENTS IN GREECE: AN ALTERNATIVE ANALYSIS BEYOND THE BLACK SEA

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***Abstract***

*This study examines ways in which Bulgarian yacht charter companies can generate revenue and profits from the growing sector of maritime tourism and boat chartering in Greece. New data on the increase in charters, berths and revenue from this business activity are used. Greek market differences are presented in view of their significant lead over the maritime tourism market in Bulgaria. Focusing on this, the ways in which Bulgarian boat rental companies can take advantage of Greece's lead, good port infrastructure, and growing demand are examined. Findings show that a smart start to recreational boat chartering and high-quality maritime tourism services could generate significant revenue and create new jobs. Existing economic data and dynamics of each country are profiled, together with the benefits of cooperation in the sector, as it is assessed whether it is profitable for Bulgarian companies to enter the Greek maritime tourism market as a diversification strategy.*

***Keywords****: sailing; maritime tourism; Bulgaria; Greece; foreign investment; maritime infrastructure; charter market; new market.*

***JEL Codes:*** *G14, O19*

## Introduction

Maritime tourism in Greece has grown significantly over the last ten years. This makes the country a world leader in the luxury yacht charter sector. In 2023, Greece accounted for approximately 26% of the global luxury yacht charter market. It had approximately 7,100 large charters for boats over 20 meters in length. Thus, it remained ahead of former leaders in the sector, such as France and Italy (Greek City Times, 2024). This growth stems from increased demand for high-end travel by tourists from other countries. It also comes from the supply side. This means government assistance, new and improved marina infrastructure, a new fleet of tourist boats, and new private capital in the Greek maritime trade.

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This segment of maritime tourism adds a lot of revenue. The Greek boat trade generated approximately €800 million in direct payments in 2023. All maritime and coastal trips with chartered boats generated approximately €2.3 billion in GDP and €5-6 billion in other ways. This employed approximately 22,500 full-time positions. These figures show the important role that maritime tourism plays in Greece's "blue economy" plan. This is a plan that combines tourist trips, transportation, and the development of maritime and coastal tourism businesses.

In Bulgaria, however, maritime tourism does not perform as well economically in comparison with Greece. It remains important from an economic point of view, as it contributes about 15% to its GDP **(**Interreg Greece-Bulgaria) and in 2024 it received over 13 million visitors from other countries (Statista, 2025). However, the maritime infrastructure does not offer much room for growth. There are not many large marinas and marinas that can accommodate large boats. Not many boats are available for rent (approximately 1,200 boats in 2023, while Greece had 17,000). Also, due to limited demand, the recreational boat trade sector has not developed significantly. This prevents the country from developing maritime tourism and taking a leading position in the maritime tourism market. This gap between the two countries' development and revenues in maritime tourism shows that there are good opportunities for cross-border investment and knowledge exchange. This is important, as Bulgarian shipping companies have the potential to enter the large and growing recreational boat market in Greece (Marinos, I. 2023).

**Key improvements**

In a more thorough analysis, we show the progress and development of the Greek market. We examine market trends and what is available. We added and compared data (charter rates, GDP, jobs, available yachts). We added ideas such as "blue economy," "supply chain integration," and "regional competitiveness." We highlighted Bulgaria's weaknesses, the current situation, and good investment opportunities. This forms the basis of the study.

**Methodology**

This study uses a combination of research methods. It combines "quantitative comparative assessment," "time series trend analysis," and "strategic scenario modeling." We examine the economic benefits that Bulgarian-based maritime excursion companies could reap if they invest in Greek maritime tourism.

Our research is based on well-known methods of statistical analysis in the field of tourism revenue, studies of the "blue economy," and the "theory of regional adaptation and comparative analysis."

1. "Quantitative comparative assessment." The first step, as shown in Table 1, is to create a data set for examining both regions. This is done to identify the key differences between the Greek and Bulgarian recreational boating worlds.

*Table no. 1- Summary of Analytical Framework*

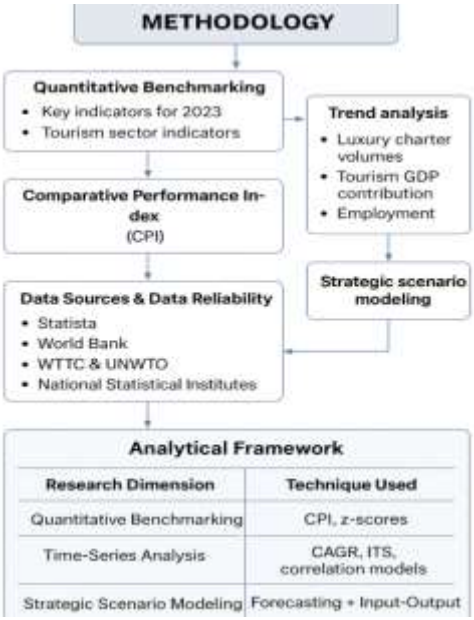
| Research Dimension | Technique Used | Purpose |
|---|---|---|
| Quantitative Benchmarking | CPI, z-scores | Assess cross-country competitiveness |
| Time-Series Analysis | CAGR, ITS, correlation models | Evaluate structural trends (2019–2023) |
| Strategic Scenario Modelling | Forecasting + Input-Output | Estimate direct, indirect, and induced impacts |
| Data Triangulation | Multi-source verification | Enhance reliability and robustness |

*Source:* World Bank Group (2020)

The key figures (KPIs) for the year 2023 are: Number of registered yachts, Annual yacht tourism revenue (€), Average occupancy rate (%), Direct employment in the yachting sector, Statista – Yachting and maritime tourism statistics for Greece and Bulgaria, World Bank Blue Economy Reports – Maritime infrastructure and investment potential, WTTC & UNWTO Datasets – Tourism GDP and employment trends, National Statistical Institutes – Greece (ELSTAT) and Bulgaria (NSI)], Academic studies on yachting sustainability and competitiveness. [(Greek City Times, 2024), (Wealth, 2023), (Elegant Facilities S.A. Services)].

The methodological framework is illustrated on Figure no. 1 and enables a comprehensive, multi-layered analysis of the potential for Bulgarian yachting investment in Greece.

*Figure no. 1 - Methodology*




*Source:* Authors work (2025)

**Tourism and GDP Numbers**

Greece's Boat and Tourism Sector: Greece shows a post-pandemic recovery. It is backed by its own strength.

Luxury Yacht Charters:

- 2019 → 1,600
- 2020 → 2,350
- 2021 → 5,800
- 2022 → 7,200
- 2023 → 7,100

This is a + 344% increase in five years. It shows Greece is the leader in the Mediterranean yachting market.

Tourism GDP Contribution:

- 2019 → €28.5B (13%)
- 2020 → A drop from the pandemic
- 2021 → A slow comeback
- 2022 → €24B (11.5%)
- 2023 → €28.5B (13%) (Tovima, 2025).

Total Tourist Arrivals:

- 2019 → 33.1M
- 2020 → 7.4M
- 2021 → 14.0M
- 2022 → 30.1M
- 2023 → 34.5M

Tourism Employment:

- 2019 → 400K jobs
- 2020 → 250K
- 2021 → 300K
- 2022 → 350K
- 2023 → 370K

These facts show Greece's structural competitiveness: a good system for boats, a strong base for tourism, and good plans to come back after the pandemic. (Insete Intelligence, 2025).

Bulgaria's Tourism and Yachting Sector: Bulgaria shows steady tourism growth but lags in marine tourism development:

Tourism GDP Contribution:

- 2019 → 9.9%

- 2020 → 4.2%
- 2021 → 4.9%
- 2022 → 6.5%
- 2023 → 7.0%. [(Knoema, 2020), (World Travel and Tourism Council, 2023)].

Tourism Revenue:

- 2022 → ~BGN 10B (~€5.1B)
- 2023 Forecast → BGN 11.4B (~€5.8B).

Total Tourist Arrivals:

- 2019 → 8.19M
- 2020 → 4.02M
- 2021 → 5.65M
- 2022 → 7.62M
- 2023 → 8.64 (Statista, 2025).

Jobs in tourism and related industries WTTC data 2019-2022

- 2019 - 316 300
- 2020 - 248 500
- 2021 - 250 300
- 2022 – 270 000
- 2023 – 287 079

(own calculations based on National Statistical Institute (NSI) of Bulgaria data )

*Combination of information: by National Statistical Institute, Ibis World, Mordor Intelligence, Insete Intelligence (2025).*

While inbound tourism is recovering, Bulgaria's marine tourism ecosystem remains underdeveloped. Limited yacht registrations (1,200 vessels), weak marina infrastructure, and low visibility in premium nautical markets constrain sectoral competitiveness.

The information summarized above allows the outline of the comparative market dynamics for the sector growing sector of maritime tourism and boat chartering in both Greece and Bulgaria (Table no. 2).

*Table no. 2- Comparative Market Dynamics*

| Dimension | Greece | Bulgaria | Implications for Bulgarian Investors |
|---|---|---|---|
| Market dynamics | Global | Emerging, underdeveloped | Invest in cross-border entry strategies |
| Revenue Scale | €2.5B (2023) | €150M (2023) | Target high-margin Greek charter markets |
| Fleet Size | 17,000 yachts | 1,200 yachts | Outsource capacity gaps via Greek partnerships |
| Occupancy Rate | 85% | 60% | Capitalize on unmet demand |

| Dimension | Greece | Bulgaria | Implications for Bulgarian Investors |
|---|---|---|---|
| Tourism GDP Share | 13% of GDP | 7% of GDP | Integrate into Greece's premium value chains |
| Tourist Arrivals | 34.5M (2023) | 8.64M (2023) | Leverage Greek flows for joint offerings |

*Source:* Combination of information by Ibis World, Mordor Intelligence, Insete Intelligence (2025).

**Key findings**

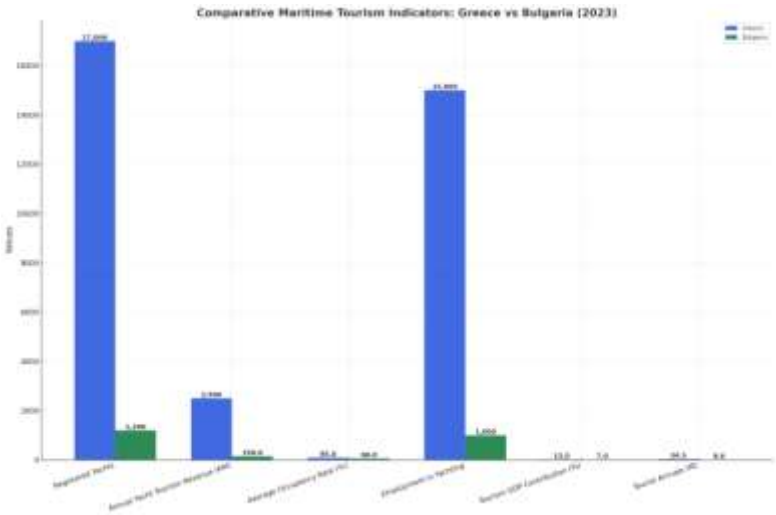
Recreational boat charters in Greece increased by 344% from 2019 to 2023, confirming Greece's dominance in the Mediterranean. The Bulgarian tourism market is recovering slowly but steadily, but the maritime tourism infrastructure is limited. Bulgarian maritime tourism companies can accelerate their growth in the following ways: By creating new companies in Greece or forming joint ventures with Greek recreational boat operators and marinas or By providing specialized services (maintenance, renovation, eco-friendly charter solutions).

1) Chart – Trends → Recreational boat charters in Greece (2019–2023)

2) Comparative chart → Contribution of tourism to GDP (Greece vs. Bulgaria, 2019–2023)

3) Bar chart → Total tourist arrivals in both countries (2019–2023)

*Figure no. 2 – Bar Chart*




*Source*: World Travel and Tourism Council (2023)

Combined infographic summarizing all key maritime tourism indicators for Greece vs Bulgaria (2023) (Fig. *no.2).*

Three scientific visualizations for the key fundings integrate the six most relevant metrics into a single, publication-ready visual (Fig. no. 3): Registered yachts, Annual yacht

tourism revenue (€M), Occupancy rate (%), Employment in yachting, Tourism GDP contribution (%), Tourist arrivals (millions):

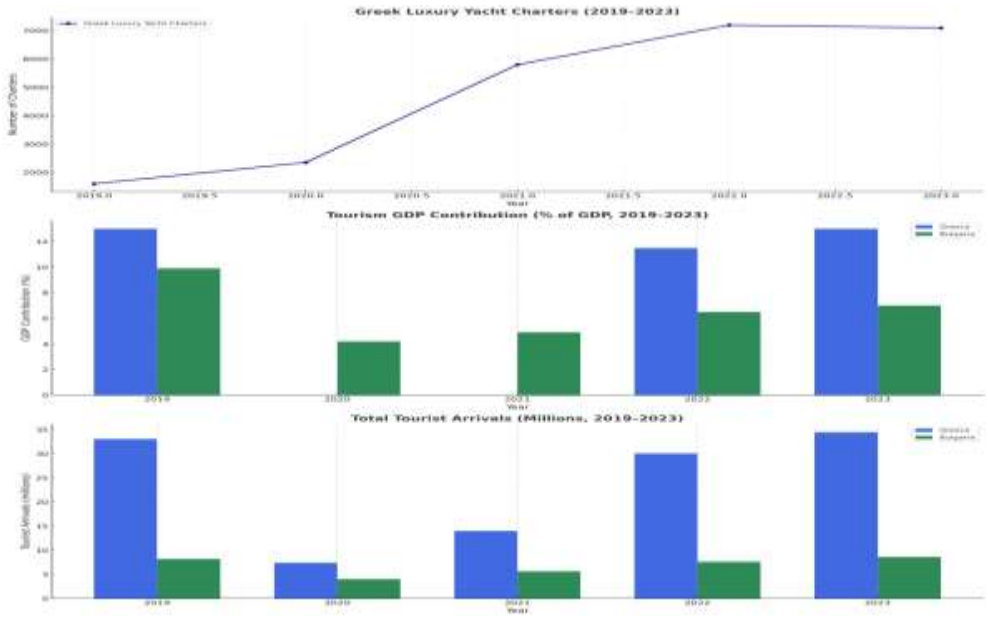
1) Trend Line Chart → Greek luxury yacht charters (2019–2023)

2) Comparative Bar Chart → Tourism GDP contribution (Greece vs Bulgaria, 2019–2023)

3) Clustered Bar Chart → Total tourist arrivals in Greece and Bulgaria (2019–2023)

(Combination of information: by Statista, Public Disclosure Authorized (2020), National Statistical Institute).

*Figure no. 3 – Most relevant metrics*




*Source:* Combination of information: by Intelligence (2025), ReportLinker.

**Discussion**

An examination of the sailing industry in both Greece and Bulgaria reveals clear differences that could lead to significant opportunities for Bulgarian shipping companies (Table no. 3/Fig. no. 4). Greece has a large, well-organized sailing industry with 17,000 boats, generating €2.5 billion from boat trips, with an occupancy rate of 85%. On the other hand, Bulgaria has only 1,200 recreational boats, generates less revenue (€150 million), and lacks many of the things it needs to develop sea excursions in the domestic market.

This gap is a strong argument for cross-border investment. Bulgarian companies could leverage what Greece has already created, the high demand and its position in the high-end market, to grow quickly and generate revenue without the constraints of their own domestic market. The huge increase in yacht rentals in Greece (344% from 2019 to 2023) shows that there is room for new companies, especially those offering high-end marine tourism services or technical care and maintenance of yachts.

Bulgarian companies could benefit in several ways: Revenue diversification - Entering the Greek market allows companies to gain a share in a sector worth €2.5 billion, much larger than Bulgaria's domestic market; Transfer of skills and knowledge - Working in Greece helps Bulgarian companies improve in maritime tourism, crew management, and technical support services; Brand and market positioning - Collaborating or developing joint projects with Greek companies lends an international image and credibility to luxury maritime excursions in the Mediterranean; Optimization of production capacity - By outsourcing certain fleet tasks or offering specialized services, Bulgarian companies can overcome local limitations and capture market share; Strategic Investment Recommendations for Bulgarian Companies - Firstly, to form joint ventures with Greek entrepreneurs by collaborating with Greek boat companies located there. Work with their customers, their boat locations, and their knowledge. Secondly, offer special services such as: Creation of joint ventures and partnerships with local entrepreneurs; Taking advantage of existing demand and gaps, such as eco-friendly boat trips; Offering services such as boat maintenance, boat repair, and crew organization; Exploiting online customer search platforms, presence on social networks, and creating a website to attract and publicize the activity to specialized customers from all over the world; Utilization of the activity to acquire skills; Acquisition of experience and know-how from the largest market in Europe; Application of skills in the boat business and transfer of know-how to Bulgaria; Targeting areas with high returns on luxury charter services.

*Table no. 3 Strategic Investment Recommendations*

| **Dimension** | **Greek Market Insight** | **Implication for Bulgarian Companies** | **Recommended Strategy** |
|---|---|---|---|
| **Market Size** | 17,000 yachts, €2.5B revenue (2023) | Access to a mature, high-value market | Joint ventures or fleet outsourcing |
| **Demand Growth** | Luxury charter growth +344% (2019–2023) | High and resilient demand for premium services | Offer specialized luxury charter services |
| **Occupancy Rate** | 85% average occupancy | The market can absorb new operators | Focus on high-margin itineraries and seasonal packages |
| **Tourist Flow** | 34.5M arrivals (2023) | Large international audience for cross-border offerings | Develop integrated tourism packages linking Greek and Bulgarian destinations |
| **Infrastructure** | Dense marina network, advanced facilities | Immediate operational support without domestic investment | Provide maintenance, refitting, and crew services |

| Dimension | Greek Market Insight | Implication for Bulgarian Companies | Recommended Strategy |
|---|---|---|---|
| **Revenue Diversification** | Established premium segments | Reduce dependence on the Bulgarian domestic market | Target niche, eco-friendly, or high-value tourism services |
| **Skill Development** | Mature operational ecosystem | Build expertise in luxury yachting management | Knowledge transfer and gradual expansion into Bulgaria |
| **Long-Term Positioning** | Global Mediterranean hub | Enhance brand credibility and international presence | Strategic partnerships and marketing in Greek premium markets |

*Source:* Greek City Times (2024)

*Figure no. 4 –Economic Benefits*

*Source:* Combination of information by GTP - Headlines Greek Travel Pages (2024), Eurostat (2024).

**Conclusion**

Research and economic analysis of the data, shows that investments by Bulgarian yacht charter companies in the sector of tourist boat operation and rental in Greece, is the only way forward for companies that want to grow and represent a viable and strategically advantageous opportunity.

The data from the analyses emphasize that Greece's Yacht Charter and boat tourism industry offers significant revenue potential, advanced business frameworks and know-how and high international visibility advantages that have not been sufficiently developed in the emerging Bulgarian tourist boat market

By implementing the proposed strategies, including strategic partnerships, the provision of specialized services, and integration into Greek tourism networks, Bulgarian yacht Charter companies are in a position to: Gain significant economic benefits in the field of maritime tourism in Greece, as confirmed by the size of the Greek market, the exponentially growing trends, and tourist demand for the yacht charter market. Lay the foundations for growth in the Bulgarian recreational boat market, leveraging their knowledge and networks through cross-border activities

In summary, investing in the Greek yacht charter tourism sector is a financially viable and strategically good decision for any Bulgarian company operating in this sector. This cross-border cooperation will enable Bulgarian companies to expand their market presence, develop their service provision, and effectively integrate into the global value chain of nautical tourism as companies.

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# WATER SPORTS FACILITIES AS A STRATEGIC DRIVER FOR GREECE'S SPORTS TOURISM INDUSTRY: OPPORTUNITIES AND CHALLENGES IN ATTRACTING INTERNATIONAL ATHLETES

**Theodora Partali**[1]

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***Abstract***

*The present study examines the manner in which aquatic sport infrastructures can provide strategic impetus to the creation of sport tourism in Greece. The aim of this study is to explore which mechanisms of natural strengths, climate and coast line, can be complemented by state-of-the-art infrastructures in order to draw in world athletes and position Greece as a player in world sport tourism. The study surveys available literature as well as worldwide case studies, while assessing the particular prospects and obstacles that Greece presents. The anticipated outcomes emphasize that state-of-the-art facilities that are properly managed enable athletes to train as well as compete effectively, while simultaneously creating new opportunities for local economies and destination branding. Concurrently, gaps in infrastructures, divided government, together with increasing stress on natural ecosystems, are demonstrated to restrict progress. The inferences are that, through coordinated initiatives along with long-term sustainable investment patterns, Greece has the potential to convert natural and the incorporation of cultural assets into enduring competitive advantage.*

***Keywords:*** *Sports Tourism; Water Sports Facilities; Greece; International Athletes; Destination Competitiveness; Sustainable Tourism; Public-Private Partnerships (PPPs);*

***JEL Codes: L83***

## Introduction

Sports tourism has been one of the world tourism industry's fastest-growing sectors, integrating sport activity and leisure with destination marketing. Sports tourism now represents an increasingly larger percentage of global travel, with professionals and amateur participants looking at destinations that offer first-rate facilities, excellent natural environment, and a well-developed integrated tourist infrastructure. In the wider framework of reference within this context, specific segments such as water-based sports tourism are of a particularly dynamic character, particularly for countries with long coastlines and a nautical tradition and climates of a promising kind.

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With its extensive coastline, thousands of islands, and Mediterranean climate, Greece has natural assets highly favorable for water sports. These factors set up a competitive profile for the nation to function as a hub for both professional practitioners in the sporting arena and foreign sports travelers.

In spite of the above inherent advantages, the facilities' role is central. Foreign athletes and sporting organizations now rely more and more on natural elements but also on the quality, accessibility, and environmental sustainability of sporting infrastructure when making destination decisions. Water sporting infrastructure—marinas, swimming centers, yacht and sailing clubs, and Olympic Games legacy venues—serves as strategic accelerators that could convert Greece's natural comparative advantages into tangible prospects of attracting foreign athletes. But to what level is that level of facilities well developed and well maintained and well-integrated within the broader framework of tourism development policy.

This study aims to investigate the strategic role played by water sport infrastructures in the development of sport tourism in Greece based on the ability of the facilities to attract foreign athletes and improve the international positioning national context. Based on a systematic review of existing literature, international case studies, and policy trajectories, the article raises the opportunities presented by the natural and cultural landscape of Greece and challenges presented by infrastructural deficiencies, governance challenges, and sustainability challenges. Through the paper, it aims to contribute to the larger debate on destination the competitive position of the sport tourism sector through selective investment in infrastructure and strategic policy coordination.

**Water Sports Facilities and Sports Tourism: Conceptual Framework**

According to Hinch and Higham (2001), Sport tourism is defined as travel away from home to participate in or observe a sporting event. Sporting Events have a set ruling system, involve competition, and have a component of play. The sports being played on the trip may influence your travel choice either as a primary motivator for taking the trip or as a secondary motivator. Based on how much attention you put into your sporting event while on holiday, the experience will change for you to the point that the entire series of events will be reviewed differently. This way of thinking about sports gives sport its uniqueness as an attraction..

Sporting infrastructure plays a central role in shaping tourism destinations, as stadiums and other sports facilities increasingly function as attractions in their own right, often linked to nostalgia tourism through visits to arenas, halls of fame, and guided tours of stadiums. Beyond their cultural and experiential value, infrastructure positioning is also crucial, since location is considered a non-discretionary factor that directly influences accessibility, security, competition, and long-term growth potential of a tourism site. Moreover, the governance and operational organization of sport facilities significantly

impacts tourist satisfaction and return intentions, with service quality emerging as a critical determinant of overall visitor experience (Darko et al., 2022, pp. 6–8).

The SPLISS model (Sport Policy factors Leading to International Sporting Success) constitutes a comprehensive analytical framework that is used to compare national elite sport policies. There is a clear distinction between macro-level (such as economy, demography, geography, and culture), meso-level (national sport policies and systems), and micro-level (athlete characteristics individually) factors. While the macro-level factors are quite stable, government and sport organizations are in a position to address the meso-level directly in order to improve international sporting success (De Bosscher et al., 2006; De Bosscher et al., 2008). Training facilities and the environment in which the training is conducted were found to serve as a core determinant of high-level athletic achievement. Sufficient, accessible, and of high quality, the facilities help to create the environment that allows athletes to train regularly and effectively and supply the environment necessary to sustain long-term development of athletes and continued success at the international level. On the other hand, substandard or inadequate facilities are known to deter participation, restrict the progress of the athlete, and lead to drop-out from the sport (Emonyi, 2021).

Training facilities, alongside coaching provision, talent identification, athlete support, competition opportunities, and scientific research, form part of the controllable meso-level factors that national governments can design and optimize through integrated. In this sense, facilities are not simply physical infrastructures but represent the broader training environment, which influences motivation, the quality of practice, and ultimately international success. The SPLISS model thus positions training facilities as one of the central building blocks of an effective elite sport policy system, emphasizing their dual function as a strategic asset and an enabler of broader athlete development pathways. Beyond elite training facilities, water sports infrastructures such as marinas also play a strategic role in shaping tourism demand and international athlete attraction, as evidenced in Spain.

De-Juan-Vigaray et al. (2025) studies suggest that Spanish marinas are not only recreational boating and nautical sport infrastructures but also fundamental tools for tourism demand. Marine and coastal natural resources are integrated into the larger leisure economy through them, diversifying destinations while also making a substantial contribution to the Blue Economy. Through research, the findings are that, when properly managed, marinas are the vital link among nautical activities, international flows in tourism and the economic development of coastal regions. The paper insists that Spanish marinas still underexploit their natural as well as environmental capital, with only approximately 41% of them sharing information on neighboring natural resources through their websites. The paper insists that sustainable management, cooperation among stakeholders, together with complementary service integration that is complementary (restaurants, boutiques, culture), are all important to improve competitiveness as well as provide for long-term ecological balance.

Martínez-Vázquez, de Pablo Valenciano, and Milán-García (2022) provide empirical evidence that marinas in Andalusia represent core infrastructures for nautical tourism,

generating strong economic, social, and environmental effects observed at both the local and regional scale. With a network exceeding thirty marinas and nearly 20,000 berths, Andalusia is one of Spain's leading nautical destinations. Using a combination of input-output analysis, PESTEL, and SWOT frameworks, the study shows that marinas contribute over €285 millions of revenue, sustaining approximately 1,100 jobs, and act as hubs for complementary industries such as accommodation, catering, and cultural activities. Importantly, the research emphasizes that marinas enhance the attractiveness of destinations, functioning as focal points for international nautical events and visitor flows, while also facing challenges of aging infrastructure and strong competition from other Mediterranean destinations.

**Greece's Natural Assets, Infrastructures, and Strategic Challenges in Water Sports Tourism**

Greece is commonly known as one of the world's most beautiful destinations for tourists, mainly due to its natural qualities. Its long coastline, islands, distinct natural scenery, and pleasant Mediterranean climate have made it repeatedly popular among global tourists (Vandarakis et al., 2023). Indeed, Greece has a coastline that extends to 13,676 km, the longest in the Mediterranean region, while coupled with diverse insular geography as well as a wide cultural heritage, adds to its comparative advantage as the world's top destination (Wikipedia, Geography of Greece). Besides making Greece popular for summer vacations and leisure, these qualities offer room for sustainable as well as non-conventional kind of tourism all year round. The "Meltemi" are powerful, dry northern winds that sweep across the Aegean Sea from mid-May to mid-September, usually to Beaufort scale 7–8. They are ideal for sailing and other aquatic sporting activities because of their powerfulness and reliability (Wikipedia, n.d.). The latest studies underscore their immediate use in sporting events. For instance, preemptive gales of 60 km/h in the coastal region of Attica drew huge crowds of kiteboarders to show how the Meltemi is boosting Greece as a center for wind-powered aquatic events (AP News, 2025).

Greece possesses extensive maritime infrastructure that supports tourism and water sports. The country has 51 marinas with a total capacity of 14,661 mooring places, offering full services to visitors (Wikipedia, n.d.). Furthermore, Greece showcases its strong maritime heritage and capacity to support nautical tourism (Our Ocean, 2024). Coastal and maritime territories are essential to sustainable tourism evolution. A current study stresses that the Mediterranean coastlines and coastal ecosystems offer key services to local economies, tourism sectors, as well as to long-term coastal management planning and conservation (Gkaifyllia et al., 2025). Examples of destinations Greek tourism is concentrated on some very popular resorts, most of which are also nodes for water sporting and nautical recreation. These are Crete, Rhodes, Corfu, Santorini, and Mykonos, all of which attract enormous numbers of overseas tourists annually and provide significant ancillary infrastructure for recreation and tourism (Wikipedia, n.d.).

Beyond its natural and infrastructural strengths, tourism has historically been a vital pillar of Greece's economy. According to Kalantzi, Tsiotas, and Polyzos (2017), tourism accounts for roughly 17% of Greece are Gross National Product (GNP) and contribute in over 800,000 jobs. Its importance becomes especially pronounced in times of economic turbulence, such as the period following the 2009 financial crisis, where tourism showed resilience and provided a "low-risk" path for recovery. Furthermore, tourism income between 2000 and 2013 reached close to 150 billion euros, a figure that nearly covered the trade imbalance observed over the corresponding period.

Nevertheless, the traditional tourism model in Greece, which primarily relies on the "3S" pattern (sea, sun, sand), is affected by seasonality, over-tourism, along with significant environmental degradation. Mass tourism has placed considerable strain on infrastructure systems and also on natural environments, also clustering the economy in coastal and insular zones, with inland zones remaining underdeveloped. This opens prospects for non-traditional models of tourism that would more equally redistribute economic advantages and may support sustainability objectives. One is sports tourism, which has gained prominence in the last few years as a sustainable growth driver in tourism development. Panagiotopoulos (2025) carried out an empirical survey involving 1,503 respondents, who noted that integrating sports events in holiday packages boosts daily expenditure per tourist, enhances the average stay on a daily basis, and motivates improved tourist experiences. The study indicates that sports are both a motivator and a mechanism through which tourists can improve their vacations, as evidenced by the finding that 46% of respondents noted that they attended at least one sport-related event while on their vacations in the last three years. In addition, 87% of tourists are willing to pay more money to stay in accommodation next to sporting facilities, indicating the commercial viability in integrating sporting facilities into tourism planning.

From a sustainability standpoint, sports tourism is a positive contributor to all three pillars—the economic, social, and environmental. From an economic perspective, local businesses are supported through payments for accommodation, catering, and tickets (p. 40). Socially, community cohesion, cultural interchange, and healthier lifestyles are promoted. Environmentally, the adoption of eco-friendly sport-related practices (i.e., hiking, cycling and renewable energy use in facilities) reduces adverse impacts and enhances long-term destination resilience.

In conclusion, the synergy between sports and tourism in Greece represents a strategic opportunity for diversifying the national tourism product, reducing seasonality, and ensuring sustainable development. By capitalizing on its rich cultural heritage, natural landscapes, and growing demand for active experiences, Greece can reposition itself as a competitive destination for sports tourism, thereby generating higher revenues and fostering more even regional development.

Greek Tourism sector, as a core component of the national economy, has created important environmental pressures, especially in coastal and insular Greece. Mass tourism

has created the loss of natural resources, pollution, together with coastal erosion processes, as Sakellariou et al. (2016) emphasize. Their study indicates that the spatial concentration of tourism flows in vulnerable ecosystems— a critical issue for the region, namely islands— has surpassed the carrying capacity of local environments, leading to the loss of water sources, erosion in soils, and challenges related to waste management issues. Environmental pressures like these erode the Tourism's Sustainability and threaten regional economies over the long run.

Recent journalistic and institutional reports echo these concerns. According to Le Monde (2024), the Cyclades face overtourism-related pressures, including limited water availability, inadequate waste management systems, and rising rental prices that undermine local communities' living standards. While mass tourism remains a financial windfall, it simultaneously risks exhausting essential resources and undermining social cohesion if not properly managed. Similarly, the Financial Times (2024) reports that Greek authorities have introduced policy measures to respond to overtourism, including setting a "climate crisis tax" along with limitations on short renting periods. Such policy measures are aiming to reconcile economic growth with environmental responsibility through the alleviation of pressure on critical infrastructure together with sensitive ecosystems.

Together, these discoveries suggest a critical necessity for tourism reform in Greece. Without sustainable management approaches and good governance, the nation faces permanent degradation to the coastal and insular environments. Incorporation of visitor limits, sustainable investments in infrastructure, alongside alternative tourism models to tourism development are crucial in preventing tourism from being a driving force in decline instead of prosperity.

**Attracting International Athletes: Policy Recommendations and Strategic Directions for Greece's Sports Tourism**

Sport tourism has increasingly been perceived as a source of regional and national advancement, economically supporting social cohesion. Aldulaimi, Abdeldayem, and AboKeir (2023) highlight that sports tourism has the capacity to support the achievement of Sustainable Development Goals (SDGs) set by the United Nations in a direct manner, citing Qatar where cooperation among stakeholders together with sustainability-oriented strategies, exemplars particularly around the 2022 World Cup, have taken the sector to unprecedented levels. The study references how sport tourism is not merely an economic motivator but also acts as an agent for cultural exchange and infrastructure development.

Greece has also placed itself in this setting through actively fostering tourism-sport linkages. Mackay (2025) says that the Greek National Tourism Organization alongside tith the Hellenic Olympic Committee agreed to a cooperation protocol o strengthen the country's international competitiveness as a sporting tourism destination. The latter aims to capitalize on Greece's cultural heritage and the long-term Olympic legacy, while placing sport in the broader plan to market tourism.

Public–Private Partnerships (PPPs) become a vital tool in supporting this development path. PPPs are identified by Akhmetshina, Ignatjeva, and Ablaev (2017) as vital in bringing in supplementary sources of funding into sporting infrastructure, with international examples of successful PPP models that blend public control with private sector funding. Likewise, the APEC (2002) model showcases PPPs in tourism to leverage financial and managerial capital, as long as transparent regulations and long-term arrangements are in place. These models can act as good points of reference to localizing the Greek setting. Despite these possibilities, Greece has historically not taken advantage of its sporting tourism opportunity. Belias et al. (2018) contend that after nearly fifteen from the 2004's Athens Olympic Games, the country failed to take advantage of the momentum to emerge as a premier sports tourism destination. Although Greece has excellent natural, cultural, and infrastructural strengths - from mountains to islands to marathon culture to world events - these remain enormously underdeveloped.

At the broader economy level, tourism has always displayed resilience and prospects for expansion in Greece. There is proof by Kalantzi, Tsiotas, and Polyzos (2023) that tourism is a secure sector to capitalize on, contributing enormously to the GDP and generating employment while boosting regional sustainability. This highlights the importance for sports tourism to supplement the national tourism economy.

Lastly, the DEPART Report (Regional Development Agency South-West Oltenia, 2025) emphasizes that sport tourism constitutes one of the most crucial segments of the tourism market, bringing together physical activity, cultural elements, and environmentally responsible practices. The report pinpoints the requirement for working ecosystems and coordinated service provision with the aim of transforming sporting events together with training camps into sustainable tourism products.

Collectively, these findings indicate that Greece has the means and the political commitment to build sport tourism as a cornerstone for long-term sustainable development. In order to achieve this, needs to draw on PPPs effectively, incorporate the sustainability frameworks, while also actively promoting Greece's unique cultural and natural assets.

**Conclusion and Recommendations**

Water sport facilities are the linchpin for Greece's ability to develop its sports tourism market and draw world-class athletes. Its natural endowments—the climate, large coastline, and maritime culture—create important opportunities, though underdeveloped due to gaps in infrastructure, insufficient coordination, and pressures on the environment. To realize these potential strengths, Greece needs to embrace an integrated national approach to sports tourism that brings government, regional authorities, and private sector partners into line around a common perspective. Strategic objectives should encompass modernization of facilities based on public–private partnerships, branding environmentally friendly and sustainable facilities like green marinas, and the crafting of cross-country marketing initiatives that frame Greece's strengths. Such moves would both increase the appeal to elite

athletes and world events in Greece, as well as guarantee that sports tourism generates benefits in the wider economy, society, and environment. Through this means, Greece can convert natural and cultural capital into durable advantage that positions the country as the world benchmark in water sport tourism.

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# PARALLEL SESSIONS

# SECTION 4:

# ECONOMIC POLICIES, BUSINESS ETHICS AND INNOVATION FOR COMPETITIVENESS AND GROWTH

# THE EFFECT OF BAILOUTS AND BOND MARKETS ON GREECE'S ECONOMIC EVOLUTION: AN EMPIRICAL ANALYSIS

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***Abstract***

*This paper investigates how Greece's macroeconomic outcomes have been affected by changes in public borrowing conditions and bond-market dynamics, especially throughout the sovereign debt crisis. By emphasizing the evolution of public debt and the yield spread between Greek and German sovereign bonds, it assesses whether these financing strains have had measurable effects on real economic growth. The findings indicate that after 2010, both high debt levels and wider bond spreads had a significantly negative effect on growth. However, there is no statistical indication of a consistent long-term relationship among the variables, suggesting that their impact is largely temporary and linked to specific periods of crisis. The research also identifies 2010 as a major turning point, after which financial constraints became more acute. The results support the idea that during downturns, economic policy should be more flexible and supportive, avoiding excessive austerity that may worsen contractions.*

***Keywords***: *Bailouts; Bond Markets; Debt; Economic Growth; Greece*

***JEL Codes***: *E62, F34, G12, H63*

## Introduction

The latest economic developments in Greece exemplify the significant impact that sovereign bailouts and bond market dynamics may have on a nation's growth trajectory. Following the 2009 debt crisis, Greece saw the most significant decline in output among the periphery eurozone nations, with real GDP contracting by about 25% from 2008 to 2016 (Petrakis et al., 2020). This extraordinary collapse was escorted by foreign assistance, as from 2010 to 2015, three successive bailouts amounting to around €290 billion were provided by the European Union, the European Central Bank (ECB), and the foreign Monetary Fund (IMF) (Pagoulatos, 2019). The rescue initiatives were coupled with demanding austerity policies and structural adjustment measures, generating substantial stress across the economy. By the time the third bailout programme ended in 2018, Greece had experienced a prolonged economic slump, resulting in an eight-year contraction that obliterated approximately 25% of its economic production and escalated unemployment rates to a peak of 27% (Sklias et al., 2022).

A salient aspect of the Greek crisis was the escalation of government bond yields and sovereign spreads, since upon Greece's accession to the euro in 2001, the nation's borrowing costs aligned with those of Germany, obscuring fundamental fiscal and external disparities.

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Investor confidence diminished in late 2009, resulting in Greek 10-year bond yields escalating from about 4% to almost 12% by 2010 (Gibson et al., 2012) and the yield spread over Germany increased sharply to exceed 1000 basis points (10 percentage points), indicating a significant default risk (Costantini et al. 2014). Deteriorating fundamentals were the principal long-term drivers of spreads, with the debt-to-GDP ratio evolving as a important aspect of Greek yield spreads. Furthermore, market emotion and contagion played pivotal role throughout the crisis, as Greek spreads exceeded levels warranted by fundamentals amid heightened panic, resulting in a detrimental feedback loop between the bond market and the economy. As bond yields surged, Greece was excluded from market financing, requiring state bailouts, which consequently worsened the recession and initially deteriorated debt ratios as a result of the austerity measures linked to bailouts (Chionis et al., 2016).

A key factor limiting Greece's economic performance during and after the sovereign debt crisis has been the enduring public debt burden. Since 2009, debt-to-GDP ratio escalated from roughly 127% to almost 180% by the mid-2010s, notwithstanding the execution of a significant private sector involvement (PSI) debt restructure in 2012 (Nikiforos et al., 2015), due to noteworthy reduction in nominal GDP, which adversely affected debt sustainability metrics. The adverse macroeconomic implications of elevated public debt are well documented, with numerous research finding various channels via which substantial debt might hinder growth, encompassing heightened sovereign risk premiums, reduced fiscal capacity for productive investment, and the displacement of private sector financing (Reinhart & Rogoff, 2010).

Evidence from cross-national analyses shows a strong negative association between high public debt ratios and later GDP growth, even when accounting for other macroeconomic and institutional variables (Fatás et al., 2019). As for Greece, both foundational and contemporary empirical studies highlight the adverse impact of the debt extension. Pegkas (2018), utilises time-series analysis of the Greek economy and identifies a statistically significant long-term inverse correlation between the public debt ratio and GDP growth, especially during the post-2000s era, when debt indicators became markedly unsustainable. Moreover, Pegkas (2019), using supplementary threshold-based analysis, argues that the debt–growth link becomes markedly more harmful once the debt-to-GDP ratio surpasses critical levels, highlighting the non-linear and context-specific character of debt's macroeconomic effects.

Greece's fiscal policy reaction to the sovereign debt crisis, was characterised by stringent consolidation measures, has been extensively criticised for intensifying the nation's economic decline, with Economides et al. (2021) recording the contractionary effects of austerity programs mandated as prerequisites for international financial assistance packages. More specifically, the consecutive economic adjustment programs enacted in Greece were characterised by drastic expenditure reductions and substantial tax hikes, aimed at diminishing fiscal deficits and reinstating investor confidence. Nonetheless, these

restrictions were implemented during a significant recession, which exacerbated their detrimental impacts. Instead of stabilising the economy, fiscal retrenchment during a cyclical downturn exacerbated output losses and indirectly deteriorated debt dynamics by diminishing the GDP denominator (Karanasos et al., 2017; Markantonatou, 2022).

Quantitative estimates indicate that austerity-induced fiscal shocks led to a GDP drop of almost 22%, including significant reductions in household spending, real wages, and employment levels. Unemployment attained historically unparalleled levels, with joblessness rising by more than 20%, results that closely corresponded with prior cautions from detractors of the adjustment method (Mantalos, 2015). This empirical evidence substantiates the overarching theoretical perspective that fiscal consolidation in struggling countries is often counterproductive in the short term, as De Grauwe (2016) contends that the pursuit of fiscal tightening under these circumstances might trigger a downward spiral, specifically diminishing incomes and aggregate demand decrease tax revenues, which subsequently require additional fiscal tightening, thereby jeopardising the objective of restoring debt sustainability.

In Greece's situation, the macroeconomic collapse was more severe and prolonged than previously anticipated by international organisations and provoked renewed discussion over the ideal order of fiscal consolidation, especially in economies without monetary sovereignty. Nonetheless, recent studies have aimed to equilibrate this narrative by examining the hypothetical situation of a bailout's absence. In this context Plimakis et al. (2022) ascertain that fiscal austerity and deficient institutional quality contribute significantly to Greece's output decline, while external financial assistance from the European Union, International Monetary Fund and European Central Bank, likely averted a more severe economic breakdown.

Building on the foregoing review, this paper seeks to provide the first comprehensive, empirically grounded assessment of how sovereign-debt overhang, Greek–German bond-yield spreads, and successive bailout interventions have jointly shaped Greece’s growth performance over the past four decades. It quantifies the immediate repercussions that mounting debt ratios and widening spreads exert on real output growth, once conventional demand-side controls are taken into account. Beyond the short run, the analysis investigates whether financial variables and output growth are linked by a stable long-run equilibrium. Acknowledging that the crisis may have altered the underlying transmission mechanisms, the study also formally tests for structural breaks, most notably surrounding the first bailout in 2009,in order to distinguish pre-crisis from post-crisis growth regimes.

**Data and methodology**

The empirical investigation employs an annual dataset for Greece covering 1985–2024. The analysis centers on three key indicators: 1) real GDP growth ($GDPG_t$), 2) the 10-year Greek–German sovereign bond yield differential measured in basis points ($SPREAD_t$), and 3) the general government gross debt-to-GDP ratio ($DEBT_t$). Real growth and debt series

are drawn from Eurostat's macroeconomic database, whereas the yield spread is taken from the World Bank's World Development Indicators. The analysis initially employs OLS to estimate reference elasticities linking real output to sovereign risk premia and the public debt burden. Equation (1) embodies the hypothesis that higher market risk premia increase the external user cost of capital, while a larger public debt stock exerts a drag on growth.

$$\mathrm{GDPG}_t = \beta_0 + \beta_1 SPREAD_t + \beta_2 DEBT_t + \varepsilon_t \quad (1),$$

where $\varepsilon_t$ is the error term. Residual adequacy is assessed via the Breusch–Godfrey LM test and heteroskedasticity is probed via the Breusch–Pagan–Godfrey test.

Because fiscal ratios and sovereign spreads often contain stochastic trends, the Augmented Dickey–Fuller (ADF) equation for unit root testing is estimated (Dickey& Fuller, 1979):

$$\Delta y_t = \alpha + \gamma y_{t-1} + \sum_{i=1}^{k} \phi_i \Delta y_{t-i} + u_t \quad (2),$$

where $\Delta y_t$ represents the first difference in the time series variable $y_t$, reflecting the difference in value in two consecutive time periods. The inclusion of constant term a allows for a non-zero mean in the differenced series, as well as the inclusion of a deterministic trend. The parameter γ is allocated to the lagged endogenous variable, $y_{t-1}$, that underlies the ADF test's hypothesis testing approach. More specifically, the null hypothesis H0: γ=0, postulates the presence of a unit root, in that the time series is non-stationary in behavior similar to that of a random walk. Rejection of the null hypothesis, typically through demonstration by the statistical significance of a negative value for the test statistic, is taken to suggest that the series is stationary and that it has a tendency to return towards the mean. The summation term $\sum_{i=1}^{k} \phi_i \Delta y_{t-i}$ includes lagged differences in the dependent variable in order to account for higher-order serial correlation in the residuals, making the test more robust against autocorrelated disturbances. The number of lags, represented as k, is determined through the use of information criteria, including the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC). The disturbance term ut represents the error term in the equation, which is assumed to be from a white noise process.

To investigate the presence of long-run equilibrium relationships among the variables, the Johansen (1988) maximum-likelihood cointegration test is applied, on the estimation of the rank of the matrix $\Pi = \alpha\beta'$ in the system:

$$\Delta x_t = \Pi x_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta x_{t-i} + \mu + \varepsilon_t, \quad (3),$$

where $\Delta x_t$ denotes the vector of first differences. The number of cointegrating vectors is assessed using the trace statistic, defined as:

$$\mathrm{Trace}(r) = -T \sum_{i=r+1}^{n} \ln(1 - \lambda_i). \quad (4),$$

where T is the number of usable observations, and $\lambda_i$ are the estimated eigenvalues ranked in descending order. Each $\lambda_i$ corresponds to a potential cointegrating vector, with larger eigenvalues indicating stronger long-run relationships. The trace statistic tests the null hypothesis that there are at most r cointegrating vectors against the alternative of more than r. The decision to reject or accept the null is based on critical values derived from the asymptotic distribution of the test, which

depends on the number of variables and the presence of deterministic components in the system.

Finally, to investigate the presence of structural instability in the relationship between real GDP growth and its financial determinants, the analysis employs the Bai–Perron multiple breakpoint test (Bai & Perron, 1998; 2003), which allows for the endogenous identification of multiple structural breaks in a linear regression framework by estimating break dates that minimize the residual sum of squares, subject to a trimming parameter and a maximum number of allowed breaks. The test compares alternative specifications based on global minimization of information criteria, specifically, the Schwarz Criterion (SC) and the LWZ Criterion, to determine the optimal number of breaks. Break dates $T_j$ are estimated as:

$$\min_{\beta_j T_j} \sum_{j=0}^{m} \sum_{t=T_j+1}^{T_{j+1}} \left(y_t - Z'_t \beta_j\right)^2 \qquad (5),$$

with the above the expression minimizing the segmented sum of squared residuals across m+1regimes, where $\beta_j$ denotes the regime–specific coefficient vector and $Z_t$ the corresponding regressors.

**Results**

Given the OLS regression results, initially is observed that **coefficient of the Greek–German 10-year sovereign bond spread (SPREAD)** is negative and statistically significant ($\beta_1 = -0.005$, $t = -4.337$, $p < 0.001$), indicating that a 100-basis-point increase in the spread is associated with a **0.5% reduction in annual real GDP growth**, a result that underscores the role of sovereign risk in constraining macroeconomic performance, particularly in financially vulnerable economies. Higher spreads reflect increased borrowing costs and reduced investor confidence, which may impair credit availability, dampen private investment, and depress domestic demand. The finding substantiates the hypothesis that sovereign risk premia act as an independent transmission channel affecting real economic activity, especially during periods of fiscal distress and external funding uncertainty.

The **public debt-to-GDP ratio (DEBT)** also exerts a **negative and statistically significant** influence on output growth ($\beta_2 = -0.070$, $p < 0.001$), suggesting that a 10-percentage-point increase in the debt ratio leads to a **0.7% decline in annual growth**. The estimate is consistent with the debt-overhang hypothesis, which posits that excessive public indebtedness hampers growth by raising risk premiums, displacing private sector borrowing, and reducing the government's ability to implement counter-cyclical fiscal policies, aligning with prior empirical findings that identify a nonlinear and threshold-sensitive relationship between high debt levels and subdued growth performance (Pegkas, 2019; Fatás et al., 2019).

Furthermore, **residual diagnostic tests** indicate that the OLS specification satisfies the basic assumptions of classical linear regression. The **Breusch–Godfrey LM statistic which equals to 2.224 (p = 0.328)** fails to reject the null hypothesis of no serial correlation,

suggesting that the residuals are not significantly autocorrelated. Similarly, the **Breusch–Pagan–Godfrey (BPG) test for heteroskedasticity** yields a value of 4.628 ($p$ = 0.098), indicating no strong evidence of heteroskedasticity at the 5% level, although marginal significance at the 10% level suggests that heteroskedasticity-robust standard errors may still be considered for cautious inference.

*Table 1: OLS regression estimation and residual diagnostics*

| Variable | Coefficient | t | p |
|---|---|---|---|
| Constant | 15.534 | 4.051 | <0.001 |
| SPREAD | -0.005 | -4.337 | <0.001 |
| DEBT | -0.070 | -3.387 | <0.001 |
| $R^2$ | | 0.338 | |
| F (p) | | 9.480 (<0.001) | |
| LM statistic | | 2.224 (0.328) | |
| BPG statistic | | 4.628 (0.098) | |

*Source*: Author's calculations (2025)

The Augmented Dickey–Fuller (ADF) unit root test results provide statistical confirmation of the integration properties of the variables used in the baseline model. Overall, the findings indicate that all three variables are integrated I(1), justifying the use of cointegration techniques in the subsequent stages of analysis. For GDP growth, the ADF statistic at levels is –2.816 ($p$ = 0.058), indicating non-stationarity at the 5% level. Upon first differencing, the test statistic improves markedly to –8.761 with a $p$-value less than 0.001, confirming stationarity. The bond spread variable also fails the stationarity test in levels (ADF = –1.676, $p$ = 0.435), but becomes stationary when differenced once (ADF = –5.023, $p$ < 0.001). Likewise, the debt-to-GDP ratio (DEBTGDP) exhibits a non-stationary process in levels (ADF = –1.841, $p$ = 0.356) and achieves stationarity after first differencing (ADF = –5.536, $p$ < 0.001).

*Table 2: Unit root tests*

| Variable | Level / First Difference | ADF Test Statistic | p* | Decision |
|---|---|---|---|---|
| GDPG | Level | –2.816 | 0.058 | Non-stationary |
| | First difference | –8.761 | <0.001 | Stationary |
| SPREAD | Level | –1.676 | 0.435 | Non-stationary |
| | First difference | –5.023 | <0.001 | Stationary |
| DEBT | Level | –1.841 | 0.356 | Non-stationary |
| | First difference | –5.536 | <0.001 | Stationary |

*Source*: Author's calculations (2025)

*Note:* * Test critical values based on MacKinnon (1996) one-sided p-values: **–3.510** at the 1% level, **–2.896** at the 5% level, and **–2.585** at the 10% level

The results of the Johansen cointegration test, based on the trace statistic, provide no empirical support for the existence of a statistically significant long-run equilibrium relationship among real GDP growth, the Greek–German bond spread and the public debt-to-GDP ratio, as for each hypothesized rank, the trace statistics fall short of the

corresponding 5% critical values, and the associated *p*-values remain above conventional thresholds, leading to a failure to reject the null hypothesis of no cointegration.

From an economic standpoint, this outcome indicates that while the three variables may display short-term co-movements and transient interactions, they do not exhibit a stable, long-term co-integrating vector and thus there is no evidence that the examined variables adjust toward a common equilibrium path over time. The absence of cointegration implies that the influence of sovereign risk premia and public indebtedness on Greek economic growth is predominantly of a short-run nature, without constituting a persistent structural linkage.

*Table 3: Johansen cointegration test*

| **Hypothesized No. of Cointegrating Equations** | **Trace Statistic** | **p*** | **Decision** |
|---|---|---|---|
| None | 21.306 | 0.251 | Do not reject $H_0$ |
| At most 1 | 7.552 | 0.421 | Do not reject $H_0$ |
| At most 2 | 2.190 | 0.173 | Do not reject $H_0$ |

*Source*: Author's calculations (2025)

*Note*: *MacKinnon-Haug-Michelis (1999) p-values

The Bai–Perron multiple breakpoint test identifies a structural break in 2010, a date that aligns with the onset of the Greek sovereign debt crisis and the country's subsequent entry into formal economic adjustment programs, as both the Schwarz Criterion (SC = 2.661) and the LWZ Criterion (equal to 2.810) attain their minimum values under the one-break specification.

*Table 4: Bai–Perron breakpoint test*

| **Number of breaks** | **Schwarz Criterion** | **LWZ Criterion** | **Estimated break dates** |
|---|---|---|---|
| 0 | 2.810 | 3.168 | – |
| 1 | 2.661* | 2.810* | 2010 |
| 2 | 2.758 | 3.340 | 2007, 2014 |
| 3 | 3.094 | 3.919 | 1991, 2010, 2014 |
| 4 | 3.437 | 4.531 | 1991, 2000, 2010, 2017 |
| 5 | 3.798 | 5.198 | 1991, 1998, 2004, 2010, 2017 |

*Source*: Author's calculations (2025)

*Note*: * Minimum information criterion values

The regression results incorporating a structural break in 2010 reveal a clear and statistically robust divergence in the relationship between Greek real GDP growth and its financial determinants across two distinct subperiods, the pre-bailout phase (1985–2009) and the post-bailout phase (2010–2024). In the pre-crisis regime, both explanatory variables exert weak and statistically insignificant effects on output growth. The coefficient for SPREAD is estimated at –0.002 (p = 0.207), while DEBT is equal to –0.012 (p = 0.717).

Hence in the absence of overt market stress and under the institutional shield of euro area convergence, financial conditions did not exert meaningful constraints on macroeconomic performance, and thus sovereign risk premia remained subdued and debt accumulation was not immediately perceived as detrimental to growth.

By contrast, the post-2010 subperiod reveals a pronounced shift in the impact of financial variables on output growth. The coefficient for SPREAD increases in magnitude to –0.005 ($p = 0.002$), indicating a statistically and economically significant link between rising risk premia and lower growth. Even more substantially, the coefficient for DEBT rises to –0.111 ($p < 0.001$), signifying that increases in public debt were associated with a powerful negative impact on growth. The shift in the magnitude and significance of the explanatory variables coefficients confirms that the post-crisis environment constituted a structural break, not only statistically but economically. Prior to 2010, the Greek economy operated under conditions of market leniency and institutional insulation, which decoupled financial indicators from short-run output dynamics. Post-crisis, however, financial variables emerged as central transmission channels, actively shaping the growth trajectory. Sovereign spreads and debt levels transitioned from background indicators of fiscal stress to direct constraints on macroeconomic performance.

*Table 5: Least Squares results with breaks*

| Period | Variable | Coefficient | t-Statistic | p |
|---|---|---|---|---|
| 1985–2009 (Pre-bailout) | Constant | 6.106 | 1.048 | 0.302 |
| | SPREAD | –0.002 | –1.286 | 0.207 |
| | DEBT | –0.012 | –0.365 | 0.717 |
| 2010–2024 (Post- bailout) | Constant | 4.594 | 3.278 | 0.001 |
| | SPREAD | –0.005 | –3.368 | 0.002 |
| | DEBTG | –0.111 | –7.316 | <0.001 |

*Source*: Author's calculations (2025)

**Conclusion and Recommendations**

The results presented provided robust insights into how financial stress has translated into significant growth penalties, especially in the wake of Greece's sovereign debt crisis. While sovereign spreads and debt levels exhibited weak or insignificant effects on output growth prior to the crisis, the post-2010 regime is marked by a stark and statistically significant amplification of their negative impact, thereby confirming the presence of a structural break that redefined the economic consequences of financial variables. This transition reflects the shift from a context of institutional insulation under the euro area's initial phase of convergence to an environment of heightened market scrutiny and conditionality-induced fiscal retrenchment. In the post-bailout period increase in the sovereign spread and public debt has exerted a pronounced contractionary effect on GDP growth, reinforcing the argument that financial variables have evolved into binding

constraints on the Greek economy. Critically, the absence of cointegration, suggests that the interplay between debt, spreads, and output growth is not governed by a stable long-term equilibrium mechanism, a finding that implies that the observed relationships are predominantly short-run and context-dependent, influenced by occasional financial stress and policy interventions, rather than being embedded in a persistent structural adjustment path.

In light of these findings, several policy recommendations emerge. First, fiscal policy frameworks in highly indebted economies such as Greece must prioritize cyclical sensitivity over rigid consolidation targets, especially during downturns. Procyclical fiscal tightening in periods of economic distress not only undermines short-term recovery but may also erode long-term growth potential by amplifying financial fragility and reducing the fiscal space necessary for counter-cyclical measures. Secondly, the role of sovereign bond markets in amplifying macroeconomic shocks should prompt policymakers to consider mechanisms that stabilize expectations and decouple risk premia from short-run output fluctuations. Instruments such as precautionary credit lines, sovereign bond purchase facilities, and enhanced transparency in fiscal reporting could play a stabilizing role. Thirdly, given the demonstrated short-run but powerful effects of bond spreads on growth, it is imperative to cultivate institutional credibility and investor confidence through structural reforms that enhance fiscal governance, streamline public investment, and address contingent liabilities. Lastly, policy coordination at the European level remains vital, as in cases where market access is compromised, bailout programs must be designed with greater sensitivity to growth dynamics, avoiding abrupt fiscal adjustments and allowing for adequate time horizons that foster economic recovery without undermining long-run debt sustainability. Ultimately, Greece's experience illustrates the dangers of underestimating the feedback loops between financial stress and real economic activity, and the necessity of designing macroeconomic strategies that are adaptive to structural breaks, forward-looking in fiscal design, and cognizant of the financial channels through which crises propagate.

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# THE EFFECTS OF RESERVE DUTY AFTER WAR ON ISRAELI SOCIETY: IMPACTS ON SOLDIERS, COMPANIES, AND COOPERATIVES

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***Abstract***

*The security situation in Israel is closely tied to its social structure, largely due to its mandatory military reserve duty system.*

*The Israeli army system requires all citizens to serve as reservists when the country is at war or engaged in primary military operations.*

*The effects of military service extend deeply into all aspects of society, including personal lives, professional environments, economic systems, legal frameworks, and social structures.*

*The 2023-2024 conflicts and "Operation Swords of Iron" provide modern insights into how reserve duty affects society through its impact on mental health, economic stability, professional development, legal systems, and social he researches offers an extensive evaluation of reserve duty effects on Israeli society through three main areas which examine personal and professional changes in soldiers and business impacts and workplace readjustment for reservists.*

*The analysis examines how reserve duty affects soldiers through psychological strain and emotional implications, professional challenges, legal systems, financial effects, and cooperative and social support systems for reservists.*

*The analysis combines recent case studies with legislative changes and best practices from multiple contemporary sources, official reports, and personal accounts to provide an updated and how reality sometimes diverges from the law.*

***Keywords****: reserved soldier; impacts; iron swords war; society; cooperatives*

***JEL Codes****: A13 Relation of Economics to Social Values*

## The Psychological and Emotional Impacts on Reserve Soldiers: Trauma, PTSD, and Ongoing Stress

The psychological effects of returning from active duty become extensive for Israeli reservists who have participated in intense military operations.

Research alongside current media coverage shows that a major number of reserve soldiers develop trauma symptoms and post-traumatic stress disorder (PTSD) and ongoing anxiety after their return from duty. The 2024 survey found that eight percent of IDF

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reservists showed severe PTSD symptoms following their recent military service, which represents the most significant number in ten years.

The symptoms of PTSD in reservists include sleep disturbances, heightened alertness, recurring distressing memories, depression, and mood swings.

The symptoms of reservists include work and home relationship problems, concentration issues, mood changes, and emotional instability.

The military reports show that severe trauma cases have been documented during major mobilization operations.

The IDF has started fast-track discharge procedures and broadened mental health services because acute stress reactions and dissociation have become prevalent among soldiers.

The condition of PTSD exists alongside two additional widespread problems, which include general stress and emotional exhaustion.

The fast transition from combat zones that emphasize survival instincts and military rules to civilian life creates confusion and feelings of social detachment in veterans.

The return of combat veterans leads to emotional shutdown and increased irritability, which Israeli military personnel call "military hangover" The emotional readjustment process becomes more challenging for reservists because they feel disconnected from their civilian friends, who lack understanding of their military experiences.

**The Emotional Toll on Families and Social Networks**

The military service of reservists has widespread effects that impact not only their family members but also their entire social circle.

The reserve mobilization period creates substantial stress on Israeli family units, as it requires members to assume new responsibilities and cope with financial instability.

The return of reservists to family life brings both comfort and tension because their war- related emotional distress, including unmanaged trauma and grief for lost comrades, and survivors' feelings of guilt, tend to affect their home environment.

The emotional state of parents can change suddenly after military service, which creates worry among their children who live in the same household.

The social connections of individuals tend to break apart, while some people find support through mutual understanding, while others experience social detachment due to miscommunication.

**Societal Recognition of Psychological Injury**

The Israeli public now discusses the need for proper psychological injury recognition and treatment and stigma reduction for military reservists.

The State has established hotlines and on-base counseling services through the IDF and Ministry of Defense for mental health support, yet reservists avoid seeking help because they fear being seen as weak and worry about professional and social consequences.

The situation becomes more difficult for people working in tech and high-stress fields because they face intense performance expectations and strong social discrimination against mental health issues.

The nonprofit organizations Nevut and Ogen operate peer-support groups and therapy funding programs, but their services do not reach all reservists who need help, especially those with severe or persistent trauma.

**The Adjustment Period: From War to Routine Civilian Life: The Challenge of Re-Entry**

The transition from intense military operations to regular civilian activities stands as the primary challenge that Israeli reservists encounter after their service.

The transition from military life to civilian life can be challenging for soldiers who have experienced structured command systems, urgent communication, and life-threatening situations.

The readjustment process known as "reverse culture shock" affects reservists for extended periods ranging from weeks to months after their deployment.

The combat environment trains soldiers to react strongly to normal sounds and unexpected occurrences because they have learned to stay alert in dangerous situations.

The typical Israeli return experience begins with a period of disruption, characterized by physical tiredness, emotional numbness, poor focus, and unfulfilling experiences in activities that once brought joy.

**Long-Term Reintegration: The Civilian-Reservist "Double Identity"**

The process of long-term adjustment requires people to constantly manage their dual identity by uniting their military service pride with civilian life experiences.

The transition back to civilian life creates a lasting social divide between reservists and their non-serving friends, resulting in communication difficulties and differing life perspectives.

A returnee based in Jerusalem in early 2024 described the experience as one of moving between two separate realities.

Military values, including discipline, teamwork, and resilience skills gained during service, continue to benefit some veterans who use them to guide their professional decisions, personal relationships, and community involvement.

The extent of institutional backing, together with social support, determines how well someone will transition back to civilian life.

Organizations that understand the comprehensive nature of returning to civilian life, encompassing practical, psychological, and communal aspects, create better conditions for adjustment, which decreases the chances of social exclusion. The absence of support leads to worsening feelings of loneliness and anger, which negatively affect both mental wellness and work performance.

**Career Disruption and Missed Professional Opportunities: Interrupted Career Trajectories**

The Israeli labor market faces challenges when workers are required to perform reserve duty for extended periods, as this disrupts their career development and progression. Senior professionals and managers, along with key personnel in high-tech, finance, healthcare, and education sectors, face career disruptions when they serve extended reserve duty because they miss important career milestones and struggle to maintain client and stakeholder trust.

The process of returning to work after reserve duty requires reservists to learn new information about regulations and technology and work harder to regain their previous productivity levels.

The absence of reservist employees leads to permanent changes in workplace organizational structures because temporary staff members handle their responsibilities.

The absence of reservist employees leads junior staff members and substitutes to take on new responsibilities.

Still, their return to work creates challenges for team integration, and they must reposition themselves within the organization.

**Discrimination and Missed Opportunities**

The legal protections that exist do not prevent "miluimnikim" (reservists) from experiencing discrimination because some employers remain hesitant about losing their skilled workers during unpredictable reserve duty periods.

The Equal Opportunities Commission of Israel has received more complaints from reservists and their spouses who claim their military service duties result in discriminatory treatment at work and promotion denial.

The fear of project delays causes management teams in time-sensitive sectors, such as tech startups and critical infrastructure providers, to avoid hiring reservists because they worry about work interruptions.

The practice of "opportunity cost" results in lost chances to apply for preferred positions, internal positions, and short-term contracts, which accumulate over multiple years of military service.

The absence of reservists from work results in lost business opportunities for freelancers and contractors, as their clients often choose to work with suppliers who maintain constant availability.

**Professional and Skill-Based Gains**

The military service of reservists teaches valuable skills to many people, including leadership abilities, crisis management, and teamwork under stressful conditions, which modern employers now understand as beneficial qualifications.

The defense technology sector, along with emergency management organizations, actively recruits former reservists because they bring distinctive skills and viewpoints to the table.

The Israeli society benefits from the "reservist mindset," which combines adaptability with determination and resilience to drive entrepreneurial growth and innovation.

### Personal Growth and Leadership Skills Gained During Service

*Transformative Experiences*

The experience of reserve duty after war brings significant negative impacts, yet most Israelis describe it as a life-changing experience that affects their personal lives and professional development.

The military environment serves as a testing ground for leaders to develop their ability to make fast decisions while working together as a team, which later helps them succeed in civilian management and public service.

The Israeli business culture has developed its core values of initiative, practical problem- solving, and direct communication due to its military traditions.

The experience of facing dangerous situations during military service helps reservists develop stronger self-assurance and better emotional strength.

The experience of working with people from different social backgrounds, ethnic origins, and political beliefs helps build teamwork skills and expands individual perspectives.

National defense pride and sense of honor remain vital sources of personal fulfillment for numerous individuals who served in the military.

### Civic Engagement and Social Capital

The common experience of reserve duty service creates strong social connections between Israeli citizens.

The practice of honoring “miluimnikim” creates stronger social ties between people, which leads to increased civic participation and political activism.

After their military service, many reservists take on leadership positions in civil society organizations and advocacy groups to pursue social and political objectives. The number of disaster response, public health, and technological innovation initiatives led by reservists continues to grow as evidence of this trend.

### Financial Implications for Reserve Soldiers Income Loss and Financial Strain

The legal system of Israel provides employment protection and minimum wage guarantees for reservists, yet individual members of the reserve forces experience monetary impacts directly and indirectly.

The state and employers provide salary replacement to salaried workers, but these payments often experience long delays due to administrative issues that can extend for several months. The absence of overtime, bonus, and performance-based incentive coverage results in income shortfalls for employees who receive these benefits, especially those working in sales, consulting, or project-based positions.

The compensation systems for self-employed workers and gig economy employees remain inadequate because they must prove lost contracts, and their income varies from month to month.

The 2023-2024 reserve mobilizations caused thousands of freelancers to face immediate financial difficulties and permanent business harm because their clients chose to work with companies that maintained continuous operations.

The emergency state grants and revolving funds operated by Ogen and other organizations help reservists, but the application process remains complicated, and the support levels remain insufficient.

**Access to Benefits and Compensation Reforms**

The public's demand for improved reservist benefits following recent conflicts has led to significant government funding for their enhancement.

The Israeli government dedicated more than $800 million to support active reservists and their families through expanded compensation packages and tax relief in 2023 and 2024, following Operation Swords of Iron. The new policies provided financial assistance for housing costs, child care expenses, and professional development benefits to reservists.

Media reports indicate that reservists face lengthy delays in receiving their compensation, while some members are abandoning their reserve duties due to mounting financial difficulties.

The system faces ongoing problems with access and eligibility because it disproportionately affects minority groups, self-employed individuals, and workers in entry-level positions.

**Financial Implications for Companies and Cooperatives Staff Shortages and Business Disruption**

The extended deployment of reservists in military service generates immediate operational problems for businesses operating in Israel. The 2023-2024 period revealed that more than 70% of technology companies encountered operational problems due to extensive reservist deployments, resulting in missed project targets, disrupted investor partnerships, and delayed product launches. The sectors that depend heavily on reservists, including cybersecurity, hi- tech, and medical technology, experienced specific challenges during this time.

The temporary work distribution, short-term contract hiring, and suspension of non-essential operations created major challenges for organizational resource management.

The loss of essential personnel at cooperatives and small businesses leads to significant operational problems, as these organizations rely heavily on their staff to maintain delivery schedules, provide services, and keep operations running smoothly.

Employee-owned cooperatives must decide between their business requirements and their legal and ethical duty to assist reservist members.

**Direct and Indirect Costs**

The financial consequences reach further than the amount of lost work hours.

Organizations must pay replacement staff overtime wages, recruit temporary workers, and follow multiple rules about reservist compensation.

The process of state reimbursement and legal protection for employees leads to increased administrative expenses for HR and finance departments.

Large organizations face substantial legal and advisory expenses when they need to follow new extension orders and changing labor regulations. The costs that are difficult to measure include lost business relationships, negative impact on company reputation, and decreased employee motivation. Business leaders, together with sectoral organizations, have mentioned in multiple media reports and government documents that the missed opportunities, delayed innovations, and suspended strategic partnerships represent substantial opportunity costs.

**Long-Term Effects: Innovation and Talent Pipeline**

The repeated shortage of skilled workers among young and talented individuals threatens to diminish the future strength of Israel's talent supply system, particularly in innovative sectors. International investors have shown hesitation due to concerns about leadership stability during periods of large-scale military mobilization.

Yet, they also view Israeli society's adaptability as a sign of its strong resilience.

Corporate Responsibility and Morale

The Duty of Support: Israeli Social Norms and Expectations

The Israeli workforce faces strong social and ethical demands from employers to actively demonstrate support for reservists who return from military duty after “Operation Swords of Iron.

” The national identity of Israel strongly emphasizes military service, so businesses that show a lack of support or discrimination toward veterans will encounter public disapproval, social condemnation, and potential consumer boycotts.

The media showcases companies that support returning veterans through extended paid leave, recognition events, and reintegration programs.

Still, employers who neglect their responsibilities face both public scorn and legal consequences.

**Internal Morale and Social Capital**

Internal morale receives its strongest boost from visible support from reservists, which creates trust and enhances unity between companies and cooperatives.

The 2023 survey results showed that organizations that support their reservist employees through friendly policies achieve better employee commitment, lower staff departure rates, and enhanced job satisfaction among their non-reservist staff members.

The lack of sufficient support from management leads to growing employee dissatisfaction and mistrust, which affects all staff members, including reservists. The employee-owned structure of cooperatives enables them to create advanced support systems that address both emotional and practical needs of their members.

The organization provides peer counseling services, flexible work schedules, and shared leave benefits through collective funding of these programs.

The support system enables returnees to meet their emotional requirements while maintaining unity among all team members.

**Workplace Reputation and Respect for Reservists Social Status and Professional Recognition**

Reservists returning to the workplace often experience a complex mixture of admiration, sympathy, and pressure.

Traditionally, reservists have occupied a position of respect seen as embodying national values of sacrifice, courage, and solidarity.

Many companies publicly celebrate the return of their "miluimnikim" through internal communications, ceremonies, or bonuses, reinforcing their status within the organization.

However, there are growing reports of “miluim fatigue,” particularly after protracted or frequent mobilizations, with some coworkers (especially those who shoulder additional work) expressing resentment or, in extreme cases, negative attitudes toward returning colleagues. In rare but notable circumstances, reservists complain of facing subtle forms of marginalization or being excluded from key projects upon return, highlighting the need for conscious cultural management within organizations.

**Balancing Admiration and Integration**

The balancing act required is delicate: while honoring the service and resilience of returning reservists, companies must also ensure a smooth reintegration process, avoid stigmatization, and provide equitable treatment for all staff.

This entails clear communication, well-developed reintegration programs, and a commitment to anti-discrimination practices, as well as recognition of the burdens carried on both sides during the reservist’s absence.

**Legal Protections under Israeli Labor Law The Existing Legal Framework**

The industrialized world recognizes Israel as having the most detailed system of labor laws, which protect its reservists.

The Reserve Service Law from 1959 serves as the main legal foundation which requires:

The law requires employers to restore their reservist employees to their previous work roles or equivalent positions after their military service ends.

The law protects military personnel from workplace discrimination and prohibits any form of dismissal because of their service.

The law ensures that all employment benefits will continue without interruption, including seniority accumulation, vacation time, and social benefits entitlements. The 2023-2024 emergency orders expanded the protection against discrimination to include spouses and dependents of reservists who receive military calls.

The law requires employers to immediately welcome back their returning reservists, providing necessary training updates and ensuring access to social and emotional support services.

**Enforcement Challenges**

The existing legal framework provides strong protection, yet its implementation faces significant obstacles in real-world settings.

Many reservists face problems with their reinstatement process because they experience delayed returns to work and experience career setbacks through seniority loss and exclusion from important projects and promotion opportunities.

The Equal Opportunities Commission received a record number of complaints during 2024 because workers experienced rising discrimination at their workplaces because of their reserve military service.

Multiple elements make it hard to enforce the law: Employers use various business-related reasons to explain their employment decisions, which makes it difficult to prove discrimination cases.

The lengthy and confrontational nature of complaint procedures acts as a discouragement for people to file reports. Small businesses and cooperatives face challenges in fulfilling legal requirements while managing their existing financial obligations.

The combination of publicized court cases and Nevut and Histadrut organization advocacy has led to minor progress, but the system requires better complaint handling systems and enhanced penalties for non-compliance.

**Recent Legislative Developments**

The 2024 amendments introduced significant enhancements to job protection, including faster reinstatement procedures, improved compensation systems, and clearer employer duties.

Digital platforms now enable reservists to track their service records and initiate claims or complaints through an easy-to-use system, demonstrating a growing trend of workplace transparency and employee rights.

### The Role of Cooperatives and Social Inclusion Cooperatives: Collective Support Mechanisms

The social values of Israeli society are reflected in economic operations through the establishment of employee-owned cooperatives.

These organizations serve as substitute family units for reservists because they offer employment stability along with support networks, which standard corporate systems lack. The following best practices exist within Israeli cooperative organizations:

The teams at Israeli cooperatives plan ahead for reservist absences through project management systems that reduce operational disruptions.

The organization maintains shared leave banks and collective funds which provide financial assistance to members who need support for themselves or their family members.

The organization runs peer support groups and implements programs that help team members reintegrate with each other.

The cooperative uses rotating leadership structures to maintain member authority and status when personnel return from their duties.

The implemented mechanisms protect reservists from severe career and financial consequences while building social unity, which positions the cooperative as an example for corporate and public sector policies.

### Broader Social Networks and NGOs

Multiple nonprofit organizations and advocacy groups now provide parallel support through financial aid, legal advocacy, vocational guidance, psychological assistance, and community reintegration programs.

The organizations Ogen and Nevut operate high-profile programs that use revolving funds and peer counseling services and legal hotlines to address essential needs, which state and employer support systems fail to meet.

The large number of new initiatives following the 2023-2024 conflicts demonstrates both the extensive nature of the problem and the enduring strength of Israeli civil society.

### Best Practices for Company Reintegration of Reservists Pre-Deployment Preparation

Multiple leading Israeli businesses have implemented formal procedures for handling employee reserve duty obligations. The current research and Israeli HR manuals show that organizations should implement the following pre-deployment practices:

Leaders must inform employees about their upcoming duties and expected duration through open communication channels.

The organization needs to provide transparent workflow modifications through temporary duty reassignment for affected staff members.

The organization must inform all clients and business partners about operational changes and their corresponding responses.

The organization should establish specific contact points for family members of employees who need assistance.

**During Absence: Maintaining Connection**

Staying connected with reservists during their absence via periodic updates, expressions of solidarity, or inclusion in remote team activities eases the sense of alienation. It affirms the individual's importance to the team. Some organizations extend small gestures such as care packages, veterans' newsletters, or invitations to company events, reinforcing the employee's continued role within the organization.

**Post-Return: Reintegration Programs**

The following best practices should be implemented when reservists return to their duties: The process of structured reintegration interviews serves two purposes by allowing reservists to share their experiences while helping to determine their particular requirements.

The organization should implement temporary workload adjustments and gradual duty return schedules because reservists need time to readjust physically and mentally.

The organization should implement peer mentoring programs and manager training sessions, which teach staff members and their supervisors about the reservist's military experience.

The organization should restore all lost benefits and bonuses and seniority status immediately, while also providing public recognition through awards, when possible, to the reservist. Organizations that employ large numbers of workers and cooperatives provide their reservists with free counseling services and flexible work arrangements during their first return period, and legal and financial support access.

These support methods benefit both reservists and enhance both workplace unity and public image of the organization.

**Case Studies: Companies Supporting Reservists High-Tech Sector: Navigating Mass Absence**

The recent war-induced reserve mobilizations have not affected the Israeli high-tech sector because of its young professional workforce and fast-paced operations.

The companies Wix and Check Point and Mobileye used cross-training programs and "buddy systems" and work-from-home flexibility to maintain project continuity during the disruption. The companies organized welcome back events for soldiers who returned to work while providing on-site counseling services and extended post-deployment leave for mental health support.

**Cooperatives: Employee-Driven Solidarity**

A number of Israeli cooperatives have distinguished themselves through innovative solidarity mechanisms. The AMI cooperative, for example, established a communal hardship fund to support members and their immediate families during extended deployments, covering financial gaps, and offering flexible hours or paid leave beyond legal requirements.

Peer reintegration sessions and storytelling circles have helped normalize the psychological burdens many reservists face.

**Large Corporations: Policy-Driven Support**

Companies that possess sufficient resources have created structured support systems for reservists through HR managers who handle miluimnikim cases and provide immediate salary payments when state compensation is delayed and extended family leave benefits.

Certain companies that want to present themselves as socially responsible use their support for reservists as a branding tool to attract new employees and customers through their national solidarity message.

*Table no .1 : Summary of Key Impacts Across Soldiers, Companies, and Cooperatives*

| Psychological Impact | Trauma, PTSD, stress, and adjustment issues | Staff morale issues, reintegration needs | Peer support, shared emotional burden |
|---|---|---|---|
| Career Impact | Missed opportunities, discrimination risk | Productivity loss, workflow disruption | Flexible roles, minimized status loss |
| Financial Implications | Lost income, compensation delays | Over time, replacement costs, legal risk | Shared funds, collective cost absorption |
| Legal Protections | Job security guarantees, anti-discrimination | Compliance with the reservist law, admin burden | High compliance, collaborative adaptation |
| Workplace Support | Recognition, reintegration assistance | Morale programs, public acknowledgment | Peer support, flexible leave policies |
| Social Inclusion | Civic engagement, social capital growth | Reputation enhancement or loss | Strong community bonds, social safety net |
| Enforcement Challenges | Difficult complaint process, subtle bias | Legal exposure, resource constraints | Peer mediation, informal resolution |

This table synthesizes the major areas of impact and illustrates how the consequences of reserve duty post-war manifest for individuals and organizations across Israeli society.

For the reservist, psychological adjustment and career disruption are aligned with broader concerns around recognition and financial security.

Companies bear the immediate costs of disruption and legal compliance, yet they also have opportunities to enhance morale and public reputation through responsible policies.

Cooperatives, rooted in employee solidarity and mutual aid, represent the most resilient and community-focused models of support, often excelling where traditional companies struggle.

**Conclusion: The Ongoing Social Contract**

The transition from military reservists faces multiple difficulties when they return to civilian life because they must deal with mental health issues and work-related problems and unstable financial situations.

The military experience enables reservists to develop essential skills in personal growth, social connections, and leadership, which enhance the overall strength of Israeli civil society. The legal system has established additional rights for reservists but the implementation process shows ongoing challenges which affect reservists who work in unstable financial situations and organizations that fail to understand reserve duty requirements.

Mass mobilizations create operational challenges for businesses and cooperatives which also test their corporate values and their social responsibility and employee team spirit.

Organizations that actively support their reservist employees build better reputations and maintain higher employee loyalty, which leads to better organizational results.

The readjustment period for returning employees presents both difficulties and possibilities for workplaces to prove their commitment through genuine support and understanding, while reservists bring their acquired abilities to benefit their teams and the entire community.

The future development of Israeli society requires ongoing creative solutions for distributing the security burden between those who serve and those who do not. The current situation presents extensive possibilities for social development, civic participation, and increased social unity.

The collective efforts of people, organizations, and state institutions, according to Israeli experience, will preserve the national strength of reservists and society.

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# SCIENCE AND TECHNOLOGY POLICY ON THE EU IN THE AREA ON RESEARCH INFRASTRUCTURE

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***Abstract***

*In the European Union, the strategy for the development of research infrastructure is particularly heavily borrowed from global infrastructure. The modern research infrastructure is:*

*- the basis for conducting avantgarde fundamental and applied research in various scientific and technological fields;*

*- a mechanism for storing, exchanging and sharing knowledge, imparting knowledge to young people;*

*- the tool is expanded based on knowledge and technological capabilities ("know-how") for the industrial sector;*

*- the key factor for the formation of the Internet on a unified research space through the structure of the scientific community, the creation of a unique communication environment.*

***Keywords****: science policy, technology policy, research infrastructure, national map for development, innovation process, European framework and programs*

***JEL Codes:*** *L23;L25;L28*

## Introduction

The European Union (EU) science and technology policy plays a key role in achieving a competitive, sustainable and innovative European economy.

Research infrastructure – the network of high-tech facilities, laboratories, digital platforms and scientific networks – is a key pillar of the European Research Area (ERA). It supports cross-border collaboration between researchers, facilitates knowledge exchange and stimulates innovation in strategic areas such as artificial intelligence, energy efficiency, biotechnology and climate research.

This report aims to analyse the main principles, instruments and challenges of EU research infrastructure policy, presenting its current state, strategic priorities and development opportunities.

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**Research methodology**

The study is based on a qualitative analysis of EU regulatory and strategic documents, as well as secondary sources, including reports from the European Commission, the European Strategy Forum on Research Infrastructures (ESFRI), scientific publications and statistical data from Eurostat and Horizon Europe.

Methods used:

1. Desk review – review of key policies such as "Horizon Europe", "European Research Area Policy Agenda" and "ESFRI Roadmap";

2. Comparative analysis – assessment of different models for financing and managing infrastructures in the Member States;

3. Good practice analysis – identification of successful examples of transnational scientific cooperation;

4. Interpretive approach – derivation of main trends and challenges in policy implementation.

**Analyses**

1. Policy framework and strategic objectives

The EU's science and technology policy is structured around the concept of a European Research Area (ERA), which aims at the free movement of knowledge, researchers and technologies. The Horizon Europe Program (2021-2027) provides over €95 billion for research and innovation, with a focus on open science, sustainable development and the digital transition.

ESFRI plays a central role in setting priorities and coordinating between Member States through its ESFRI roadmap, which includes over 40 strategic research infrastructures in different fields.

2. Funding and governance

The funding of research infrastructure is carried out through mixed models, including EU funds, national budgets and public-private partnerships.

Instruments such as Horizon Europe, the Cohesion Fund and the European Investment Bank support the uneven territorial distribution of scientific resources between more developed and less developed regions.

3. Challenges

- Insufficient integration of national policies into the pan-European framework;
- Limited mobility of researchers and differences in working conditions;
- Bureaucratic procedures and delays in project implementation;
- Insufficient digital infrastructure in some regions
- Need to strengthen cooperation with industry and business.

**Nature of European research infrastructures**

The term "Research infrastructures" refers to the objects, resources and related services used by the scientific community to conduct research in various fields of knowledge. Research infrastructures are of three types: distributed, co-located and virtual. In Europe, there are 132 distributed, 343 stand-alone and 59 virtual infrastructures. A striking example of a localized infrastructure of international importance is CERN - the largest nuclear physics laboratory. An example of an electronic (virtual) infrastructure is the GÉANT network, which facilitates collaboration between scientists through the exchange of knowledge, ideas and resources in remote access mode. The European Molecular Biology Laboratory is a distributed infrastructure (France, Germany, Italy and the United Kingdom).

The dedicated portal («European portal on research infrastructures services» ) contains detailed information on 625 Research Infrastructures (RIs) of European importance in various scientific fields.

European research infrastructures are distributed by thematic domains:

1. Biological and medical sciences (197)
2. Chemistry and materials sciences (161)
3. Earth and environmental sciences (189)
4. Engineering and energy (120)
5. Arts and humanities (70)
6. Information and communication technologies (111)
7. Physics, astronomy, astrophysics and mathematics (189)
8. Social sciences (73)

The distribution of infrastructures by country gives the following picture: Germany (96), Spain (69), France (50), Italy (29), United Kingdom (28), Netherlands (26), Hungary (25), Portugal (24), Austria (21).

The breakdown by category is as follows:

1. Settings (175)
2. Databases, data archives, repositories and collections (72)
3. Analytical instrumentation (58)
4. Databases (57)
5. Data centers for Earth, ocean, sea, drinking water and atmospheric data (50).

The European strategy in the given priority area is defined by the European Strategic Forum for Research Infrastructures (ESFRI). The European Strategic Forum for Research Infrastructures is a strategic instrument for the integration of Europe in the field of scientific research and strengthening its international prestige. Open access to quality research infrastructures based on competition helps to increase the quality of European science and attract the best scientists from all over the world to Europe.

The main mission of ESFRI is to maintain a coherent and strategic approach to European policy-making in the field of research infrastructures and to support many initiatives at different levels, leading to the effective use of research infrastructure development at European and international level.

ESFRI delegates are nominated by the Ministries of Science of the EU Member States and associated countries. Thematic committees usually include representatives of the European Commission. Programm committees are concerned with developing a common understanding of the various issues and a common strategy. This strategy aims to overcome the fragmentation of national policies in the given area and provide Europe with state-of-the-art research infrastructures, responding adequately to the rapid expansion of scientific frontiers, the development of technologies and their use.

Since its creation in 2002, ESFRI has achieved unique successes in unifying research infrastructures and enhancing their global relevance.

The first roadmap for the development of pan-European infrastructures was published in 2006. The first update of the roadmap was in 2008, then at the end of 2010, with a focus on energy, food and biology. The mandate of ESFRI was extended by the Council of Europe in December 2012. The Council of Europe confirmed the need to strengthen the partnership in the field of research infrastructures in order to respond to existing challenges and ensure the implementation of upcoming ESFRI projects and prioritized the infrastructure projects included in the roadmap. European Commission experts have been periodically evaluating the implementation of the roadmap for decades. The first report on the implementation of the roadmap was published in 2010.

The main elements of the European strategy in this priority area are: (Regulation (EU) 2021/819 of the European Parliament and of the Council of 20 May 2021 on the 28.5.2021), 28.5.2021)

1. The formation of a list of priority projects for new infrastructures with further approval of the given list by the European Parliament and the Council of Europe;

2. Development of existing infrastructure, as well as design and formation of new infrastructures of European importance;

3. Overcoming fragmentation, coherent development of European/national/regional infrastructures in different thematic areas;

4. Ensuring the widest access, both for European researchers and for scientists from third countries, to existing infrastructures in Europe;

5. Assistance in using the innovation potential of European infrastructures;

6. Formation of industrially-oriented infrastructures and their active involvement in the innovation process;

7. Active participation in the formation of global research infrastructure.

The European strategy in the field of research infrastructures is implemented through the projects of the European Framework Programmes. In the Seventh Framework Programme, 345 projects were funded under the priority area "Research Infrastructures". The European Investment Bank and the Structural Funds are also active sponsors.

**The European concept for the development of new research infrastructures**

The European concept for the development of new research infrastructures involves several stages ( Establishing the specific programme implementing Horizon Europe - the Framework Programme for Research and Innovation and repealing Decision 2013/743/EC, OJ L 167 I, 12.5.2021):

1st stage: Formation of a concept for the infrastructure, justification of its need and its inclusion in the roadmap of the European Strategic Forum for Research Infrastructures;

2nd stage: Preparatory phase (solving legal issues related to the creation of the infrastructure, management, long-term planning). Financing of the 2nd stage is usually carried out in the form of projects from the Seventh Framework Programme of the EU in the direction of "Research Infrastructures";

3rd stage: Formation of the infrastructure - phase of construction and deployment of the infrastructure (coordination of technical, legal, administrative and financial issues, signing of agreements between all interested parties);

4th stage: Testing and operation.

For the creation of a new infrastructure from the formation of concepts to its operation, 20-40 years are set.

In the European framework program «Horizon 2020» for the maintenance and development of 1000 research infrastructures, 2.478 billion euros are planned, and the following priorities are set:

- active support for fundamental and applied research. Further expansion of access of European scientists to existing research infrastructures in Europe (Transnational Access);
- Development of research infrastructures of European importance, formation of networks of infrastructures in individual fields of knowledge;
- Support of electronic infrastructures (e-infrastructures), creating a qualitatively new research environment;
- Development of policies in the context of the European Research Area and international cooperation, coordination of regional and national policies and programs;
- Creation of new infrastructures. Expansion of the roadmap at the expense of research infrastructures oriented to industry. Participation of industry experts in the development of new roadmaps for research infrastructures in Europe (within the framework of ESFRI);
- contribution to innovative developments, active interaction with industrial sectors, small and medium-sized enterprises;
- contribution to the process of scientific instrument making, participation in the development of standards and certifications, high accessibility to the infrastructure for industrial users.

The process of updating the European Research Infrastructures Roadmap was launched at the conference in Trieste (Italy) on 24-25 September 2014. The event, held under the Italian Presidency of the European Union, has generated numerous discussions at

national and European level on the need to create an integrated European system of the best and most sought-after research infrastructures and to ensure their efficient and long-term sustainable exploitation. The updated roadmap was expected in 2016. It provided an in-depth analysis of the European research landscape across all scientific fields, a comprehensive picture of existing infrastructures of European relevance, including national/regional infrastructures that provide open access to all researchers, and a list of 25 successful projects with justifications for their selection. The European Strategy Forum on Research Infrastructures launched a call for project proposals for the 2016 Roadmap during the Trieste conference. Applications are assessed in accordance with the scientific feasibility of the proposed infrastructure. Another important criterion for inclusion in the roadmap is the sufficient maturity of the infrastructure. Detailed information on the roadmap renewal process and the rules for submitting project applications is available on the website: (htt)

Global infrastructures occupy a special place in the European strategy for the development of research infrastructure. The main argument in favor of active cooperation is the cost and / or complexity of the settings, which can only be developed on a global scale; ensuring open access to publications and databases on a global scale.

4.3. Tax-budgetary, structural and scientific-technical policy of the EU

The basis of supranational and transnational regulation of all parties to the EU's activities is the general budget of the European Union. The small share of the EU budget in the total GDP of the EU countries (1.37%) is explained by the principle of subsidiarity (additionality) of funds from the budget directed to various EU programs, which provides for their full budget financing.

The revenue part of the EU budget is formed at the expense of deductions from the value added tax in the amount of 1.4% of national revenues, customs duties required upon import into the zone of industrial goods from third countries, agricultural compensation fees on imported production, deductions from national budgets.

The expenditure part of the budget is intended for the implementation of the agricultural (the EU's common agricultural policy accounts for 48% of the Union's budget), regional, social, scientific and technical and industrial policies of the EU member states, assistance to developing countries, and also to cover administrative costs. The expenditure part of the budget includes the costs of the main EU budget funds.

The EU financial mechanism includes (Regulation (EU) 2021/697 of the 29 April 2021 establishing the European Defence Fund and repealing Regulation (EU) 2018/1092 , OJ L 170, 12.5.2021):

1) The European Agricultural Guidance and Guarantee Fund - a source of financing for the EU's common agricultural policy;

2) The European Social Fund - a source of financing for programs to provide assistance to regions in depression, affected by structural unemployment;

3) The European Regional Development Fund - a source of financing for programs to equalize the levels of economic development of the various regions of the Union;

4) The European Development Fund - a source of assistance to countries undergoing the initial stage of integration (associated EU members);

5) The European Investment Bank — an institute for financing regional programs for the modernization of enterprises through long-term loans and guarantees.

Integration processes in the financial sphere are also manifested in the process of tax harmonization, which implies the application of uniform schemes in taxation and the gradual smoothing of differences in tax rates. Thus, in all EU countries, a value added tax operates, and its relative share in the total amount of taxes in Germany, France, and the United Kingdom is approximately the same - 17-18%. The approximation of the principles of indirect taxation is particularly important for the EU for two reasons. First, since these taxes are included in the prices of goods, their uniformity creates approximately equal competitive conditions on the European market. Second, these taxes are the main source of the income of national budgets.

In addition, despite the desire to achieve the same unity in relation to corporate profit tax and income tax, their harmonization has not yet been achieved. Great Britain is against attempts to equalize the tax burden in the EU countries, since the marginal tax rates in this country are lower than the average in the EU countries.

The EU structural policy, aimed at effectively resolving issues of structural restructuring of the economy, increasing its scientific and technical potential, is carried out simultaneously at two levels: sectoral (industry) and regional. Among the branches of the economy, agriculture is subject to the greatest regulation. To stimulate it when importing cheaper products from third countries at the borders of the EU, a compensation fee is charged, and its agricultural producers are guaranteed sales at a predetermined price. Direct subsidies to agricultural producers account for 60% of all agricultural policy expenditures. In addition, the structural reform of European agriculture implies: increasing the concentration of production to the optimal level; reduction of agricultural land while increasing land productivity at the expense of using cutting-edge technologies (genetic engineering, biotechnology, etc.); relocation of the workforce from agriculture to other sectors, etc. (Council Regulation (Euratom) 2021/765 of 10 May 2021 establishing the Research and Training Programme of the European Atomic Energy Community for the period 2021-2025 supplementing Horizon Europe - the Framework Programme for Research and Innovation, 10 May 2021 )

Another element of the EU structural policy is the policy of restructuring industry at the level of individual regions, caused by the general process of deindustrialization of the EU economy. The dynamic change in the structure of the economy based on the achievements of science and technology leads to a reduction in the share of traditional industries (textile, metallurgical, coal mining), to the closure of enterprises in basic industries and the emergence of depressed regions with mass unemployment.

The European Regional Development Fund provides financial assistance to problem regions in the construction of new industrial facilities, the creation of new jobs, in the implementation of retraining and retraining programs.

In recent years, the selective approach aimed at stimulating the activities of specific companies has received preferential development in structural policy. According to this approach, only private business can effectively solve the issues of the revival of depressed regions, and not through the construction of large industrial enterprises, but mainly through the creation of enterprises in cutting-edge industries. In addition to preferential taxation, easing access to credit, the antitrust procedures of the selective approach provide for measures preparing enterprises for effective participation in European competition: more complete information about the market is provided (TED electronic database), technical assistance is provided to enterprises - participants: intra-European exchanges (PRISM program), special training of personnel is carried out.

A feature of the joint scientific and technical policy is the stimulation of STP in the "pre-competitive" areas (at the stage of project development), not bringing immediate profit. At the same time, the solution of production and implementation tasks is transferred to the entrepreneurs themselves.

To implement the joint scientific and technical policy, the EU develops four-year framework programs in the field of informatics, new materials, telecommunications, biotechnology, consisting of individual projects with a certain deadline for their implementation and the necessary financial coverage. Financing of projects can be direct, if the research is carried out in scientific centers belonging to the EU, and indirect, if they are carried out by companies from at least two member states on a contractual basis (in this case, 50% financing of the cost of the works is provided), and also coordinated, if the joint projects are implemented on the basis of national funds, and the European Commission pays only part of the costs for coordination of activities and exchange of information. (Council Regulation (EU, Euratom) 2020/2093 of 17 December 2020 laying down the multiannual financial framework for the years 2021-2027, OJ L 433 I, 22.12.2020)

The process of implementing a single macroeconomic policy in the EU countries is not devoid of contradictions, which are caused by the division of national and supranational levers for managing the economy and the transfer of a number of traditional regulatory functions of the state to the supranational level. Thus, the Maastricht requirements for observing budget discipline (the budget deficit should not exceed 3% of GDP for countries entering the eurozone) have significantly limited the anti-crisis role of state budget policy. This was fully manifested in the course of the global economic recession of 2001-~2002> when in Germany, using the growth of state spending to get out of the crisis, criminal sanctions were imposed for exceeding the size of the budget deficit (over 3% of GDP).

Even more controversial than the single budgetary policy is the common agricultural policy of the European Union. The contradictions are intensifying in connection with the upcoming fifth enlargement of the EU. The point is that EU members receive direct subsidies

from the EU budget in proportion to the size of their agricultural sector, and contribute funds to the budget in proportion to the size of GDP. At the same time, the most industrially developed EU countries, primarily Germany, contribute a lot to the budget, and their farmers, who are not as numerous as in other agro-industrial EU countries, receive small subsidies. The entry into the EU of Eastern European countries, in the economy of which agriculture plays a significant role, for example, Poland, leads to a redistribution of flows from the main recipients of subsidies in the EU (Spain, Italy and France) to the new members, which causes their dissatisfaction. In order to mitigate the consequences of the fifth enlargement of the EU for the "old" EU members, the European Union has developed a program for subsidizing the newly admitted countries. (Regulation (EU) Council Regulation (EU, Euratom) 2020/2094 of 14 December 2020 establishing a European Union Recovery Instrument to support recovery from the COVID-19 crisis., OJ L 433 I, 22.12.2020)

The Seventh Framework Programme project «MERIL-Mapping of the European Research Infrastructure Landscape» in 2014 indexed 537 research infrastructures in Europe - 65 international and 472 national, integrated into 70 networks. (htt2)

The MERIL (Mapping of the European Research Infrastructure Landscape) portal aims to be a comprehensive and up-to-date database of European research infrastructures. It currently covers over 900 research infrastructures across all scientific domains, and the aim is to expand the data coverage further and include additional RIs. The portal provides the means for making informed assessments and decisions about the research infrastructure landscape and collaboration in Europe.

Further exploitation of MERIL data related to research infrastructure services continues within the CatRIS project. Data from MERIL have been transferred into an intermediate, non-public database that follows the CatRIS/EOSC data model.

The MERIL (Mapping of the European Research Infrastructure Landscape) portal provides access to a database that stores information about openly accessible research infrastructures (RIs) in Europe, across all scientific domains, including the social sciences and humanities. (htt1)

However, despite all the contradictions in the implementation of the unified macroeconomic policy, the European Union remains the most unique supranational economic entity in the world, ensuring the optimal functioning of national economies in the conditions of the unified budgetary, monetary, structural, agricultural and scientific and technical policy of the EU.

**Conclusion and Recommendations**

The European Union's science and technology policy in the field of research infrastructure is a strategic tool for achieving sustainable economic development, innovation and social progress. Despite significant achievements, challenges related to coordination, funding and regional disparities remain significant. A more integrated and balanced

approach is needed to ensure equal access to infrastructure, more efficient use of resources and strengthening the links between science, society and the economy.

Through a coherent and flexible policy, the EU can consolidate its leading role in the global science ecosystem and create the conditions for the next generation of scientific breakthroughs.

**Recommendations**

1. Harmonize national policies for better integration within the ERA.
2. Strengthen regional measurement – create more infrastructure hubs in Central and Eastern Europe.
3. Improve coordination and administrative efficiency in applying for and managing European projects.
4. Investment in digital and green technologies – development of supercomputing centers, open science platforms and infrastructures with a low carbon footprint.
5. Stimulating public-private partnerships through tax breaks and co-investment programs.
6. Supporting young researchers and promoting mobility within the EU.

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# CORPORATE TAX REJECTION AS A MEASURE TO STIMULATE ECONOMIC GROWTH

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***Abstract***

*Taxes play a significant role in the development of the modern world and economic processes. They invariably influence economic life and shape the framework of investment opportunities.*

*They contribute to the affirmation of the role of the state, the implementation of mechanisms for regulation and the implementation of its functions for the provision of public goods. Taxes are the main source of revenue for the budget.*

*They help its implementation. Nowadays, taxes should not be accepted as a method of restricting the business environment, but on the contrary - through a correct and modern tax policy, the state could stimulate business to develop its activities. Corporate tax is among the main taxes in Bulgaria, the second most important for the republican budget.*

*The tax rate applied in the country is among the lowest in the EU. The government has adopted a legislative option, upon fulfillment of certain criteria, for liable persons to be able to benefit from tax breaks and a special regime of corporate tax deferral.*

*This report will review the conditions under which profit tax is transferred and the ways to stimulate business entities.*

***Keywords:*** *Tax; Corporate Tax; Tax Relief; Corporate Regulation; National Taxation; Revenue; Taxation; Business Tax; Corporate Welfare; State Revenue; State Tax*

***JEL Codes:*** *G380; H200; H250; H710*

## Introduction

Taxes are an inevitable factor that influences the activities of investors, enterprises, as well as the behavior of citizens and their business initiatives.

In the scientific literature, there are conclusions from numerous authors who examine the positive and negative aspects of taxation, and more specifically, through corporate taxation.

The current legislation in the Republic of Bulgaria provides the opportunity to use various tax breaks related to the taxation of companies' profits.

This paper provides a brief overview of some of these reliefs. All of them were created with the aim of supporting the activities of enterprises.

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In this way, the government pursues a policy of promoting employment, limiting unemployment, and encouraging enterprises to hire people with disabilities and young specialists. Agriculture and the modernization of the equipment used are supported.

By rejection of the corporate tax, social policy is also being implemented, giving a real opportunity to enterprises from economically underdeveloped regions to invest in creating new jobs and thus influence unemployment.

Another aspect regarding tax breaks related to the taxation of companies' financial results concerns the granting of scholarships to students.

This is another way to reduce unemployment. Employers have the opportunity to select their future employees or workers during their training process.

On the other hand, students and pupils themselves gain another incentive to develop, to show better results in their studies, and to be assured that they will have a workplace where they can prove their qualities and talent.

In connection with the proven negative impact of taxation on the activities of enterprises of various types, in this case - cooperative organizations, the transfer of corporate tax can be perceived as a positive sign and an opportunity to stimulate economic progress and investment activity.

**Literature review**

The role of corporate tax deferral is expressed in stimulating economically active individuals and achieving optimal financial results from their activities. Zdravkov, I. (2024) examines the topic of corporate tax deferral in the agricultural sector (p 46). He came to the conclusion that in this way a kind of economic progress is achieved in the activities of farmers.

According Stoyanova, M. (2015) one of the ways to minimize the negative processes regarding cooperative activity in Bulgaria is by implementing a protectionist policy on the part of local and central authorities, non-governmental associations and business circles (p. 43).

A report of Miteva, A. (2013) notes the growing importance of social activities with a special emphasis on cooperatives of people with disabilities (p. 86).

Stoyanova, Sl. (2020) shares the idea of the influence of cooperative organizations on the development of economic processes and the stabilization of modern economies around the world. Cooperative unions often help overcome numerous social defects. At the same time, they stimulate cooperation and equality in many aspects (p. 163).

Sarov, A. (2020) conducts research related to the implementation of the Common Agricultural Policy of the European Union and monitors its specific results. During the period from 2007 to 2016, a trend towards a decrease in the number of cooperatives, as well as the areas cultivated by them, was observed. Positive results were reported regarding the diversity in the cultivation of various plant crops (p. 59).

A definition of the concept of "cooperation" has been introduced in the scientific literature. Boevski, I. and Alieva-Veli (2023) state that a cooperative is an organization characterized by ownership by the users/members, control by the users/members, and benefits for the users/members. This type of structure is characterized by a dual nature, namely: the cooperative is both an enterprise and a cooperative group, and the cooperative is based in its activity on self-help within the scope of the cooperative group (p. 31-32).

In conducting a specialized scientific study regarding the development of labor-producing cooperatives in Bulgaria, Miteva, A. (2014) describes several main conclusions (p. 39-40). Among them is the impact of the tax burden on the activities of cooperatives. Indirect, as well as direct taxes, have a negative impact. Representatives of labor-producing cooperatives believe that the amount of taxes in Bulgaria is too high in relation to the activities they carry out. The limited market resource also creates difficulties. A large number of respondents are of the opinion that the state authorities fail to create a favorable environment.

When analyzing the problem, in connection with studying the relationship between corporate tax and reporting economic growth, the initial assumptions are that higher corporate tax rates would stimulate economic progress. Hungerford, Th. (2013) reports that neither the maximum corporate tax rate nor the effective marginal tax rate are directly related to GDP growth (p. 5-6). He examines several options for measures that would lead to an impact on economic growth. These are broadening the tax base, reducing the tax rate, and completely eliminating corporate tax. The author does not recommend eliminating corporate tax because of its importance.

The assignment, as well as the exemption from corporate tax, constitute subjective rights of taxpayers, which in turn give rise to obligations or compliance with specific restrictions introduced by the Corporate Income Tax Act. The problem is analyzed in a report by Dimitrov (Dimitrov, P., 2016, p. 296).

In their study, Tanchev, St. and Yakova, M. (2018) found an inverse relationship between economic growth and the formation of tax revenues in times of economic crisis (p. 54-71).

Stoilova, D. (2017) traces the relationship between lowering the corporate tax rate and economic growth. She points out that numerous scientific studies prove that lowering the tax burden has a beneficial effect and thus increases economic growth.

**Description Of The Methods For Rejection Of Corporate Tax**

Part of the tax relief provided for in the specific regulatory act applicable in Bulgaria is the deferral of corporate tax. In turn, the existence of a deferral is observed when the taxpayer exercises his right not to pay the amount of corporate tax determined in accordance with the current law to the state budget.

In this way, the company will be able to benefit from the relevant deduction and use it for its activities.

The conditions for this are specifically regulated in Chapter Twenty-Two of the Corporate Income Tax Law of Bulgaria.

This paper should also mention the conditions that the taxpayer must meet in order to benefit from the right to transfer the tax.

It is stated that as of December 31 of the relevant financial year, the enterprise must not have:

tax liabilities subject to compulsory collection

obligations for sanctions under criminal decrees that have entered into force, related to violation of regulatory acts regarding public obligations

interest related to non-payment of obligations on time on the previous two points

Companies should indicate in the annual tax return the order in which they used the different methods for transferring corporate tax.

In turn, some of the main types of relief related to the transfer of corporate tax should be indicated.

Tax relief related to the hiring of unemployed persons.

The law establishes the possibility of reducing the accounting financial result by the amount of the amounts paid for wages and social security contributions paid on behalf of the employer for the first 12 months of hiring a given person, when the same is hired under an employment relationship for a period of no less than 12 consecutive months.

In order to exercise this right, the following criteria must be met for the employee:

has been registered as unemployed for more than a year or

an unemployed person over the age of 50 is registered or

unemployed person with reduced working capacity

From this, a conclusion can be drawn regarding the state's social policy, with a view to stimulating enterprises to hire citizens who have difficulty finding a job on the labor market.

Three large groups of people are covered - the permanently unemployed; people who are at an age where they cannot be competitive in the current economic environment - people over 50 years of age; as well as unemployed people who have an established reduced work capacity and for whom the working conditions at most employers are not suitable.

There are also restrictions, described in more detail in the Act.

The next type of relief is related to the granting of scholarships for students.

Enterprises may provide scholarships to one or more students if they are students in the last two grades of secondary education or are students in the last two years of their studies in a "bachelor's" or "master's" educational qualification degree.

The next condition is that the students must not be under 25 years old.

To benefit from this tax break, several other factors must be in place, namely:

the educational institution where the scholarship holder studies must be located in a Member State of the European Union or in a country that is a party to the Agreement on the European Economic Area

the students' profession must be related to the activities of the enterprise granting the scholarship a contract has been concluded between the company and the scholarship recipient, whereby the company is obliged to employ the person for the period for which the scholarship was awarded.

The scholarship is granted for a period of no less than 12 months and no longer than 24 months.

The regulatory act includes restrictions regarding failure to fulfill the conditions or failure to meet specific deadlines.

In this regard, it is necessary to transform the accounting financial result, that is, it affects the final results of the company for the respective reporting period.

Another relief allows for the transfer of corporate tax. In practice, it is often observed that labor cooperatives employ people with disabilities, thus fulfilling the social role of this type of company.

The regulations allow the profit tax to be reject in full when the employer organizations are specialized or represent cooperatives, according to the Law on People with Disabilities and as of December 31 of the specific tax period, participate as members of the national organizations for people with disabilities, having fulfilled the following conditions:

- 20% of the total staff are blind and partially sighted people or
- 30% of the total number of staff are hearing impaired or
- 50% of the total number of staff are people with other disabilities

In all other cases, the tax is rejected according to the relative share of the number of people with disabilities or employed persons compared to the total number of employees in the enterprise.

A mandatory condition for this type of tax relief is that the amount of the rejected corporate tax be used for the integration of people with disabilities or be invested in maintaining and opening new jobs for people with disabilities over the next two years.

There is a tax relief related to the activities of social and health insurance funds established by law.

When these companies carry out business activities related to their main activity, they can benefit from a corporate tax credit of 50%.

The amount of the tax relief should be invested in the main activity until the end of the year following the period for which the relief is used.

The legislation also provides for other cases where corporate tax relief may be used. They are related to both national and international legislation.

The opportunity is given to enterprises operating in settlements with unemployment levels that are higher than the national average.

Precise requirements are specified that companies must meet in order to benefit from this relief.

Employers can benefit from state aid when, through their activities, they promote employment and create jobs with the aim of reducing unemployment in economically underdeveloped regions.

There is a tax relief that is identified as state aid related to the activities of farmers.

A corporate tax credit of no more than 60% is allowed to registered farmers when their activity is related to the production of unprocessed plant and animal products.

The corporate tax amount should be invested in the purchase of new agricultural equipment or acquisition of new buildings by the end of the year following the reporting period during which the relief is used.

## Conclusion

Corporate tax rejection plays an important, key and positive role for cooperatives and other types of enterprises. It is a way to stimulate business initiative, investment activity and achieve economic growth.

Bulgarian legislation provides for the possibility, under certain conditions, of using tax breaks. The Corporate Income Tax Act determines the conditions for using the specific breaks.

The government pursues a policy of promoting agriculture, providing scholarships for students, and employing people with disabilities.

The use of tax relief through the rejection of corporate tax is a type of measure to support the activities of business entities and creates opportunities for development.

The state is looking for a way to limit unemployment levels, as well as methods for integrating people with disabilities.

Tax relief in the form of corporate tax rejection can also be perceived as a type of state assistance to assist employer organizations in resolving personnel-related problems.

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# ETHICAL AND LEGAL DIMENSIONS OF CREATIVE ACCOUNTING: A CRITICAL REVIEW OF THE LITERATURE

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***Abstract***

*Creative accounting in the public sector represents a subtle yet impactful challenge to fiscal transparency and accountability. This literature review explores the techniques employed by public administrations to manipulate financial information, including the misrepresentation of budget deficits, off-balance-sheet financing, and reclassification of expenditures. It examines the underlying motivations—political pressures, electoral cycles, and legal loopholes—that foster such practices. Drawing on international case studies, particularly from European and developing countries, the review analyzes the consequences of creative accounting for public trust, policy decisions, and long-term financial sustainability. The findings emphasize the need for stricter oversight, robust institutional frameworks, and ethical standards to mitigate opportunistic behavior in public financial management.*

***Keywords:*** *Creative accounting, Public sector, Fiscal transparency, Budget manipulation*

***JEL codes****: H20, G10*

## Introduction

Creative accounting in the public sector has emerged as a critical concern in contemporary public financial management due to its implications for fiscal transparency, accountability, and ethical governance. Defined broadly as the manipulation of accounting practices within the boundaries of legal frameworks to present financial outcomes more favorably than they actually are, creative accounting often exploits the flexibility and ambiguity of accounting standards (Stalebrink, 2007). In the public sector, such practices typically involve reclassification of expenditures, deferral of liabilities, or off-balance-sheet financing to obscure actual fiscal positions and maintain political legitimacy (Benito et al., 2007).

A growing body of literature emphasizes that political pressures and electoral incentives frequently underpin creative accounting practices in government budgets (Alesina et al., 2019). For instance, governments facing impending elections may resort to opportunistic financial reporting to project economic stability and fiscal discipline while postponing the acknowledgment of deficits or liabilities (Alt, Lassen, & Wehner, 2014). Moreover, legal loopholes and insufficient institutional oversight often provide the necessary space for such manipulations to flourish, particularly in countries with weak transparency regulations or limited auditing capacities (Basyal et al., 2018).

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Ethically, creative accounting presents profound challenges for public accountability and trust in government institutions. Scholars argue that while some practices may comply with the letter of the law, they frequently violate its spirit by misleading stakeholders and undermining democratic accountability (Cangiano et al., 2013). This tension between legality and legitimacy raises significant ethical dilemmas for public administrators, particularly in contexts where international standards on fiscal transparency, such as those promoted by the IMF and OECD, demand greater disclosure and uniformity (Kopits & Craig, 1998).

International case studies illustrate that creative accounting is not confined to developing economies but extends across European Union member states as well. For example, research on European fiscal rules highlights instances where governments circumvented deficit limits through accounting stratagems, thereby complicating the enforcement of supranational fiscal discipline mechanisms (Koen & van den Noord, 2005). Such practices not only distort policy debates but also threaten long-term fiscal sustainability by concealing structural imbalances until they escalate into crises (Milesi-Ferretti, 2004).

Consequently, recent scholarship calls for stronger legal frameworks, independent auditing institutions, and enhanced ethical standards to counteract creative accounting in the public sector. Strengthening fiscal transparency and embedding ethical considerations into public financial management are essential to mitigating opportunistic behaviors and safeguarding democratic accountability.

**Conceptual Framework and Typologies**

Creative accounting is commonly defined as the strategic exploitation of flexibility within accounting standards to present a more favorable financial picture than the underlying reality, while still complying with established regulations (Belkasseh, Lakhlifi, & Aissaoui, 2025. Naser (1993) highlights how preparers manipulate figures through loopholes and choices in measurement and disclosure practices that comply legally but depart from economic substance.

Mulford and Comiskey (2002) provide a detailed typology of these practices, including premature or fictitious revenue recognition, aggressive capitalization of costs, understatement of liabilities, and smoothing of earnings to reduce volatility. Archer (1996) adds an ethical dimension, arguing that although some practices conform to the letter of the law, they violate the spirit of transparency and can severely compromise stakeholder trust.

In the broader accounting literature, creative accounting overlaps with concepts like “earnings management,” “window dressing,” or “income smoothing,” all depicting maneuvers intended to keep financial outcomes within desired ranges or to distort economic reality favorably (Murineanu, 2024).

### Specific Motivations and Mechanisms in the Public Sector

While creative accounting has been extensively studied in the private sector, its public sector applications—termed Public Sector Creative Accounting (PSCA)—warrant focused attention. Cardoso and Fajardo (2014) observe that public entities face similar incentives to manipulate accounting, yet literature specifically dedicated to PSCA remains scarce S.

Belkasseh et al. (2025), using a Moroccan public administration as a case study, stress that public bodies are driven by policy imperatives, fiscal constraints, and supranational pressure, such as adherence to the European Stability and Growth Pact, leading them to hide debt via off-balance-sheet arrangements like PPPs (public-private partnerships).

Finland offers another context: Vinnari and Näsi (2008) describe a "milking" tactic in Finnish municipalities, in which public service revenues are inflated to transfer surplus to general budgets, avoiding unpopular taxation and presenting a healthier fiscal situation.

### Ethical Challenges versus Legal Compliance

From an ethical standpoint, creative accounting in the public sector illustrates a classic tension: legal compliance does not necessarily equate to ethical legitimacy. Archer (1996) argues that adherence to regulations can still result in substantial erosion of financial reporting credibility, undermining stakeholder confidence and democratic accountability.

The stakes are often higher in the public domain: misleading financial reports—not outright fraud—nevertheless obscure governance transparency and impair informed policy decision-making. Blake et al. (2000) highlight that "correct" accounting under standards can still be misleading if used to conceal vital information or distort economic reality, revealing a divergence between procedural and substantive transparency.

### Legal and Institutional Safeguards

Improving legal infrastructure and oversight mechanisms is crucial for combating creative accounting. Adoption of International Public Sector Accounting Standards (IPSAS) aims to enhance transparency and accountability in public sector financial reporting globally by promoting accrual-based accounting and comparable financial statements.

However, even accrual accounting, while theoretically more informative about government assets and liabilities, relies heavily on estimates and valuations that may lack reliability and public understanding.

Hence, technical standardization must be complemented by strong internal controls, external audits, clear accountability frameworks, and enforcement mechanisms to ensure integrity and deter manipulative practices.

### Consequences for Governance and Transparency

The misuse of creative accounting in public finance has broader consequences. Fiscal creativity significantly increases sovereign bond risk premiums when exposed, especially in

low-transparency countries where creative accounting is seen as a sign of deeper fiscal issues.

Belkasseh et al. (2025) argue that such practices undermine financial trust and institutional legitimacy, posing systemic risks beyond the public entity in question. Ultimately, the deficiency lies not in the legality but in the misleading nature and the erosion of democratic accountability—a central risk when data is presented "correctly" yet falls short of transparency.

### Detection, Remediation, and Ethical Restoration

Belkasseh et al. (2025) propose a detection and remediation framework combining literature review, audit triangulation, and case study analysis to uncover anomalies in accounting data and subsidy structure, and to recommend corrective actions. Mulford and Comiskey (2002) suggest a practical analytical technique: comparing net income with operating cash flows to detect discrepancies that often signal aggressive accounting behavior. Archer (1996) emphasizes the importance of embedding an ethical organizational culture: promoting commitments to transparency, professionalism, and policy fidelity, rather than procedural compliance alone. Lastly, advanced systems—such as digitized accounting platforms—can reduce judgment-based manipulation by increasing data traceability and accountability, complementing institutional and ethical safeguards.

## Conclusions

This critical review demonstrates that creative accounting in the public sector is neither a marginal phenomenon nor confined to isolated cases. Instead, it constitutes a persistent challenge to fiscal transparency, democratic accountability, and public trust. The literature consistently shows that creative accounting exploits legal and regulatory flexibility through techniques such as off-balance-sheet financing, expenditure reclassification, and timing manipulation, often to present an artificially favorable fiscal position.

Ethically, the key concern lies in the divergence between legality and legitimacy. While such practices may comply with formal accounting standards, they frequently undermine the spirit of transparency and erode the reliability of financial information available to policymakers, investors, and the public. This ethical tension becomes even more critical in democratic contexts, where informed decision-making and citizen trust depend on the integrity of public sector reporting.

Legally, the review highlights the need for robust institutional frameworks, standardized international accounting rules such as IPSAS, and stringent oversight mechanisms to limit the scope for manipulative practices. However, regulations alone appear insufficient. Multiple studies argue that fostering an ethical culture within public administration—emphasizing professional integrity, public accountability, and responsible stewardship of resources—is equally important for sustainable reform.

Moreover, the international evidence indicates that creative accounting practices often intensify during periods of political pressure, economic austerity, or electoral cycles, suggesting that purely technical solutions cannot address the underlying political incentives driving fiscal manipulation. Future reforms must therefore integrate legal, institutional, and ethical dimensions to address both the symptoms and root causes of creative accounting.

Ultimately, the literature converges on the conclusion that transparency, accountability, and ethics must form the cornerstone of modern public financial management. Strengthening auditing systems, improving data reliability, and adopting digital reporting technologies may reduce opportunities for manipulation. However, lasting progress requires a cultural shift toward viewing public sector accounting not merely as a compliance exercise but as a democratic obligation to provide truthful, clear, and timely information for all stakeholders.

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# IS DIGITIZATION NECESSARY IN ACCOUNTING?

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***Abstract***

*Accounting cannot be carried out without a computer, a specialized accounting program and the Internet. All reports, declarations and reports are submitted to the relevant institutions online. The question - is digitalization necessary, has an unambiguous answer - Yes. But there is a possibility of leakage of financial and accounting information, staff concerns about new technologies and their implementation, increased investment costs and others. This report will examine the benefits and possible difficulties that arise in enterprises when introducing digitalization in accounting, without considering all possible reasons.*

***Key words:*** *accounting; digitalization; cloud technologies*

***JEL Codes:*** *M41 Accounting*

## Introduction

Every company keeps accounting records, regardless of whether it is a micro or large enterprise. Of course, the legislator provides for a simplified form for some enterprises, but the majority applies the double-entry accounting method, and hence the need to introduce a software product that specializes in this area. Today, accounting is much different than 100 years ago, or even 20 years ago. Much more detailed information is required, which also requires greater analytical skills. In order to make the right decisions, it is necessary to have correct and accurate accounting information that the management team can have and review at the right time. This raises the question of what software product to use, with what characteristics, what kind of computer to use, and others? Traditional working methods based on paper documents and manual information processing are proving to be increasingly inefficient and unsuitable for the requirements of the modern business environment. The increasing volume of data, the need for quick access to information, and increased regulatory requirements challenge accounting professionals to seek new solutions (Goodell, 2022).

This report examines the need to introduce new technologies in accounting that can increase the efficiency, transparency and reliability of financial reporting. A critical analysis of the contemporary challenges facing the traditional accounting model is carried out, including limited adaptability to dynamic regulatory requirements and the growing volume of data. The emphasis is on the role of automation, cloud services, artificial intelligence and staff training in the processes of processing and analyzing accounting information. Through a review of empirical research and good practices, the thesis is argued that digitalization is

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not just a technological innovation, but a necessity for modern accounting (Huy & Phuc, 2024).

**Technological foundations of digitalization in accounting**

Accounting, as one of the most conservative and regulated professions, is faced with the need to adapt to the new realities dictated by digitalization. Digitalization in the accounting context is defined as the process of integrating modern information technologies into the activities of collecting, processing, storing and presenting financial and accounting information. This includes the use of software for automating accounting operations, cloud systems for data storage, blockchain technologies for ensuring security and transparency, as well as tools for analysis using artificial intelligence (Costa & Pinho, 2025).

Digitalization in accounting is not a one-time process, but a systemic transformation based on the application of modern information and communication technologies, which change the way accounting information is collected, processed, analyzed and presented. Accounting has existed since ancient times. Papyri have been found along the Nile River, which testify to its existence. It went through many stages until it developed to its present form. Today, it is fashionable to even talk about paperless accounting, which is possible thanks to new technologies - the Internet, artificial intelligence, blockchain, cloud drives and others (Yang & He, 2025).

These technologies allow many processes to be automated and manual data entry to be reduced to a minimum. This allows errors to be avoided and the processes of entering and processing accounting information to be completed in (Chen, Lu, & Li, 2024)a very short time. Routine operations that used to take days with the help of new technologies take minutes. Digitalization allows automation of routine processes - entering invoices, processing expenses, generating reports. This reduces the time for completing tasks and frees up resources for analytical and strategic activities. By using digital tools, the likelihood of human errors that can lead to serious financial or regulatory consequences is reduced. Software systems can automatically detect anomalies and discrepancies in accounting records (Yang & He, 2025).

**Accessibility and mobility of accounting and financial data**

Cloud technologies allow access to accounting information in real time, regardless of the user's physical location. This is especially important for multinational companies and accounting teams that work remotely. Cloud platforms provide the opportunity for centralized storage and access to accounting information from different devices and locations. Examples of such systems include Xero, QuickBooks Online, SAP Business One Cloud, as well as localized accounting platforms that adapt to national legislation. Advantages of cloud technologies are flexibility and mobility - access to data in real time; low initial investment - SaaS (Software-as-a-Service) model; automatic updates and support; higher security and archiving when using reputable providers. Of course, it should not be

ignored that in locations that do not have the Internet, there is no way to access data or transfer data to other points. This fact is not significant, because the Internet is available in many places and more and more points on the globe are joining the places with the Internet. Data is archived periodically, and providers of this service constantly update and maintain their systems. This ensures their security and the ability to be used in real time to make the right strategic decisions (Li, Han, Sun, & Cheng, 2025). This allows for systematized information that can be accessed 24 hours a day by authorized persons. Cloud systems also facilitate collaboration between accountants, auditors and managers, by supporting the coordination and sharing of information in real time between persons physically located in different places. (Goodell, 2022)

Cloud solutions eliminate the need to purchase and maintain expensive hardware and software. Instead, companies pay for the use of services according to their needs, which leads to more flexible cost management. According to the scale of the enterprise, document flow, whether it has branches and other characteristics, it is possible to assess what the company's needs are and what costs will have to be paid for cloud services. This helps to minimize costs and their advance planning, which facilitates decision-making in the future (Huy & Phuc, 2024).

Cloud platforms often offer integrated tools for automating accounting operations – for example, automatically entering invoices, bank statements, etc., tracking payments, and generating reports. This reduces the risk of errors and saves time. These automatic operations reduce human labor, which in addition to preventing errors also leads to a reduction in costs (Costa & Pinho, 2025). This allows for a report or other reference in real time for making reliable decisions by the company’s managers (Costa & Pinho, 2025).

One of the key benefits of cloud solutions is their ability to adapt to the dynamic needs of the business. Unlike traditional local systems, which require serious investments when expanding capacity is necessary, cloud platforms offer flexible resource management according to the current needs of enterprises (Li, Han, Sun, & Cheng, 2025). Cloud services allow you to easily increase or decrease the volume of resources used – server space, computing power or software functionalities. This is especially important for accounting, because the load varies throughout the year – for example, during annual accounting closing or when preparing tax reports, the volume of processed information increases sharply. The flexibility of cloud solutions is expressed in their ability to adjust to the specific needs of different organizations – from small accounting firms to large international companies. Selection of different modules or functionalities depending on the scale of the activity – for example, automatic invoice accounting, VAT management, integration with banking systems, etc. Personalization of access to information for different groups of users – accountants, managers, auditors, etc. Thanks to scalability and flexibility, enterprises can respond in a timely manner to changes in the market environment – for example, when expanding into new markets or introducing new regulatory requirements. This makes cloud

technologies a strategic tool for sustainable development, ensuring both operational efficiency and long-term competitiveness (Morshed, 2025).

*Figure no. 1 - Cloud technologies*

*Source:* Own source

Cloud technologies and modern software solutions offer a high level of security through encryption, backups, and access control, reducing the risk of data loss in the event of accidents or cyberattacks.

**Disadvantages of digitalization**

Implementing new accounting systems, training staff and integrating with other platforms requires significant investments (Liu, Zhou, & Molinas, 2018). Despite high levels of security, digital systems are always vulnerable to hacker attacks, data theft or viruses. This requires constant investment in cybersecurity, which further increases costs. This can be a barrier for small and medium-sized businesses that do not have sufficient cash. Companies become dependent on software and cloud service providers. In the event of a technical problem, cyberattack or internet connection interruption, work can be temporarily blocked. Businesses are even dependent on electricity providers. Accountants need to acquire new skills to work with software platforms. Lack of digital literacy can make the transition difficult and lead to resistance from staff, especially if staff believe that new technologies will replace them. Legislation and accounting standards are not always fully adapted to the digital environment. For example, storing documents in the cloud can raise questions about jurisdiction and personal data protection (GDPR). Digitalization reduces the need for physical communication between accountant and client. This can lead to more formalized relationships and a weakening of trust, especially in small businesses (Morshed, 2025).

*Table no. 1 - Advantages and disadvantages of digitalization in accounting*

| Advantages | Disadvantages |
|---|---|
| Increased efficiency and speed in data processing | High initial costs for implementation and training |
| Reduction of human errors through automation | Dependence on technology and service providers |
| Accessibility and mobility – work from anywhere, anytime | Risk of cyber threats and security breaches |
| Improved transparency and accountability – easier audits and traceability | Need for staff training and adaptation |
| Data security and protection through encryption and backups | Legal and regulatory challenges (e.g., GDPR) |
| Scalability and flexibility – adaptation to business needs | Potential loss of personal contact between accountant and client |
| Integration with other business systems (ERP, CRM, banking) | Possible temporary interruptions due to technical issues or lack of internet |

*Source:* Own source

## Conclusion

Digitalization in accounting is becoming an inevitable process that is fundamentally changing the way we work in this professional field. It brings significant advantages – increasing efficiency, reducing errors, ensuring accessibility and transparency, as well as a higher level of data security. Through integration with other business systems and the possibility of scalability, digital solutions support the sustainable development of organizations and prepare them for the challenges of the digital economy (Li, Han, Sun, & Cheng, 2025).

At the same time, the process of digitalization is not without its difficulties. High initial investments, the need for staff training, as well as the risk of cyber threats and legal inconsistencies require a careful approach. This implies a balanced strategy that combines the implementation of modern technologies with strict information security measures and continuous development of the competencies of accounting specialists (Chen, Lu, & Li, 2024).

Ultimately, digitalization is not a matter of choice, but of adaptation. It is the key to modern accounting, which not only takes into account the past and present of financial processes, but also helps to plan more precisely for the future (Morshed, 2025).

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# THE ROLE OF SMALL AND MEDIUM-SIZE ENTERPISES IN THE ECONOMY WITH SPECIAL FOCUS OF THE REPUBLIC OF NORTH MACEDONIA

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***Abstract***

*In recent years, there have been exceptionally significant changes in the way small and medium-sized enterprises (SMEs) are viewed, which has led to a completely new approach in the way they operate and they are managed. Basically, changes in the perception of the work and management of SMEs, based on scientific knowledge and past practical experience, clearly indicate the need for a new approach in the functioning of SMEs. Support for the SME sector should be a continuous process and an integral part of the economic policy of every country, which is reflected through adequate sources of financing and stability in the macroeconomic environment. Small and medium-sized enterprises undoubtedly constitute a vital segment of the economic structure of every country. These enterprises face serious barriers to development and survival because the owners, who often also perform managerial functions, are unaware that effective and structured management is crucial for their survival. Entrepreneurial spirit and business institutions alone are not enough. In this context, it is necessary for the economies of transition countries such as Republic of North Macedonia to introduce certain reforms.*

***Keywords:*** *small and medium-sized enterprises; North Macedonia; economy; industry;*

***JEL Codes:*** *L26, M13, O16*

## Introduction

In recent years, there have been exceptionally significant changes in the way small and medium-sized enterprises (SMEs) are viewed, which has led to a completely new approach in the way they operate and they are managed. Basically, changes in the perception of the work and management of SMEs based on scientific knowledge (Zamani, 2022; Melo et al., 2023) and past practical experience clearly indicate the need for a new approach in the functioning of SMEs. Indeed, for effective and efficient use of SMEs to facilitate economic activities and thereby development, their nature and all aspects related to them must be fully understood, as these, in turn, determine the way they function and are managed in real economic conditions (Koutsopoulos, 2021).

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Today's policymakers, industrialists, owners of small and medium-sized enterprises, as well as academics and researchers, view SMEs in a one-dimensional (economic) way. One suggestion is that due to the paradigm shift that has occurred in the way SMEs operate, a new multidimensional approach is necessary to consider their entrepreneurship. Essentially, these changes, which express the new paradigm of SMEs, must be applied to achieve successful administrative, economic, and development outcomes (Koutsopoulos, 2021).

The development of small and medium-sized enterprises and entrepreneurship is conditioned by changes that are currently occurring in the economy and society, placing people, their knowledge, information, and creativity at the forefront. This implies rapid adaptation, quality, innovation, and flexibility of any economic entity (Ožegović & Sajfert, 2009).

Significant shifts in terms of entrepreneurial development are associated with upheavals in the economic development of society, particularly in transitional periods. This is best illustrated by the transition from an agrarian to an industrial civilization, then to a mechanical, and today from a mechanical to the information civilization (Paunović, 2017). These changes were preceded by transformations in the productive forces, in the means of work, in technology, knowledge, but also in the original needs of societies (Ožegović & Sajfert, 2009).

Labor-intensive processes of small and medium-sized enterprises and entrepreneurship contribute to reducing income inequality and, consequently, through poverty reduction, they perform an extremely important social function by creating new jobs for individuals from poorer strata of society and with fewer alternative sources of income. At the same time, SMEs contribute to efficient allocation of resources, thereby ensuring the establishment of a balance between greater labor availability and lack of capital.

Geographically more balanced distribution of SMEs contributes to the development and diffusion of entrepreneurial ideas and skills, reducing economic disparities between urban and rural areas. Some of the most significant developmental potentials of SMEs (DiBella et al., 2023):

- they quickly adopt new technologies, methods, and management styles,
- they quickly develop and adapt, which results in improved product and service quality and lower prices, development of innovations and new technologies, and economic growth in national economies in general.

Thanks to their flexibility, vitality, propensity to undertake innovative and risky ventures, and greater potential for specialization, SMEs adapt more efficiently than large business systems to consumer demands and highly dynamic changes in global market conditions (Radulović & Radulović, 2021). The strength of small and medium-sized enterprises lies in their size and organizational structure, which, compared to large and complex companies, is simple and flexible, allowing them to quickly understand customer desires and intentions and adapt swiftly to market changes through quick and simple

communication with the market environment. However, this structure is often inadequate for handling more complex business ventures and making and implementing plans in the domain of business internationalization, which is one of the drawbacks of these enterprises.

Small and medium-sized enterprises are characterized by below-average labor productivity because these enterprises are too small to achieve the effects of economies of scale or economies scope. At a certain level of economic development, there arises a need to create conditions where part of the production will be carried out outside of the capital-intensive sectors of economy, which is achieved by integrating smaller labor-intensive enterprises into the supply chains of large systems (Paunović, 2017). Unlike large enterprises that naturally strive to achieve a monopoly or duopoly position in the market, small and medium-sized enterprises contribute to the creation of a competitive economic structure, as a prerequisite for increasing the efficiency of the economy.

**The Importance of Small and Medium-Sized Enterprises for the Economy**

Small and medium-sized enterprises (SMEs) have a long tradition in the economy, and their development has been marked by periods of growth and stagnation. They have seen their largest expansion in recent times, especially since the early 1970s. What is new is that SMEs have become increasingly competitive with large enterprises and are successfully integrating into modern global business. While some of them still rely on traditional techniques and technologies, an increasing number of enterprises are implementing modern and advanced technologies. SMEs stand out for their high level of innovation and flexibility in their business. Although they are mostly focused on local markets, their role in international trade is becoming increasingly important (Pavlović, 2009). In conditions of limited resources, company management influences the definition of the organizational structure of SMEs, where the number of employees is usually small, especially in micro-enterprises.

One of the key goals of every economy is to develop small and medium-sized enterprises (SMEs) as a dynamic and productive sector contributing to economic development. For further growth and progress of the SME sector, stability in sources of financing is needed, especially in developing countries, where banks are the only external channel for accessing finance (Moder & Bonifai, 2020). The market for SMEs is becoming increasingly competitive, and banks recognize it as a strategic sector, aiming to expand their business by developing new technologies and risk management systems (La Torre, Martinez & Schmukler, 2018).

For example, according to a study conducted in four African countries – Kenya, Tanzania, Uganda, and Zambia (Calice et al., 2021) – the SME market is considered very large and competitive. However, the analysis identified limitations that affected the involvement of banks in SMEs, such as:

- general characteristics of SMEs,
- business volume,

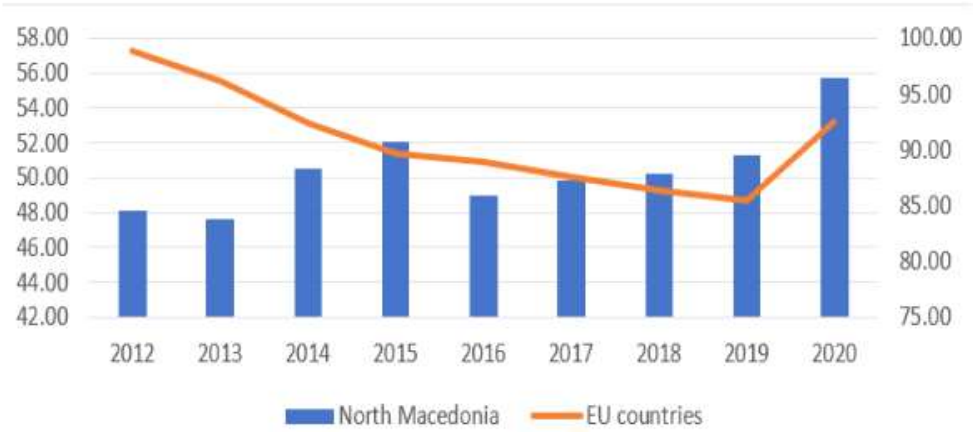
- legal framework,
- regulatory regulations,
- inefficiency of the judicial system,
- unserious approach.

Literature suggests that small and medium-sized enterprises (SMEs) are becoming an increasingly important strategic sector for the economic and social development of each country. Accordingly, banks are beginning to recognize the needs and preferences of SMEs, developing various programs and financing approaches that reduce credit risk and costs (Zayed et al., 2021). Support for the SME sector should be a continuous process and an integral part of the economic policy of each country, reflected through adequate financing sources and stability in the macroeconomic environment (Yakimova & Popovska, 2019). SMEs undoubtedly constitute a vital segment of the economic structure of each country. Universal criteria for defining and classifying SMEs include the number of employees, annual turnover, and company assets.

**Small and Medium-Sized Enterprises in the Republic of North Macedonia – Impact on Economy and Industry**

In their research, Gockov & Koleva (2023) observed the participation of SMEs in the national number of active entities in North Macedonia, and also referred to SMEs in European Union countries (Figure 1).

*Figure no.1 - Participation of SMEs in the national number of active entities – North Macedonia and European countries*




*Source:* Gockov, G., & Koleva, K. (2023). The role of bank loans for small and medium-sized enterprises. Knowledge-International Journal, 61(1), 75-80.

In Figure 1, it is visible how large the participation of micro, small, and medium enterprises is in relation to the total number of active economic entities, with SMEs participating in 2021 with as much as 99.68% of the total number of active economic entities.

In the period from 2015 to 2021, the actual participation remains the same. This confirms the benefits of their existence for the overall economic development of North Macedonia.

SMEs are characterized by adaptability to market demands, better coping with market disruptions, and the ability to operate successfully with relatively small capital investment, thus minimizing the risk of business failure. One of the most significant segments for stimulating the development of SMEs is financing. The development of the banking system and all banking institutions is an important component in the crediting process, but their role in financing SMEs is determined by the economic-financial, institutional, and organizational performance of the macroeconomic and monetary system in national economies.

Furthermore, regarding credit activity in the non-financial sector in 2022, there was a notable growth of 8.5% compared to the previous year. This growth is the result of favorable conditions created by monetary measures and regulatory changes by the National Bank of the Republic of North Macedonia (NBRM) in 2020 due to the COVID-19 pandemic, along with state measures supporting credit activity (Adam & Alarifi, 2021).

In 2021, the banking sector had a dominant share of 79.1% in the structure of total assets in the financial system of the Republic of North Macedonia, while in 2015, it was 85.8%. However, the banking sector's share of GDP in 2021 was 88.3%, compared to 75.6% in 2015 in the domestic sector.

Regarding GDP, as an indirect indicator of the depth of the financial system in the Republic of North Macedonia, it shows an upward trend, with the latest World Bank data indicating that this percentage stands at 55.75% of GDP, which is still far below the levels in developed EU countries. In some economies, private sector lending as a percentage of GDP is twice as high compared to North Macedonia. This comparison clearly illustrates that there is a wide and significant opportunity to increase the supply and availability of financial resources for SMEs in North Macedonia (Gockov & Koleva, 2023).

## Conclusion and Recommendations

Small and medium-sized enterprises (SMEs) are characterized by the ability to increase the use of new resources in the economy, with high flexibility and adaptability to market and other conditions. However, SMEs face numerous challenges, including limited operations within a specific geographic area and a small number of customers, making them dependent on local economic cycles.

These enterprises face serious obstacles to development and survival because the owners, who often perform managerial functions, are unaware that efficient and structured management is essential to their survival. Entrepreneurial spirit and business institutions are not enough on their own. In this context, it is necessary for economies of transition countries such as North Macedonia to implement specific reforms.

Considering the importance of SMEs for the overall and especially economic development of a country, each administration aims to establish certain criteria. These

criteria should meet the minimum requirements for monitoring performance and classifying SMEs, while at the same time being practically applicable.

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# INCREASING THE COMPETITIVENESS OF THE COMPANY PRODUCT THROUGH INNOVATIONS IN PRODUCTION TECHNOLOGY

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***Abstract***

*The study of modern innovative technologies is essential in the evaluation and control of the quality of the produced production. The implementation of new innovative technologies could be considered as a tool for improving the quality, characteristics and price of the produced brands and increasing the competitiveness of the enterprise's product.* ***The main goal of the present study*** *is to investigate the importance of innovative technologies for the competitiveness of the enterprise.* ***The main expected results*** *are to be established the significance and interrelationship of technologies with competitiveness.* ***The main research methods*** *used in the study are content analysis, method of comparison, intuitive and systematic approach, method of analysis and synthesis.*

***Keywords:*** *competitiveness; product; innovations; production; wine; wine producers*

***JEL Codes:*** *M11*

## Introduction

There are many different concepts and definitions of technology. The term "technology" was first introduced in 1772 by Johann Beckmann, and since then, throughout the 19th century and up to the present day, it has been applied in almost all areas of human activity and has undergone constant and continuous improvement. It encompasses fields ranging from researchers and economists to sociologists and philosophers. In short, without technology, the world today would not be what it is. The term "innovation" was first mentioned by Joseph Schumpeter in the early 20th century. We cannot talk about contemporary and modern technologies without innovation, therefore they must be considered together in the context of contemporary modernization and the prosperity of modern enterprise and production.

At its core, technology itself is characterized by certain important elements that apply to every sector of the economy. These elements include progressive reduction of heavy physical labor, reduction of production costs, high competitiveness, etc. According to Vasil Savov, based on an analysis of the defining characteristics, the following classification can be made: traditional classical technologies, advanced technologies, new technologies, fundamentally new technologies, progressive technologies, and high technologies. (Savov, V., 1992, pp. 11-12) Part of the components of "technology" are the technological equipment and the technological process. Technological equipment refers to the machines and devices

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through which the technological process is carried out, i.e., the impact on the object of labour in order to obtain the desired change in properties, shape, or dimensions. (Ivanov, I., Hr., Velchev, K. Kolarov, et al., 1981, p. 14). The technological process is a process of artificial impact on the object of labour in order to obtain the desired change in its properties, shape or dimensions (Ivanov, I., Hr., Velchev, K. Kolarov, et al., 1981, p. 12). When discussing the topic of "technology," we must inevitably also discuss the topics of '"quality" and "innovation," at least because they are closely related and complement each other. The topic of "quality" is no less popular than the topic of "technology," and therefore the concepts and definitions of quality in the literature are numerous and varied. Similar to the concept of "technology," the concept of "quality" has applications in various spheres of human activity—economics, engineering, law, etc. The quality of production is the most important economic category, closely related to human interactions in the process of production and consumption of material goods. (Alchev, Tr., 1981, p. 21). The Bulgarian State Standard (BDS-9577-72) defines product quality as a set of product properties that determine its suitability to meet certain needs and requirements in accordance with its intended use. (Banchev, B., 1975, p. 9) According to Gumenyuk, product quality is a set of properties that determine its suitability for use for its intended purpose. (Gumenyuk, V., Y., 1978). There are also numerous concepts and definitions of innovation. According to M. Porter, innovation must "be included as an improvement in technology and improved methods or ways of doing things. It can be expressed in product changes, process changes, new approaches to marketing, new forms of distribution, as well as new concepts for scope. Innovation is the result of both organisational structure and research and development activities." (PORTER, M., Wettbewerbsstrategie—Methoden zur Analyse von Branchen und Konkurrenten, Campus, Frankfurt am Main, Germany, 1999). Schumpeter views innovation in business as "reforming or revolutionising the mode of production by devising inventions or, in most cases, an unused technological opportunity for the production of a new product or for the production of an already known product in a new way, or by discovering a new source of supply of materials or a new market for goods, through the reorganisation of industry." (Shumpeter, J., Capitalism, Socialism and Democracy, Harper & Row, New York, 1975, p. 132)

Based on the foregoing, we can conclude that technology, quality, and innovation are interrelated (directly proportional) variables that influence the competitiveness of enterprise's product. A disturbance in the balance of one of these factors has an immediate impact on the others, both positive and negative.

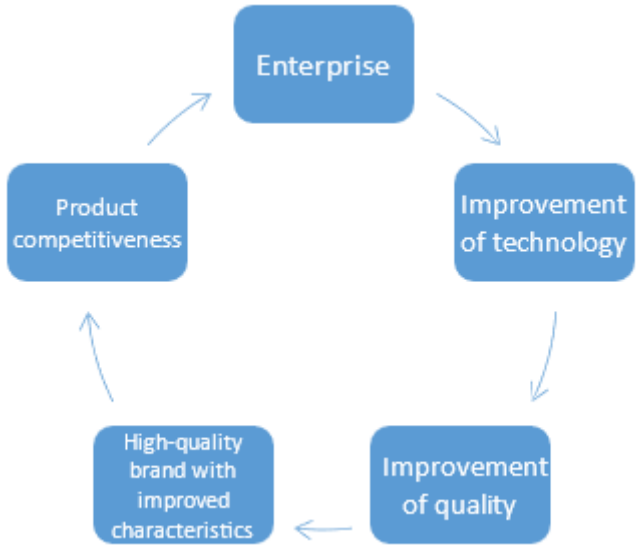
The study of existing technologies and innovations in enterprises and the quality of the products manufactured are also of significant importance in the assessment and control of the quality of the produce. If it becomes clear that consumers are not fully satisfied with the quality and characteristics of the brands offered, the management of the enterprise must determine what needs to be changed in the production technology. Thus, the introduction of new technologies and innovations can be seen as tools for improving the quality and

characteristics of the brands produced and increasing the competitiveness of the product of enterprises.

Based on the results obtained, we can derive the following model for increasing the competitiveness of the enterprise's product – improving production technology and modernising production facilities through innovations that will lead to a reduction in production costs and an improvement in the quality of the product, which in turn will increase the competitiveness of the company's product.

The relationship between the enterprise, the brand, technological improvements, enhancing the quality and characteristics of the brand, and increasing the competitiveness of the enterprise's product is illustrated in Figure 1. A characteristic feature of this model is that it is entirely based on the idea of continuous improvement of the technology of the produced brands in order to improve quality, which leads to increased competitiveness of the enterprise's product.

*Fig. 1 Model for increasing the competitiveness of the enterprise's product by improving production technology*




*Source:* Author's systematisation

For the purposes of the study, it should be noted that this model can be implemented in the process of introducing new technologies. Therefore, we can identify the following key elements of the model for increasing the competitiveness of the enterprise's product by improving production technology:

1. Enterprise
2. Brand
3. Improvement of technology

4. Improvement of quality
5. High-quality brand with improved characteristics
6. Product competitiveness

The model for increasing the competitiveness of the enterprise's product aims to improve production technology, leading to the production of high-quality brands that increase consumer satisfaction and lead to increased product competitiveness. The process of introducing new production technologies in enterprises creates conditions and opportunities for improving quality and reducing costs. The introduction of new technologies and the improvement of the quality of the brands produced leads to product refinement and improvement of the characteristics of the brands offered. This, in turn, leads to increased competitiveness. Based on the points above, we can say that in order to stay in the market and be competitive, producing companies should try to improve their production technologies through constant innovation, which will make their products more competitive.

Therefore, we can conclude that the continuous improvement and updating of all technological processes (technology) lead to reduced production costs and, consequently, to a lower final price of the product on the one hand. On the other hand, thanks to these continuous technological innovations and updates, the quality of the product is constantly improving. As a result of all these processes, the competitiveness of the product is increased, and therefore also that of the producing enterprise. To achieve this difficult task, it is important to distinguish that the producing enterprise must constantly monitor the development of new technologies and innovations related to the technology and modernisation of the production process, and strive to apply them within the enterprise itself. This determines the importance of designing a model based on reduced production costs and increased quality. It is extremely important to constantly study the competition in the industry, the market, consumers' demand and attitudes, and their satisfaction, which can be used as an assessment of the good work done by the producing enterprise.

**Conclusion**

Based on what has been written so far, we can draw the following key conclusions:

1. Technology, innovation, and quality are interrelated (directly proportional) factors that form the basis of a producing enterprise's competitiveness. A disturbance in the balance of one of these factors has an immediate impact on the others, both positive and negative.

2. The producing enterprise must constantly monitor the development of new technologies and innovations related to the technology and modernisation of the production process, and strive to apply them within the enterprise itself.

3. The model for increasing the competitiveness of the enterprise's product aims to improve production technology, leading to the production of high-quality brands that increase consumer satisfaction and lead to increased product competitiveness. The process of introducing new technologies and innovations in enterprises creates conditions and opportunities for improving quality and reducing costs. The introduction of new

technologies and innovations and the improvement of the quality of the brands produced leads to product refinement and improvement of the characteristics of the brands offered. This, in turn, leads to increased competitiveness.

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# TOWARDS INCLUSIVE, COLABORATIVE, AND COMMUNITY-ENGAGED MODELS IN HIGHER EDUCATION

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***Abstract***

*This paper explores how higher education can become more inclusive, collaborative, and connected to the communities it serves. As universities face growing calls to address social inequalities and prepare students for engaged citizenship, new learning models rooted in cooperation and community involvement are gaining importance. Through real-world examples and theoretical insights, the study looks at how teaching practices, institutional values, and partnerships can be reimagined to support meaningful student participation, social responsibility, and stronger ties between universities and their local contexts. The paper argues for a shift in higher education—from isolated academic spaces to learning environments that are open, inclusive, and built on shared human experiences.*

***Keywords:*** *Higher education; social cooperation; community engagement; student participation; educational transformation*

***JEL Codes:*** I21, I23, I24

## Introduction

Inclusive, collaborative, and community-engaged learning models in higher education represent innovative frameworks that enhance student engagement, promote equity, and cultivate meaningful connections between academic institutions and communities. These approaches prioritize the inclusion of diverse perspectives, active student participation, and the integration of experiential learning into curricula (Mauro, 2023); (*Kaliappen, 2025*). Increasingly recognized as transformative responses to twenty-first-century educational needs, these models challenge traditional academic boundaries by linking knowledge creation to social responsibility, civic participation, and ethical engagement. Nevertheless, the movement toward inclusivity and engagement faces ongoing challenges. Institutional inertia, limited resources, and insufficient faculty preparation continue to impede implementation (Nguyen & LeBoeuf, 2024), (Kinzie et al., 2008). Furthermore, social alienation, accessibility gaps, and inequitable support systems persist within academic institutions, disproportionately affecting underrepresented learners. Addressing these inequities requires sustained institutional commitment to equity, partnership, and

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responsiveness to diverse student needs. The transformation of higher education will depend on how effectively universities embed inclusivity and engagement into their strategic missions and pedagogical practices.

### Historical Context

The development of inclusive, collaborative, and community-engaged learning models in higher education reflects an evolving intersection of social justice movements, pedagogical innovation, and global reform. Traditionally, universities operated as hierarchical institutions privileging textual and empirical knowledge while marginalizing Indigenous and community-based epistemologies. Colonial ideologies reinforced exclusion by defining legitimacy through Western paradigms and dismissing oral, artistic, and experiential traditions (Mauro, 2023).

Recent decades, however, have witnessed a significant epistemic shift toward pluralism and participatory learning. The recognition of indigenous and local knowledge systems aligns with broader commitments to epistemic justice and educational equity (Mauro, 2023). These perspectives emphasize multimodal communication, ethical reciprocity, and community participation as essential components of transformative education. The expansion of nontraditional educational pathways, accelerated by the COVID-19 pandemic, has reshaped access to learning. Online and hybrid modalities have democratized participation while exposing persistent inequalities in digital inclusion (Lomellini et al., 2025). Initiatives like the Seven Keys to College and Career Readiness further illustrate the centrality of project-based and collaborative approaches for workforce and civic preparedness (Tijsma, 2023).

The historical evolution reveals a trajectory from exclusionary models of learning toward democratized, participatory, and socially responsive education. The convergence of inclusivity, collaboration, and engagement redefines higher education as an institution not merely for knowledge transmission but for civic empowerment and cultural renewal. Rooted in critical pedagogy and experiential learning, these models position the university as both a site of intellectual formation and a catalyst for social transformation.

### Inclusive Learning Models

Inclusive learning models are educational frameworks designed to ensure that all students—regardless of background, ability, or identity—can participate equitably and meaningfully in the learning process. Within higher education, inclusivity is both a moral imperative and an indicator of educational quality and relevance in an increasingly globalized and pluralistic world.

Inclusive education is grounded in three interrelated principles: equity, accessibility, and representation. First, equity involves recognizing and addressing institutional inequities—such as bias in curriculum design or faculty expectations—that inhibit student success (Morgan & Houghton, 2011). Second, accessibility emphasizes designing flexible

learning environments that anticipate diverse learner needs through frameworks like Universal Design for Learning (UDL), which advocates for multiple means of engagement, representation, and expression (Nguyen & LeBoeuf, 2024). Third, representation requires that course materials reflect diverse voices, ensuring that marginalized perspectives are visible in academic discourse (Dartmouth Center for the Advancement of Learning, n.d).

UDL challenges the notion of a standardized learner by advocating for proactive pedagogical design. Rather than retrofitting accessibility accommodations, it reimagines inclusivity as integral to course structure, teaching style, and assessment methods. This approach reframes inclusion not as remedial support but as a transformative reconfiguration of learning environments to accommodate epistemic diversity. Ivanova (2021) emphasizes that comparative insights from Bulgarian and Romanian social work education illustrate the benefits of participatory and inclusive pedagogical frameworks within higher education.

Institutions of higher education play a central role in advancing inclusivity. Inclusive practices must extend beyond curriculum design to encompass recruitment, admissions, assessment, and institutional culture. The Inclusive Higher Education Framework (2022) demonstrates that when inclusion is embedded into policy and strategy, it yields measurable improvements in retention, performance, and satisfaction (Kennesaw State University, 2022). Embedding inclusion requires systemic leadership rather than isolated interventions. Effective universities align inclusivity with broader goals of educational excellence and civic engagement, treating diversity as a strategic advantage rather than an administrative requirement (Morgan & Houghton, 2011). Leadership commitment, faculty development, and institutional assessment mechanisms are essential to sustaining inclusive reform.

Despite the broad recognition of its importance, inclusivity remains inconsistently implemented. Growing student diversity—linguistic, cultural, socioeconomic, and neurodiverse—poses complex challenges for curriculum design and faculty preparedness (Shah, Preston, & Dimova, 2023). Educators often lack resources or training to adapt pedagogy without compromising perceived academic rigor. On the other hand, student experiences underscore that inclusivity directly influences academic motivation and persistence. When students perceive learning environments as inclusive, engagement and performance increase (Ferguson & Yap, 2025). Conversely, environments that neglect inclusivity reproduce alienation and inequality. Thus, inclusivity is not an ancillary enhancement but a determinant of academic effectiveness and institutional integrity. This further proves that the future of inclusive learning lies in systemic transformation rather than partial reform, i.e. shifting educational paradigms—from individual competition to collective empowerment, from standardized teaching to adaptive design, and from abstract knowledge to socially grounded practice. Inclusive education aligns closely with the United Nations' Sustainable Development Goal 4, which calls for "inclusive and equitable quality education and lifelong learning opportunities for all" (UNESCO, 2019). Ultimately, inclusivity represents a moral and pedagogical commitment to reimagining education as a public good—a process that humanizes learning while advancing academic excellence.

**Collaborative Learning Models**

Collaborative learning represents a pedagogical approach grounded in the principle that knowledge is socially constructed through interaction, dialogue, and shared inquiry. This approach fosters intellectual engagement, interpersonal competence, and civic responsibility—skills essential for participation in pluralistic societies (Ferguson & Yap, 2025); (Dillenbourg et al., 1996). In higher education, it transforms the classroom into a participatory community of learners who engage in collective meaning-making, critical reflection, and problem-solving.

The theoretical underpinnings of collaborative learning draw upon constructivist and sociocultural theories. Vygotsky's (1978) concept of the Zone of Proximal Development emphasizes that learning emerges through guided social interaction, where peers and instructors co-construct understanding. Lave and Wenger's (1991) notion of communities of practice extends this by highlighting collective participation as central to knowledge acquisition. Paulo Freire's (1970) dialogic pedagogy further contributes to this foundation, framing learning as an emancipatory process rooted in dialogue and reflection. Following any of the forementioned theories, we may conclude that collaboration functions as both an epistemological stance and an ethical practice—transforming education into a collective and reflective endeavor.

Collaborative learning environments function best when guided by intentional design that balances autonomy, structure, and equity. Key principles include:

- **Group Composition:** Small, heterogeneous groups (three to five members) encourage diversity of perspective while maintaining interaction quality (*Scager et al., 2016*).
- **Promotive Interaction:** Students engage in dialogue that challenges and refines understanding through mutual feedback (*Dillenbourg et al., 1996*).
- **Individual Accountability:** Mechanisms such as rotating leadership and peer assessment ensure equitable participation and discourage dependency.
- **Reflection:** Structured reflection consolidates learning by linking collaborative experience to broader cognitive and civic goals (Ferguson & Yap, 2025).

These principles emphasize that collaboration is not spontaneous but pedagogically engineered to foster both cognitive depth and social cohesion. Collaborative learning serves as a bridge between inclusive pedagogy and community engagement. It should cultivate communicative, empathetic, and reflective skills for partnerships beyond the classroom—foundational for community-engaged learning (CEL) (Ferguson & Yap, 2025). Another important point is the educator's role. In collaborative contexts, educators act as facilitators rather than information transmitters. Their primary responsibility is to design structured interaction, mediate conflict, and ensure inclusivity. Effective facilitation requires sensitivity to group dynamics and cultural differences (MSU Denver, 2023). Faculty development in communication, feedback, and equity-oriented facilitation is therefore indispensable. Consequently, collaboration links academic inquiry with social responsibility, demonstrating

that education's highest purpose lies in shared problem-solving and the pursuit of collective well-being.

### Community-Engaged Learning Models

Community-Engaged Learning (CEL) represents a transformative pedagogical model that challenges traditional boundaries between universities and society. It integrates academic inquiry with civic participation, linking theoretical knowledge to community-based practice by promoting reciprocity, ethical partnership, and shared knowledge production (MSU Denver, 2023). CEL is rooted in progressive and critical educational theories that view learning as an experiential, dialogic, and socially embedded process. Dewey (1938) emphasized learning through experience as central to developing reflective, engaged citizens. Freire (1970) extended this perspective, asserting that education should cultivate critical consciousness through praxis—reflection combined with transformative action. Some scholars underscore CEL's dual role as both pedagogical and ethical practice: it educates while contributing to social justice and community empowerment (Janke, 2022); (Mauro, 2023).

While CEL fosters critical reflection, social awareness, and ethical responsibility, preparing students not only for employment but for democratic participation and social leadership, it encompasses a spectrum of activities that vary in proximity and purpose:

- **Direct Engagement:** Hands-on service such as tutoring, mentoring, or environmental restoration connects students with community needs, fostering empathy and applied understanding (MSU Denver, 2023).
- **Indirect Engagement:** Students contribute through research, policy analysis, or digital innovation that supports community organizations without direct contact (JMU, 2023).
- **Research and Advocacy:** Co-created projects between universities and communities address systemic issues—such as inequality, health, or sustainability—combining academic rigor with social impact (Janke, 2022).

This typology illustrates the adaptability of CEL across disciplines, extending from social work and public health to engineering, environmental science, and the arts. At South-West University (SWU), CEL models place particular emphasis on community voices in defining goals, assessing outcomes, and disseminating results. Such an approach reframes the university's role—from a detached observer to a civic collaborator actively participating in social transformation. A cornerstone of CEL is the principle of reciprocity—the recognition that students, educators, and community members all contribute valuable expertise. Ethical partnerships are grounded in trust, consent, and mutual benefit, ensuring that engagement avoids extractive forms of "service" that may reproduce social hierarchies (Mauro, 2023); (Campus Compact. 2022). Through reciprocity, CEL nurtures relationships that are not only educational but also equitable and sustainable.

From a learning perspective, CEL enhances students' development of key professional competencies such as communication, teamwork, and problem-solving, while

simultaneously deepening empathy and ethical reasoning. Communities benefit through strengthened institutional partnerships and the advancement of sustainable development initiatives (MSU Denver, 2023). At the institutional level, CEL reinforces social legitimacy and fulfills higher education's civic mission. Universities that have integrated CELreport tangible outcomes, including improved student retention, greater interdisciplinary collaboration, and stronger connections with local and global partners (Antonaros et al., 2008); (Dey, 2009). CEL thus emerges not as an extracurricular enhancement but as a strategic dimension of academic excellence.

A defining feature of CEL is its commitment to critical reflection, which transforms experience into learning. Structured reflection—whether through journals, focus groups, or digital storytelling—encourages students to link their community experiences with theoretical concepts and ethical frameworks (JMU, 2023). Reflection promotes reflexivity, enabling learners to interrogate their own positionality, privilege, and the power dynamics embedded in community interactions. Alongside reflection, assessment plays a vital role in ensuring accountability and alignment with CEL principles. Evaluations that involve both educators and community partners help capture cognitive, civic, and ethical outcomes, ensuring that CEL remains responsive to principles of equity and reciprocity (Janke, 2022).

Ensuring the sustainability and institutionalization of CEL within social work education at SWU requires embedding it in long-term strategic and structural frameworks. Sustainable engagement should not depend solely on short-term funding or individual faculty enthusiasm. Instead, CEL is gradually being integrated into curricula, faculty development programs, and accreditation criteria to ensure continuity and legitimacy. As Mauro (2023) notes, long-term community engagement demands shared governance, equitable resource allocation, and institutional commitment.

Despite the growing recognition of inclusive, collaborative, and community-engaged learning (CEL) as essential pillars of higher education, their implementation remains uneven across institutions. These challenges are particularly visible in the field of social work education, where inclusivity and community connection are central to both professional identity and pedagogy. The barriers that hinder the full realization of CEL span socio-emotional, accessibility, structural, and institutional domains, often mirroring broader inequities within academia and society (Kinzie et al., 2008); (Carrillo-Sierra et al., 2025). Understanding these constraints is crucial for advancing sustainable and equitable reform in higher education. First, Socio-Emotional Barriers form one of the most difficult challenges. Students from marginalized backgrounds frequently report feelings of alienation and imposter syndrome, undermining participation and persistence (Kinzie et al., 2008). Inclusive and collaborative models can mitigate these effects by fostering belonging and peer solidarity. However, when group interactions are poorly facilitated, they risk reproducing exclusionary dynamics. Another important aspect is ensuring psychological safety. It is usually associated with a learning environment grounded in respect, empathy, and recognition, which is foundational for effective collaboration.

Accessibility and attitudinal barriers also continue to restrict participation, especially for students with disabilities. Despite legislative and policy progress, many campuses remain only partially accessible, and deficit-based assumptions about ability persist in academic culture (Wuo & Paganelli 2022). Frameworks such as Universal Design for Learning (UDL) and proactive accessibility policies can significantly improve inclusiveness, but their effectiveness depends on sustained institutional investment and faculty training (Filippou et al., 2025). Beyond infrastructure, true accessibility requires a shift in attitudes—a culture of empathy, flexibility, and accountability that values diversity as an academic asset rather than a challenge to be accommodated.

At a deeper level, structural and institutional barriers reflect the traditional hierarchies of academia. University reward systems often prioritize research productivity and publication output over pedagogical innovation or community engagement. Faculty who invests in inclusive or community-oriented teaching frequently faces high workloads, limited recognition, and inadequate institutional support (Tijsma, 2023). In addition, limited funding and fragmented governance structures constrain the expansion of community partnerships. Without structural incentives—such as integrating CEL into promotion, evaluation, and accreditation frameworks—these models risk remaining peripheral instead of becoming transformative (Carrillo-Sierra et al., 2025).

Persistent discrimination and exclusionary campus climates further exacerbate inequities. Bias, harassment, and microaggressions continue to shape the experiences of underrepresented students and staff, undermining their trust and sense of belonging (Homan et al., 2024). Institutional inaction or opaque responses only perpetuate these injustices. Universities must therefore adopt transparent grievance procedures and restorative justice frameworks that prioritize student well-being, dignity, and cultural humility. Achieving inclusive excellence demands confronting structural inequalities directly rather than relying on symbolic diversity initiatives (Filippou et al., 2025).

Finally, ensuring sustainability and leadership commitment is essential for embedding inclusive and community-engaged learning within institutional culture. Long-term success requires leadership that moves beyond short-term projects to prioritize systemic integration into strategic planning, budgeting, and evaluation (Carrington, 2024). Transformative leadership, grounded in empathy, collaboration, and social justice, is crucial for aligning the mission of higher education with principles of social accountability. In order to overcome these multifaceted barriers, it requires collective responsibility and sustained institutional transformation. For social work education—and particularly within the context of South-West University "Neofit Rilski"—addressing these challenges is both a professional and moral imperative. Only through structural change, empathetic leadership, and an unwavering commitment to inclusion can CEL realize its full potential as a driver of educational equity and community empowerment.

**Future Directions**

The future of higher education—and particularly of social work education at South-West University "Neofit Rilski" (SWU)—will be shaped by how effectively institutions integrate inclusivity, collaboration, and community engagement into their strategic and academic frameworks. In an era defined by digital transformation, demographic diversification, and increasing political and societal scrutiny, these models provide a roadmap for resilience, relevance, and social impact (Nguyen & LeBoeuf, 2024). For SWU, advancing these principles represents both a continuation of its civic mission and an opportunity to strengthen its leadership in community-responsive education.

A key future priority is rethinking diversity, equity, and inclusion (DEI) in the context of social work education. Contemporary DEI discourse extends beyond representation to emphasize active participation, empowerment, and co-creation. The emerging paradigm of inclusive excellence links diversity not only to fairness but also to academic innovation and institutional sustainability (Nguyen & LeBoeuf, 2024). This approach redefines inclusion as central to both educational quality and societal relevance. To realize this vision, universities must invest in equity-oriented leadership, continuous faculty development, and data-informed policy reform, ensuring that inclusion becomes a lived institutional practice rather than a rhetorical commitment.

Another significant direction involves community engagement as a foundation for institutional sustainability. Evidence consistently shows that participation in Community-Engaged Learning (CEL) enhances student retention, civic engagement, and academic success (The Corella & Bertram F. Bonner Foundation, 2023). For SWU's Department of Medico-Social Sciences, CEL offers a scalable and context-sensitive model for addressing contemporary challenges such as resource constraints, enrollment fluctuations, and the need for stronger societal partnerships. Through such engagement, universities evolve from isolated centers of knowledge into active civic institutions—agents of local and regional development that foster reciprocal learning between academia and society.

The ongoing digital transformation of higher education also holds promise for innovation in social work training. Online and hybrid models expand access to education but can inadvertently deepen digital divides. Emerging frameworks like Universal Design for Learning (UDL 3.0) provide pathways for creating adaptive, accessible, and inclusive digital ecosystems (Nguyen & LeBoeuf, 2024). Programs such as the Bonner Foundation model demonstrate how technology can effectively bridge curricular learning and community engagement, linking digital collaboration with ethical and experiential education (The Corella & Bertram F. Bonner Foundation, 2023). At SWU, integrating such digital approaches into social work curricula can enhance flexibility, support lifelong learning, and extend the reach of community partnerships beyond physical boundaries.

Finally, advancing inclusive and community-engaged learning requires a strong research, policy, and accountability framework. Sustainable progress depends on evidence-based assessment that measures both cognitive and civic outcomes over time. Longitudinal

studies connecting CEL practices with academic achievement, employability, and community well-being can provide empirical foundations for reform (The Corella & Bertram F. Bonner Foundation, 2023). At the policy level, national and institutional frameworks should embed engagement and inclusivity as core quality benchmarks, influencing accreditation, funding, and evaluation standards. For SWU, this means aligning its strategies with European and global trends in higher education that prioritize social impact, equity, and collaborative governance.

In conclusion, the next stage of development in social work education at South-West University "Neofit Rilski" depends on the university's capacity to institutionalize inclusivity, embrace technological innovation, and sustain authentic community engagement. These future directions not only enhance academic excellence but also reaffirm higher education's ethical and civic purpose—preparing graduates who can lead social change with competence, empathy, and integrity.

## Conclusion

The movement toward inclusive, collaborative, and community-engaged learning marks a paradigmatic transformation in the role of higher education. Together, these models reposition the university as an active participant in democratic, equitable, and socially responsive knowledge production. They integrate diversity, dialogue, and civic engagement as essential dimensions of academic excellence rather than peripheral ideals.

The analysis presented here demonstrates that inclusivity constitutes the ethical foundation of education, collaboration functions as its methodological core, and community engagement represents its applied manifestation. Grounded in the theories of Dewey, Freire, and Vygotsky and informed by frameworks such as Universal Design for Learning (UDL) and the United Nations Sustainable Development Goals (SDGs), these models challenge universities to transcend disciplinary silos and institutional hierarchies. They reimagine the classroom as a microcosm of society—one that nurtures critical consciousness, empathy, and co-creation of knowledge. Nonetheless, the path toward inclusive and engaged higher education is not without barriers. Institutional inertia, limited resources, and the undervaluation of pedagogical innovation persist. Effective transformation requires systemic leadership, equitable governance, and sustained faculty development. Institutions must also address social and emotional barriers—cultivating belonging, accessibility, and cultural humility among all participants.

Looking ahead, the future of higher education depends on its ability to cultivate learning ecosystems that are participatory, interdisciplinary, and civic in orientation. By integrating inclusivity, collaboration, and engagement as interdependent practices, universities can align academic integrity with social justice. This synthesis defines not only a pedagogical reform but a moral evolution—one that positions education as the foundation of a humane, sustainable, and globally conscious society.

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