

**National and international
imperatives of ensuring
sustainable development of socio-
economic and ecological systems
in the face of structural
transformation**

Scientific monograph

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Authors:

Nadiya Andrusenko	Krystyna Kudak
Franci Avsec	Dai va Lunienė
Olesia Bezpartochna	Jūratė Makauskienė
Maksym Bezpartochnyi	Lukáš Melecký
Mieta Bobanović-Dasko	Ernesta Molotokienė
Larysa Bogush	Oleg Moroz
Igor Britchenko	Yurii Onyshko
Miglė Černikovaitė	Tamila Patlachuk
Janina Čižikienė	Martin Pavlovič
Nataliia Danilova	Markéta Pekarčíková
Marta Danylovykh-Kropyvnytska	Mykhaylo Pityulych
Serhii Dolynskiy	Barbora Prauzkova
Nataliia Dotsenko	Mykola Serbov
Božena Gajdzik	Vitalii Sharko
Jasmina Gržinić	Vladimir Shedyakov
Mykhailo Havenko	Yuliya Shkrygun
Yuliia Havryliuk	Halyna Skoryk
Margarita Išoraitė	Michaela Staničková
Nataliia Ivanytska	Olena Stanislavyk
Alenka Kavkler	Danutė Trukšinienė
Iryna Katynska	Nataliia Trushkina
Nataliya Keretsman	Rita Virbalienė
Yuri Kindzerski	Nadiia Voloshchuk
Moira Kostić-Bobanović	Anatolii Yarmoliuk
Alina Kovach	Tetiana Yemchuk
Yana Koval	Zhuldyz Yespolova
Oleksandr Kovalenko	Alona Zahorodnia

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The authors of the scientific monograph have come to the conclusion that the national and international imperatives of ensuring sustainable development of socio-economic and ecological systems in the face of structural transformations require the use of marketing and logistics tools, the implementation of sustainable models of human resource management, innovations, mechanisms of managing territories and ensuring security. Basic research focuses on ensuring sustainable structural transformations of socio-economic and ecological systems, the formation of a holistic system for ensuring national and international security. The research results have been implemented in the different decision-making models for the use of determinants of socio-economic policy, financial mechanisms, ensuring social and economic security, and managing the competitiveness of territories. The results of the study can be used in the developing of strategies, mechanisms and models for ensuring sustainable development and security of economic entities and territorial communities, the formation of ecological policy for environmental preservation. The results can also be used by young scientists in the educational process and conducting scientific research on issues of ensuring sustainable development and security of socio-economic and ecological systems.

Reviewers:

Maria Borowska – prof. dr hab., State Vocational Academy School Memorial of Prof. Stanisław Tarnowski in Tarnobrzeg, Poland

Valentin Vasilev – PhD, Professor, Higher School of Security and Economics, Bulgaria

Iryna Nadtochii – Dr.Sc. (Economics), Professor, Kherson Educational-Scientific Institute of Admiral Makarov National University of Shipbuilding, Ukraine

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INTRODUCTION

Sustainable development has emerged as a critical global priority, requiring the harmonious integration of economic, social, and environmental objectives. In an era characterized by rapid structural transformation – driven by industrial shifts, technological advancements, urbanization, and climate change – ensuring the resilience and sustainability of socio-economic and ecological systems has become more urgent than ever.

At the national level, countries are tasked with creating policies and systems that address local challenges while fostering inclusive growth, environmental stewardship, and social equity. Internationally, collaboration among nations is essential to address transboundary issues, mobilize resources, and achieve shared goals such as the United Nations Sustainable Development Goals and the Paris Agreement targets.

Structural transformation presents both opportunities and challenges. While it can drive innovation, economic diversification, and poverty reduction, it also risks exacerbating inequalities, depleting natural resources, and intensifying ecological degradation. Navigating this complex landscape requires a unified approach where nations adopt context-specific strategies while participating in global frameworks and partnerships.

The purpose of writing this scientific monograph is to justify the theoretical and methodological foundations for the formation of strategies, mechanisms and models for ensuring sustainable development of socio-economic and ecological systems in the face of structural transformation.

The object of the authors' research was current challenges and threats caused by structural changes in the world, Russia's military aggression in Ukraine, the need to form adaptive management systems of socio-economic and ecological systems capable of ensuring sustainable development of economic entities and security of territories.

The subject of the study was the determinants, mechanisms and models of ensuring sustainable development of socio-economic and ecological systems in the face of structural transformation, strategies for ensuring national and international security.

Chapter 1

DETERMINANTS OF SUSTAINABLE DEVELOPMENT OF SOCIO-ECONOMIC AND ECOLOGICAL SYSTEMS

Franci Avsec

ORCID: <https://orcid.org/0000-0002-9294-2235>

PhD in Law, Associate Professor,
Faculty of Economics and Informatics
University of Novo mesto
(Novo mesto, Slovenia)

**SUSTAINABILITY
AND A LONG SAGA
OF SHAREHOLDERS'
LIABILITY FOR
DELETED
COMPANIES IN
SLOVENIA**

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Abstract

Legal provisions on unlimited liability of shareholders for deleted inactive and non-harmonized companies limited by shares in Slovenia, based on various legal assumptions and fictions, not on the determination of the actual financial and business situation of a company, were applicable from 1999 to 2011. The unlimited liability of shareholders was subject of several legislative amendments and reviews by the Constitutional Court and (once) by the European Court of Human Rights. Even today, it seems that a sustainable balance between the interests of creditors and liable shareholders of deleted companies has still not been achieved.

Keywords: *deletion of company from register without liquidation, disregard of legal personality, shareholders' liability.*

Introduction

In the late 1980s, the countries of Central and Eastern Europe began the transition towards a market economy. During this period, structural and institutional systemic changes were launched to transform property relations (privatization, return of nationalized property etc.) and to regulate enterprises as basic actors of market economy. However, setting up a new institutional system requires

time. The legal system and economic policies tried to mitigate current economic problems (inflation, unemployment, weak or negative economic growth) by deregulation allowing a wider private initiative. However, in addition to positive results reflected in successful entrepreneurial initiatives, deregulation brought also a significant number of economic entities that were actually inactive or/and did not adapt timely to more demanding legislative requirements.

The paper presents a case study, namely the legislative approaches of Slovenia to the problem of inactive companies, companies without assets and companies that had not timely adapted to stricter requirements of corporate legislation. The regulation has been the subject of numerous legislative amendments and reviews by the Constitutional Court, and once by the European Court of Human Rights. Even after 25 years since the first enforcement of these provisions, the shareholders' liability for deleted companies is still being discussed.

Materials and Methods

The case study was conducted by studying of legislative materials, adopted laws and published judicial decisions, articles and other literature on the relevant topic. Due to volume of materials, the paper analyzes only main motives of the legislator, fundamental legislative provisions, including their amendments, essential dicta with underlying reasons from judicial decisions, as well as some viewpoints and arguments in literature. In conclusion, the paper evaluates the legislator's approach in comparison with other possible alternatives.

Research and Discussion

The Yugoslav Enterprise Act (1988)

Yugoslavia first tried to resolve the economic crisis in the 1980s by reforming the existing system of social ownership and self-management. After these attempts failed, the constitutional amendments (Amendmaji k Ustavi Socialistične Federativne Republike Jugoslavije, 1988) introduced pluralism of (social, cooperative, and private) ownership forms. The federal Enterprise

Act (Zakon o podjetjih, 1988) reintroduced instead of the so-called organizations of associated labor, enterprise as a basic economic unit and distinguished enterprises in social, cooperative, private, and mixed ownership. The Enterprise Act also allowed enterprises to be established in the form of partnerships and companies limited by shares.

Due to limited liability of shareholders and relatively low minimum capital, the limited liability company soon became the most popular organisational form. At the end of 1990, privately owned companies with limited liability (12,165) were dominant form of all Slovenian companies (14,597), while there were only 1,391 socially owned companies (Statistični letopis Republike Slovenije 1991, 1991, 67). Two years later, the number of privately owned and the total number of limited liability companies more than doubled (31,515 and 34,039, respectively; Statistični letopis Republike Slovenije 1993, 1993, 44).

The Slovenian Companies Act (1993)

After having gained independence in 1991, Slovenia adopted legislation on ownership transformation of enterprises (Zakon o lastninskem preoblikovanju podjetij, ZLLP, 1992), according to which all socially owned enterprises had to transform into joint-stock companies or limited liability companies. In the next year, Companies Act (Zakon o gospodarskih družbah, ZGD, 1993) introduced stricter and more detailed provisions on companies in comparison with the Enterprise Act, leaning on the example of German corporate legislation. This Act classified companies into two groups: partnerships in which all partners (general partnership) or at least one partner, but not all partners (limited partnership) were liable for debts of the partnership, while the silent partnership formed by an unlimited liable partner and a limited liable silent partner was not recognised as legal entity (and was cancelled in 2012). The second group were companies limited by shares (joint-stock company, limited liability company and partnership limited by shares) with minimum share capital in the amount determined by the Act. The Companies Act (ZGD, 1993) prescribed the minimum share capital at a significantly higher level than the Enterprise Act: a limited liability company could be founded with a share capital of at

least 1,500,000 Slovenian tolar (SIT) instead of the previous 2,000 SIT, while joint-stock companies had to form share capital in the amount of at least 3,000,000 SIT instead of the previous 10,000 SIT (ZGD, 1993, art. 172 and 410).

According to art. 5 of the Companies Act (ZGD, 1993), an individual entrepreneur, a company or other legal entity were liable for their debts with all their assets. While limited partners as well as shareholders in companies limited by shares, were, in principle, not liable for debts of their company, the Act nevertheless foresaw an exception from this rule. In case where shareholders or limited partners “abused their company as legal entity for pursuing a forbidden objective, for causing damage to their personal creditors or creditors of the company, violated statutory provisions using assets of the company as their own personal assets, reduced company’s assets for their own benefit or for the benefit of anyone else although they knew or should have known that the company would not be capable to meet its obligations against third parties”, they had to assume unlimited liability for debts of their company (the so called “disregard of legal personality”, ZGD, 1993, art. 6).

The Companies Act also introduced a simplified procedure for a dissolution of joint-stock company and limited liability company without liquidation. According to art. 394 of the Act, the court struck off a joint-stock company or a limited liability company from the register if all its shareholders adopted resolution on dissolution under simplified procedure and submitted the court a notarised copy of the statement in which all the shareholders had declared that all the company’s debts had been paid, that all relations with employees had been settled, and that the shareholders assumed the obligation to pay the company’s potentially remaining obligations. In such a case, company’s creditors were allowed to enforce their claims against shareholders who had made such statement within two years after deletion of the company from register had been published.

The Companies Act from 1993 imposed existing companies and other legal forms of enterprises to harmonize their founding and other acts as well as their share capital with the new provisions by 31 May 1994 (the deadline was later prolonged until 31 December 1994). If the harmonization was not carried out timely, the liquidation would have been carried out and the company would be

deleted from the register by the court *ex officio*. A special provision stipulated that in case where existing privately owned companies limited by shares had not complied with the provisions of the Act timely, their shareholders would have been personally liable for obligations of the company to creditors.

The Financial Operations of Enterprises Act (1999)

Towards the end of the 1990s, financial discipline in the Slovenian economy deteriorated significantly. From 1991 to 1998, the number of legal entities with a bank account blocked for more than 5 days increased from 919 to 8,537. On February 28, 1999, more than 6,000 legal entities had their bank account blocked for more than a year, their debts had grown to approximately SIT 84.5 billion. In addition, approximately 4,000 legal entities, which should have carried out their harmonization of founding acts, capital and operation with the Companies Act by 31 December 1994, had not fulfilled this duty even by 1999 (Predlog Zakona o finančnem poslovanju podjetij, 1999).

The option to initiate bankruptcy proceedings of inactive companies and liquidation of non-harmonized companies *ex officio*, was rejected by the Slovenian Judicial Association. It was argued that around 6,000 bankruptcy proceedings which should have been carried out would have practically prevented the courts from performing other tasks and required enormous budgetary resources for securing advances, while non-harmonized companies were very often without assets and most of them had never started to operate (Predlog Zakona o finančnem poslovanju podjetij, 1999).

The government proposed and the State Assembly adopted the Financial Operations of Enterprises Act (Zakon o finančnem poslovanju podjetij, ZFPPod, 1999), which explicitly introduced a legal presumption, or, better said, legal fiction, that shareholders of inactive and non-harmonized companies declared their will to strike the company from register without liquidation and to assume unlimited liability for company's debts.

Other provisions of the Act prescribed duty of management and supervisory bodies in companies to regularly monitor and manage business risks in order to ensure permanent liquidity and solvency. In case of illiquidity or over-indebtedness of a company, its

management and supervisory bodies were obliged to ensure liquidity within a prescribed period. If the measures taken were not successful, the management had to propose the court the initiation of forced settlement or bankruptcy proceedings (ZFPPod, 1999, art. 12).

A slight modification of the challenged statutory provisions by the Constitutional court (2002)

The statutory provisions on unlimited liability of shareholders for deleted companies were challenged before the Slovenian Constitutional court. The Court found that shareholders' personal liability for deleted inactive companies (i. e. companies which had not submitted the annual report to the competent agency for two consecutive years or were held to be without property due to having made no payments in a period of at least one year) and non-harmonized companies was in the public interest. According to the Constitutional Court, the shareholders' liability protected creditors and certainty of legal transactions, while the shareholders had the right to file an objection in the deletion procedure, although the register court sent the decision to initiate such procedure only to the company concerned.

The Constitutional Court, however, softened the regulation by taking the position that unlimited liability should be born only by so called "active shareholders" of the company, i. e. shareholders who could influence the company's compliance with legal provisions, and not by "passive shareholders" (Ustavno sodišče RS, 2002). However, this modification brought an additional burden on the courts: passive shareholders who had already paid the obligations of the deleted company until the Constitutional Court's decision came into effect could claim reimbursement from active shareholders.

Second amendments of the Financial Operations of Enterprises Act and its partly derogation by the Constitutional Court (2007)

In 2007, the Slovenian Parliament adopted (the second) amendments to the Act on the Financial Operations of Enterprises, which abolished unlimited joint and several liability of all shareholders for obligations of companies deleted without liquidation. These amendments stopped all pending proceedings by

creditors of deleted companies against (active) shareholders. The creditors were allowed to successfully object to the suspension only if they agreed to enforce claims under significantly more unfavourable conditions of the already mentioned disregard of legal personality (according to art. 6 of the Companies Act from 1993).

The amended Financial Operations of Enterprises Act was again challenged before the Constitutional Court, which ruled that the amendments interfered in acquired or expected rights and legitimate expectations of creditors of companies deleted without liquidation. The Constitutional Court also found that deleting a company without liquidation and without the liability of shareholders for the company's obligations did not provide sufficient protection for creditors and ordered the National Assembly to bring the legal regulation into line with the Constitution within 6 months (Ustavno sodišče RS, 2007).

New legislation on financial operations, insolvency proceedings and compulsory dissolution (2007)

In 2007, Act on Financial Operations, Insolvency Procedures and Compulsory Dissolution (Zakon o finančnem poslovanju, postopkih zaradi insolventnosti in prisilnem prenehanju, ZFPPIPP) repealed the Act on Financial Operations of Enterprises from 1999 and previous statutory provisions on compulsory settlement, liquidation and bankruptcy.

This Act also regulated the deletion legal entities from the court register without liquidation. The procedure of striking off from the register was carried out by the registry court if the legal entity failed to submit annual report in two consecutive business years (as stipulated by the previous Financial Operations of Enterprises Act), or if the legal entity operated at an address that did not exist, at which it had not accepted postal shipments or on which the owner of the business premises had not given permission legal entity to carry out its activities there (ZFPPIPP, 2007, art. 427).

The Act from 2007 prescribed closer criteria for status of active shareholders of a company (in particular their influence on the operations of the deleted entity with a view to ensure solvency or to propose bankruptcy proceedings of the deleted company, ZFPPIP, art. 442).

Statutory abrogation and release of shareholders' unlimited liability for deleted companies (2011) and its review by the Constitutional Court (2012)

In 2011, the Slovenian State Assembly adopted Act on Procedures for Enforcing or Releasing the Shareholders' Liability for Obligations of Deleted Companies (Zakon o postopkih za uveljavitev ali odpustitev odgovornosti družbenikov za obveznosti izbrisanih gospodarskih družb, ZPUOOD, 2011). The Act stipulated that within six months after its enforcement, shareholders of companies, which were deleted without a liquidation, could submit a proposal to the competent court for release from their obligations arising from unlimited liability for debts of deleted companies. The release was allowed neither to shareholders who committed a criminal act in connection with operations of a deleted company nor to shareholders against whom the creditors could request disregard of the legal personality of the deleted company. The Act suspended all pending litigation, administrative and enforcement proceedings in which the creditors of the deleted company asserted claims against the shareholders of these companies or their successors, until the final decision of the court on the release of obligations.

The Act also abolished the unlimited liability of shareholders for companies deleted from register without liquidation.

The review of Constitutional Court (2012)

The Constitutional Court ruled that the provisions on release of liability treated, without good reason, creditors of deleted companies less favorably than creditors of companies that ceased to exist in another way and unduly interfered in the right to ownership of creditors of deleted companies. Therefore, the Constitutional Court abrogated nearly all provisions of the Act, except the provision, which abolished, for the future, the unlimited liability of shareholders for companies deleted from register without liquidation.

Case Lekić v. Slovenia before European Court of Human Rights (2018)

In case Lekić v. Slovenia, the European Court of Human Rights (ECHR, 2018) stated that the decision to hold the applicant

personally liable for a debt of a company which was struck off from the register, amounted to an interference with the peaceful enjoyment of his possessions under Article 1 of Protocol (No. 1) to the Convention for the Protection of Human Rights and Fundamental Freedoms and that only exceptional circumstances could justify the lifting of the corporate veil. According to the Court, the Financial Operations of Enterprises Act (ZFPPod, 1999) “entailed extensive consequences for many individuals including the applicant, who, as a result, became personally liable for their respective companies’ debts”. However, the exceptional character of the circumstances justifying disregard of the legal personality should have been decided by the competent national court. Finding a reasonable relationship of proportionality between the aim pursued and the means applied, the ECHR ruled that there had been no violation of Article 1 of Protocol No. 1 to the Convention (ECHR, 2018).

Legislation on Redressing Injustices (2021) and its confirmation by the Constitutional Court (2024)

According to art. 44 of the Slovenian Constitutional Court Act (Zakon o ustavnem sodišču, ZUstS, 1994), “an Act or a part thereof which was abrogated by the Constitutional Court shall not be applied to relations that had been established before the day such abrogation took effect if by that day such relations had not been finally decided”. Because certain shareholders had been released from liability according to the Act from 2012, while others, according to the mentioned provision, remained personally liable, the State Council submitted proposal of the Act on the Redressing of Injustices Due to the Deletion of Legal Entities from the Court Register in the Period from 23 July 1999 to 16 November 2011 (i. e., during entire period when the personal liability of shareholders for the debts of deleted companies could be enforced).

Although the proposed Act foresaw, in order to redress injustices related to the deletion of companies, compensation from the state budget for shareholders who had paid the liabilities of the deleted companies as well as for creditors who had obtained a valid enforceable, but not yet enforced title against the shareholders, the title of the finally adopted Act (Act on Redressing of Injustices Due to Deletion of Companies in the Period from 23 July 1999 to 15

January 2008) reveals that the period covered was shortened to the period during which the Financial Operations of Enterprises Act was applicable, while the definition of beneficiaries was also narrowed compared to the legislative proposal (Zakon o odpravi krivic zaradi izbrisa pravnih oseb iz sodnega registra v obdobju od 23. julija 1999 do 15. januarja 2008, ZOKIPOS, 2021).

Several provisions of this Act were reviewed by the Constitutional Court in 2024 which found no inconformity with the Constitution (Ustavno sodišče RS, 2024).

Conclusions

The long saga of legislating on personal liability of shareholders for deleted companies limited by shares is the result of several factors.

First of all, the legislator, the executive authorities and the judicial system in the 1990s were too much occupied with organizational, accounting and privatization aspects, and dedicated too little attention to financial risk management in companies. The judicial system was ill equipped to register formation, organisational changes, liquidations, bankruptcy and forced settlement proceedings of numerous companies. Thus, the provisions on the *ex officio* liquidation of non-harmonized companies were not consistently and promptly implemented. Nor did the payment problems of the companies arise overnight. Monitoring financial position and operations of companies was deficient: for instance, the electronic share register was established only after the transition to the euro in 2007, while the digitalization of the land register was completed on May 1, 2011. Due to poor data support, the legislator simplistically assumed that inactive and non-harmonized companies practically had no assets concluding that their deletion would be a more appropriate solution than ordinary liquidation or bankruptcy.

The deletion of companies without liquidation and unlimited liability of shareholders for deleted companies after several years of passivity of state authorities was certainly a radical measure, at least for inactive companies. The inactivity of a company does not mean that it has no assets and threatens the security of legal transactions.

In any case, the problem with financial discipline would have been significantly smaller if the state had regulated earlier financial

operations of economic entities, including timely filing for insolvency, and if liquidation procedures had been consistently implemented against non-harmonized companies after the deadline for harmonization had expired. The situation could also have been improved by less restrictive measures, from information campaigns, counseling to less severe sanctions than shareholders' unlimited personal liability.

Instead, the legislator opted for a more radical and almost irreversible measure – the deletion of companies, whose liabilities were transferred to the shareholders, contrary to the basic concept of companies limited by shares. In this way, creditors of a deleted company were entitled to demand payment of the company's debts from its shareholders after its deletion from register. Any proposal to abolish or limit the personal liability of shareholders encroached on the rights of these creditors. The viewpoints of legal scholars and practitioners on the personal liability of shareholders differed and still differ greatly.

The Act from 2021, which attempted to balance the interests of shareholders and creditors of deleted companies at the expense of the state, was a compromise solution where not all legitimate interests could not be taken into account. Given the recent discovery that the provision on the personal liability of shareholders was inserted into the Financial Operations of Enterprises Act (1999) only after its approval by the government and before its submission to the State Assembly, it is not excluded that discussions on further amendments or reviews of legislation relating to past cases will continue (Ivanjko, 2024). It is essential, however, that from 2012, the deletion of a company without liquidation does not result in the unlimited liability of shareholders any more.

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Jasmina Gržinić

ORCID: <https://orcid.org/0000-0003-2371-1406>

Full Professor

Mieta Bobanović-Dasko

ORCID: <https://orcid.org/0000-0002-4917-9158>

PhD of Economics

Moira Kostić-Bobanović

ORCID: <https://orcid.org/0009-0002-2271-4920>

Full Professor

Juraj Dobrila University of Pula
(Pula, Croatia)

**SUSTAINABLE
TEACHING IN
TOURISM AND
CULTURE –
CURRICULUM
DEVELOPMENT AND
LEARNING
TRANSFORMATIONS**

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Abstract

The research objective is the comparison of the undergraduate study Culture and Tourism and the Business Economics study. The research was done in the spring of 2024 when 41 syllabi of interdisciplinary obligatory courses and 35 syllabi of tourism obligatory courses (business study) were collected and processed. The purpose is to identify sustainable connections between learning methods and learning taxonomy. The obligation structure and evaluation of the student's work were described in the implemented learning outcomes. The hypothesis focuses on connections between sustainable methods of organizing knowledge and results within the study discipline in a structural curriculum transformation. The field of tourism and culture is dynamic and requires constant education from teachers and the transfer of changes to students. Differences in pedagogical competencies exist, but there is also a need for innovative models of pedagogical practice (learning) through the development of tourism practice and creative education in the curriculum. Research results indicated a greater focus on understanding the lectures and less on creativity and analysis. The last two learning outcomes (to analyze and to create) are more pronounced in the case of integrated studies.

Keywords: *faculty curriculum, pedagogical competencies, sustainable teaching, digital innovations, transformations in education.*

Introduction

The research aims to determine the planned activities, teaching competencies, and knowledge levels of two study programs at a regional public university in Croatia. This study is a continuation of an academic partnership conducted by an international research team in Croatian-Swedish collaboration of sustainable academic teaching (Gržinić, Olsson, Škoro, 2019). Sustainable Teaching is a way to support teachers in their professional growth, which in turn improves the education they provide (Gardner, 2024). The purpose of this research is to learn skills improvement in interdisciplinary studies and those “in the discipline”.

A comparison of the undergraduate study programs Culture and Tourism and Business Economics (Tourism) was conducted in the spring of 2024. The research focuses on a) content analysis and comparison of the curricula of the two study programs; b) monitoring of learning methods (course requirements, planned activities, methods of evaluation); c) identification of learning outcomes (learning taxonomy); and d) conclusions on teachers’ skills based on the observation of the implementation plans of the courses of both study programs. The main research questions are: How are the pedagogical competencies related to the development of creative learning (Q1)? Are there differences between pedagogical skills within a single discipline and interdisciplinary studies and programs (Q2)? Is there a difference between teacher competencies based on an insight into the course syllabi of both study programs (Q3)?

The research results show that a uniform study is in the form of memorization of facts and knowledge and is less oriented through a holistic approach and entertaining content. Learning outcomes are measured (evaluated) through constructive alignment (Lasrado, Kaul, 2020). The researchers want to point out the popularization of education through adaptation strategies to the new generation. It provides an overview of the theoretical knowledge about the research area and the author’s conclusions based on the knowledge obtained through the desk research methodological approach.

Literature Preview

Baume (2005) emphasizes the importance of making *Intended Learning Outcomes* (ILO) attractive to students through various formats. Students are more likely to achieve these outcomes in such

circumstances (Biggs & Tang, 2007; Wang, 2011; Borda et al., 2020). Numerous scientific studies have explored the relationship between tourism and cultural studies (Richards, 2000).

Interdisciplinary studies contribute to the quality of education by fostering sustainable innovation (Yu, Yan, Li, 2022) and breaking down barriers in organizing knowledge (Armstrong, 1980; Mățã, Suci, 2011). Teachers of interdisciplinary studies require specific competencies to effectively set and justify goals through the outcomes (*Inherent Logic*, Shun, Carroll, 2018). Some research suggests that untenured faculty struggle to gain recognition for their interdisciplinary programs and research (Orillion, 2009; Zhang, 2017, Corbacho et al., 2021; Makinen, Evans, McFarland, 2022).

Interdisciplinary students involved have been capable of identifying specific skills (Costa et al., 2019). Crucial problems in interdisciplinary studies include organizational infrastructure, proactive networking, management of diverse interest groups, development of sustainable curricula, and fostering social tolerance in complex environments (Kachalov et al., 2015; Verbeek, 2022; Uthus, Qvortrup, 2023; Zenk et al., 2024).

Recent global crises have underscored the need to enhance and improve the understanding of science (Brandenburg et al., 2022; Wallwey, Design, Kajfez, 2023). However, providing faculty with resources and time can facilitate the implementation of best practices (Sommers et al., 2022). The severity of environmental crises requires a more radical curriculum with a focus on addressing real-world challenges (Batterbury, Toscano, 2018; Bear, Skorton, 2019). The curriculum should offer a concrete and transferable pedagogical prototype for educational innovation to understand various aspects of a complex phenomenon (Taylor et al., 2021; Kao, Chen, Lo, 2023).

Students with interdisciplinary affinity tend to engage more in academic activities, while others tend to participate more in social activities (Simmons, 2011; Wang, 2011). Therefore, it is necessary to monitor teaching activities in disciplines or programs that, despite their similarities, show deviations. Increasing interdisciplinary research among faculty members has resulted in (1) a faculty research interest/expertise database, (2) a research grant program, (3) a multi-college research conference, and (4) peer observation of teaching (Novak, Zhao, Reiser, 2014; Sundset, Sandvoll, 2022).

The key difference between interdisciplinary studies and others lies in the enhanced critical thinking ability, metacognitive skills, and understanding of perspectives derived from different disciplines (Ivanitskaya et al., 2002; Tami and Yvette, 2014). Teachers should focus on improving student interdisciplinary literacy (IDL) while encouraging them to develop better online physical education learning behavior (OPELB) to achieve satisfactory learning and program outcomes (Wenting et al., 2017; Zhang, Chen, Hang, 2023). Future benefits for students include communicating values, self-reflection, applying concepts in the real world, framing complex problems with others, researching in and with the real world, and imagining solutions and their consequences (Pearce, 2018).

Current knowledge in education and learning outcomes shows the need to overcome barriers and resistance when making changes or conducting studies related to today's and future economic crises. This is also important in the areas of culture and tourism, which are sensitive aspects of human activity. It is essential to examine: a) links between interdisciplinary curricula and learning outcomes, as well as b) methods of achieving goals using pedagogical skills.

Methodology

The authors had access to websites containing lesson plans and internal documentation of the faculty. The learning skills variables are defined based on the key components of creative learning (Sale, 2018), while knowledge levels are arranged according to the Taxonomy of Learning (*Bloom's Taxonomy*, 2010). The university programs are analyzed based on learning methods (seminar, presentation, self-study, memorization of facts), skills (dissemination of knowledge, linking learning results with goals, classroom dialogue, holistic approach, ICT tools, learning through fun, teamwork), and knowledge transfer (recent publications, studies, application in practice). The number of author's publications was analyzed to gain insight into the knowledge of the field/specialization and the holistic approach to the study, to determine the contribution of teachers to professional development.

The presence of ICT tools and the level of variable activities are analyzed, emphasizing a transfer from memorizing facts and focusing on success through entertainment in teaching activities, considering the global influence of VR (virtual reality), gaming

technology, and AI (artificial intelligence). Furthermore, the number of student obligations, through the relationship between the number of ECTS credits and semester obligations.

The results are presented in Table 1.1, which details the planned activities within the courses and specifically analyzes the learning skills of teachers (pedagogical competencies).

Results

Numerous subjects (syllabi) were transferred from the Faculty of Economics and Philosophy and included in the interdisciplinary program, as core field subjects. There is a higher representation of student research in the category of business economy. The category “Seminar work” is the most common in the teaching of Economics and “Teamwork” in interdisciplinary studies.

Both disciplines give equal importance to students’ presentations and publicly presenting research. Joint student activities and practical knowledge linking are more pronounced in Culture and Tourism studies.

Case studies are extensively represented in interdisciplinary studies (Table 1.1). The lower representation of case studies in Business Economics studies indicates the need to change the concept of learning based on “memorizing facts”. The dialogue in class and teamwork are represented almost equally in both study programs.

Learning has been guided and discussed by specific content. ICT tools dominate the study of Business Economics (tourism). However, there is still an insufficient application level of the learning concept of “success through entertainment”, which is understandable given the different fields of science (social vs cultural). The holistic approach in interdisciplinary study has a larger share in the overall observation. In both programs, learning outcomes are linked to research goals by a smaller percentage. Contemporary scientific literature in the field is still not a feature of the teacher’s content. The reason lies in the number of obligations of teachers at universities (teaching work and research work that is not separated).

The analysis of different forms of education revealed significant variations in several categories. Specifically, deviations were observed in the categories of seminar work and memorization of facts (learning method), ICT tools (learning skills), recent publications and case studies (knowledge transfer), and holistic

approach (learning outcomes). Orientation to individual tasks (seminar work) is more evident in the structure of economics studies.

Table 1.1

Observation of learning skillsv

<i>Competences in teaching (BE)</i>	<i>%</i>	<i>Competences in teaching (C&T)</i>	<i>%</i>
Authors' publications	12	Authors' publications	34
Dialogue in class	31	Dialogue in class	41
Case studies	47	Case studies	62
ICT tools	54	ICT tools	22
A holistic research approach	65	A holistic research approach	80
Success through fun	13	Success through fun	55
Memorizing facts	85	Memorizing facts	62
Seminar work	87	Seminar work	58
Teamwork	70	Teamwork	84

Source: authors according to Sale, 2018

The study also examined the expected levels of knowledge through learning outcomes, with the holistic approach categorized under the curriculum keywords from “Understand” to “Create” based on Bloom’s learning taxonomy (2010). The word “understand” was the most frequently represented (83%), while the word “create” had the lowest representation (34%) in the study of Business Economy. Furthermore, disparities were in interdisciplinary studies, with the word “application” being the most commonly used (72%) and the word “remember” having the lowest representation (28%). The research also highlighted the inadequate distribution of learning methods across the years of study, suggesting a need for lecturers to shift focus to problem analysis and creativity, and to address discrepancies between student obligations and expectations according to the ECTS system in both analyzed programs.

Conclusions

Both programs exhibit a lack of adaptability in designing competencies with the learning outcomes of the analyzed study program. In the Economics (Tourism) program, emphasis is placed on understanding, memorization, and evaluation. The differences between the programs lie in the areas of application and creativity.

The study plans for the Culture and Tourism study demonstrate a higher level of curriculum adaptation from various perspectives, practical enhancements to cultural topics, and a more open approach to issues. There is a weak correlation between learning outcomes and goals, indicating a need for participant observation. Teachers may have different reasons for this, such as unintelligibility, skipping topics, the speed of presentation, and obsolescence of arguments. Additionally, there is a lack of appropriate distribution of learning methods throughout the years of study and a mismatch between student obligations and expectations according to the ECTS system.

Potential solutions include organizing lectures to connect with environmental stakeholders, providing teacher training on teaching methods and university career opportunities, raising awareness about the need to bridge the “generation gap”, and addressing the impact of new regulations such as the *European Digital Education Hub* (EDEH) on teacher advancement.

Deviations in the category of creativity are not only a result of the study’s purpose but are also linked to pedagogical competencies, such as a holistic approach, case studies, and dialogue.

The emphasis on seminar work as a learning method in both studies may lead to the neglect of alternative knowledge acquisition methods. Prioritizing memorization of facts can hinder the transfer of educational content and understanding. Encouraging dialogue in classes and promoting recent publications by professors and associates is important. Course design should also explore the possibility of integrating artificial intelligence (AI) to support the goals of sustainable development set by the UN for 2030.

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Yuri Kindzerski

ORCID: <https://orcid.org/0000-0002-4432-6526>

*Doctor of Econ. Sci., Senior
Researcher*

*Institute for Economics and
Forecasting of the National
Academy of Sciences of Ukraine
(Kyiv, Ukraine)*

**THE POTENTIAL OF
DEVELOPMENT BANKS
TO ENSURE SUSTAINABLE
STRUCTURAL
TRANSFORMATIONS IN
THE ECONOMY: GLOBAL
PRACTICE IN THE
CONTEXT OF UKRAINE'S
POST-WAR RECOVERY
PROSPECTS**

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Abstract

The article highlights the importance of development banks for financial and investment support of structural transformations in the economies of countries regardless of their level of development, including modern transformations caused by the green transition and sustainable development goals. The author reveals the special functions and tools of these institutions, which, in comparison with conventional commercial banks, allow development banks to tie their activities to long-term financial support for the development of new areas and industries of the real sector, certain categories of business, and to counteract cyclical crisis downturns. The latest trends in the expansion of development banks' influence on the innovation sector are shown. Attention is drawn to the value of the world experience of development banks in the context

of the need to create a similar institution in Ukraine to address the challenges of post-war re-recovery and structural transformation of its economy.

Keywords: *development banks, structural transformation of the economy, green transition, post-war recovery.*

Introduction

For many decades, national development banks have played an important role in the processes of financial and investment support for industrialisation and dynamic structural transformations in the economies of many countries, both developed and developing. Their support has helped to create new advanced industries and sectors of production, develop small and medium-sized businesses, bridge interregional gaps, and mitigate the effects of cyclical crisis downturns. The specificity and focus of development banks' activities compensated for many of the shortcomings of conventional commercial banks in their relations with the real sector. Each wave of scientific and technological development and the promotion of new technologies and products to the market has always been supported by development banks. Today, countries are facing a major challenge of transforming and restructuring their economies on the basis of sustainable development, green transition, and circular production. Development banks of the world's leading countries are actively involved in solving this problem. In Ukraine, which is experiencing brutal military aggression by the Russian Federation, suffering enormous human and material losses, there is a problem of rapid post-war reconstruction and structural transformation of the economy, as well as taking into account the requirements of the green transition. The formation of a national development bank in Ukraine is becoming an urgent task, and in solving it, it is of great value to take into account the world experience of creating and operating such institutions.

Results and Discussion

In most countries of the world, financial and investment support for industrialisation, technological development and structural transformation in the economy is provided by financial development institutions specially created by the state. These include development

banks, investment, structural, regional, sovereign wealth funds, etc. Development banks are the most widespread.

The first development banks emerged in the second half of the 19th century during the first industrial revolution in France, Germany, Italy, and the United States of America. The rapidly growing industrial sector of these countries required significant financial resources, which conventional private banks could not provide due to both the lack of sufficient resources and the high risks of investing in new industries (Chandrasekhar, 2016). In addition, rapid industrial development required parallel long-term investments in large-scale infrastructure projects initiated by governments. These projects had significant external economic and social effects and a significant positive impact on the entire economy, but were unattractive from the perspective of commercial banks. Therefore, development banks were also responsible for financing infrastructure projects. According to some researchers, at that time the difference between development banks focused on long-term, large-scale support of industrial and infrastructure projects and conventional commercial banks engaged in short-term, small and non-risky lending was enormous, and it was development banks that became a key prerequisite for the industrial take-off of many of today's developed countries.

Today, development banks exist in most countries, regardless of whether they are developed or developing. The interest of governments in the establishment and operation of such institutions has been growing in recent decades, as evidenced by the fact that since 2000, 25% of the total number of development banks in existence have been established worldwide (The World Bank, 2018). The emergence of a significant number of new development banks is associated with a rethinking of the causes of the global financial and economic crisis of 2008-2009 and the task of overcoming the disconnection of the financial sector from the needs of the real economy. Countries also faced the challenges of overcoming the fragmentation and fragility of production and supply chains that emerged during the COVID-19 pandemic. There are serious needs to increase the defence capabilities of countries due to the growing global military and political threats as a result of the war of the Russian Federation against Ukraine, which began in 2022. In

general, the activities of development banks are increasingly linked to the need to overcome the growing social, demographic, technological, and climate challenges facing humanity.

As of 2021, there were 510 development banks in the world, distinguished by special criteria, geography, size, specialisation, and organisational business model (Xu and others, 2021). Of these, 85% were wholly owned by the state, for 10% of banks the state had a controlling stake (50-99%), and only 2% of institutions were private (The World Bank, 2018). In terms of total assets, 38% of banks were small (assets less than USD 1 billion), 35% were medium-sized (USD 1-9.9 billion), 21% were large (USD 10-99 billion), and only 2% were megabanks (assets exceeding USD 100 billion).

Most small development banks have been concentrated in poor developing countries. Although nominally small, they are large financial institutions for these countries, and given the weak or non-existent domestic capital markets, development banks are perhaps the only institution capable of providing long-term investment support to businesses on acceptable terms and within the framework of the economic development objectives set by governments.

In general terms, development banks are special financial institutions created by the state that are responsible for the financial component of the government's economic policy to ensure structural transformation. That is why researchers often refer to development banks as political banks, which translate government policy into practice. The European Commission defines development banks as *“legal entities carrying out financial activities on a professional basis which are given a mandate by a Member State or a Member State's entity at central, regional or local level, to carry out development or promotional activities”* (Colombo, Cuda, 2023). The Commission names the following advantages of development banks:

- the ability to overcome market failures better than private actors, ensuring the most efficient and strategic use of public funds;
- specific experience and knowledge of the local business environment, investor community and national policies and strategies, which is necessary to enhance the impact of EU investment programmes on investment, growth and employment;
- stimulating long-term financing in policy areas such as climate change, environment, innovation, social and human capital

development;

- implementation of EU financial instruments that go beyond the EU investment plans;
- the function of balancing the process of reducing commercial banks' debt.

Development banks specialise in providing large-scale and long-term financial support for investment projects that generate significant positive external social and economic effects and set new structural, technological and innovative long-term trends in the development of countries. At the same time, these projects cannot be fully financed by the private sector due to their high risk, long payback periods, lack of immediate direct economic benefits for private borrowers, and significant uncertainty about long-term development prospects (Griffith-Jones, Ocampo, 2018). The areas in which the DBs are focused include economic and social infrastructure, including energy, transport, communications, irrigation, housing, healthcare, and education. They also provide strong support to capital-intensive and high-tech industries, including oil production, metallurgy, chemistry, petrochemicals, and mechanical engineering. A significant number of development banks focus on supporting and developing highly productive agriculture, and they actively promote the development of export industries and the promotion of countries' exports to foreign markets. These institutions are particularly interested in providing comprehensive support to small and medium-sized businesses.

Development banks played a key role in the recovery of the economies of Europe (Germany, Italy) and Asia (Japan) after the Second World War. Later, they helped to upgrade the technology of the energy, automotive and fishing industries in Japan, and financed energy saving projects, the development of municipal infrastructure and housing construction in Germany. Today, the governments of leading developed countries are assigning a new function to development banks – financial support for research and innovation activities, starting from its early stages, support for the promotion of breakthrough radical high-risk innovative products and technologies, creation of fundamentally new areas of production and new markets for innovative products, including in the areas of achieving the Sustainable Development Goals, ensuring a green transition, circular

production, etc.

According to the business model, development banks are divided into three main types (GIZ, 2018):

- First-tier or retail institutions, which act as direct lenders that interact directly with end consumers through an extensive network of branches. They provide their services at a lower cost than conventional commercial banks, while retaining high lending risks and high operating costs. The share of first-tier banks is about 40% of all development banks;

- Second-tier institutions, or wholesalers. They act as providers of funds to local financial institutions, which in turn channel them to end users. This allows development banks to indirectly reach a larger number of clients at lower transaction costs. Second-tier development banks account for about 10% of the total number;

- Institutions with a combined model of retail and wholesale lending. Such banks account for about 50%.

By providing their services, development banks have a direct impact on improving the business climate by creating a so-called inclusive financial sector, promoting and supporting the development of small and medium-sized businesses, and reducing the volatility of the financial system to crises.

The formation of an inclusive financial sector implies the ability to provide affordable services to the vast majority of the population and businesses that meet their needs. In this context, development banks play a crucial role in ensuring that small and medium-sized businesses, agricultural producers, and entities operating in remote and underdeveloped rural areas have broad access to their loans.

SME development is promoted through financial mechanisms (concessional affordable loans in local and foreign currencies, leasing, indirect financing through financial intermediaries), guarantee mechanisms (guaranteeing loans provided by other financial institutions), and technical assistance (business development consulting with the involvement of relevant experts and business associations).

Development banks play an important role in reducing the volatility of the economy to crises and help smooth the business cycle. This is due to the fact that private financial institutions have a pro-cyclical behaviour, characterised by excessive lending in times

of growth and restrictions in times of crisis. When the system is in crisis, the information asymmetry between borrowers and lenders makes it difficult for even reliable borrowers to obtain credit. Therefore, countercyclical financing provided by development banks helps to stabilise the economy and maintain a certain level of investment.

The activities of development banks are directly related to filling gaps in the functioning of the financial sector, in particular by providing concessional long-term financing, including for the implementation of complex large-scale industrial and infrastructure projects, as well as environmental projects. Development banks also provide specific short-term financing, for example, for infrastructure development, including affordable working capital loans.

To develop medium- and long-term debt markets, development banks are actively using securitisation, which is the issuance of debt securities secured by income-generating assets. This allows them to accumulate more funds to finance infrastructure projects and involve private businesses in their implementation. Development banks also initiate syndicated loans to entities involving several private financial institutions, sharing future risks and profits with them.

Development banks also support entities through equity financing, when instead of providing loans, they become business partners of the entities, buying out a part of their shares with the right to further buy back the shares at a reduced price by the entities themselves in case of successful implementation of their projects. To mitigate lending risks, development banks use loan guarantees when entities raise private funds.

The sources of funding for development banks themselves include special budget transfers from the government, funds from international financial institutions (the World Bank, global investment funds), corporate bonds issued on the local and international capital markets, interbank borrowing, and deposits from the public.

Today, the total assets of development banks in the world amount to a whopping USD 22.4 trillion. According to experts, this is quite enough to finance large-scale investment projects and programmes to address many of the world's problems. First of all, this concerns the fight against climate change and overcoming the negative impact of

humans on the environment, as well as poverty alleviation through the creation of new high-performance jobs (Mazzucato, Glennie, 2024). Development banks can become powerful catalysts for attracting private capital to socially important projects.

The experience of development banks in the world is worthy of attention and imitation in many countries that do not yet have such financial institutions. One of these countries is Ukraine, which is currently in a rather difficult socio-economic situation as a result of not entirely successful economic reforms and the war against it by the Russian Federation.

Ukraine is facing a number of difficult tasks to ensure the stable functioning of the economy during the war and effective counteraction to Russian aggression, post-war economic recovery aimed not only at overcoming the damage caused by the war and returning to the pre-war level, but also at qualitative modernisation of the national economy and restructuring of production to eliminate the country's technological and economic backwardness. In addressing these issues, the Government of Ukraine has placed too high and not entirely justified expectations on external donor assistance from foreign countries, international financial organisations and funds, and private companies, while ignoring the available internal resources and capabilities.

It is worth noting that foreign aid will be directed mainly at restoring what was destroyed by the war, as its volumes are already being assessed based solely on the damage caused. At the same time, the problems of overcoming the backwardness of production, its restructuring and modernisation on a new technological basis will remain outside the attention of foreign donors, and the country is offered to maintain its current agricultural and raw material specialisation. In addition, the lack of motivation for foreigners to invest in the development of new high-tech sectors in Ukraine is not only due to the extremely high level of risk and uncertainty of their business prospects due to the constant military threat, but also due to their unwillingness to turn Ukraine into an unnecessary competitor for developed countries in the face of oversaturated commodity markets.

Thus, in solving the problem of technological modernisation and restructuring of domestic production, Ukraine can rely solely on its

own efforts and resources, without relying on external assistance and the interest of foreign investors. At the same time, one should not rely on domestic private initiative and private financial resources to ensure restructuring in the conditions of destroyed and paralysed by war or even underdeveloped and absent markets, a “short” planning horizon for the activities of entities that dominates not only in wartime but also in peacetime, and a corresponding shortage of “long” credit money for large-scale and complex investment projects with significant payback periods and implementation risks.

In this regard, there is an objective need for Ukraine to create its own national development bank, which will, on the one hand, accumulate significant financial resources and, on the other hand, concentrate these resources on the development of priority industries and production sectors while increasing their availability and reducing their cost for borrowers.

According to the National Bank of Ukraine, as of 1 May 2024, there were 63 banks in Ukraine, 6 of which were state-owned: Privatbank, Oschadbank, Ukreximbank, Ukrgasbank, Sensbank, and the First Investment Bank (The National Bank of Ukraine, 2024). At the same time, state-owned banks account for 53.6% of the banking sector’s total assets, or almost UAH 1.9 trillion (about 29% of GDP in 2023). Domestic state-owned banks are no different from private commercial banks in terms of their business activities, which is why the government is raising the issue of their privatisation. At the same time, it should be noted that an alternative to privatisation may be the transformation of existing state-owned banks (all or part of them) into a single state development bank of Ukraine with separate structural units in accordance with the specifics of the functional tasks that will be assigned to it in the development of certain industries, sectors, regions, etc. Currently, Ukraine has a unique chance to create such a bank without much administrative effort and without having to find significant financial resources to support its operations. However, after the privatisation of state-owned banks, this chance will be lost, and the prospects for overcoming backwardness and building a new high-tech economy, including relying on foreign capital, will be unrealistic.

In the process of forming a Ukrainian development bank, taking into account the experience of such institutions in foreign countries,

its organisational model should immediately include a number of differences from commercial banks in order to avoid duplicating their activities and meet its functional purpose. In particular, this bank should:

- have a specific mechanism for mobilising long-term resources. They should be generated from capital expenditures of the budget, revenues from privatisation of state property, issue and credit funds of the NBU, long-term loans of commercial banks obtained under state guarantees for the implementation of state investment programmes, loans from foreign and international financial institutions, funds from the issue of medium- and long-term domestic government bonds intended to cover the budget deficit, and the issue of own investment bonds;

- create a special mechanism for long-term investment in the fixed capital of the real sector, in particular through direct long-term and bond loans, and equity investments;

- in its activities, the DB should be guided by the national interests and objectives of social and economic policy, not pursue the goal of making a profit while at the same time following the break-even principle; provide guarantees to other financial institutions for loan repayment, thereby redistributing their credit risk and encouraging them to expand lending;

- work in commercially unattractive areas, thereby not creating competition for commercial banks. The main focus of lending should be on priority objects of social and economic development - non-profit, low-profit, capital-intensive, with a long payback period and high risks of losing funds.

The activities of the state development bank in Ukraine, both during the war and in the period of post-war reconstruction, should be directed at solving the following strategic tasks:

- financial support for projects implemented as part of the state investment policy; expanding access of national companies to long-term financing on acceptable terms; forming a national long-term capital market;

- expertise and financing of investment projects in priority industries and areas, new industries whose development will be of strategic importance in the future, but is currently constrained by market failures;

- placement of targeted investment state loans and opening of state-guaranteed deposits to attract households' funds with their subsequent transformation into long-term investment resources;
- implementation of investment projects aimed at levelling regional imbalances;
- financial, credit and guarantee support for the current and investment activities of small and medium-sized businesses;
- support for the foreign economic activity of entities;
- lending to real sector enterprises experiencing a temporary shortage of working capital, while simultaneously providing cash and settlement services to these enterprises;
- performing agency functions in the implementation of investment projects financed by international organisations; providing guarantees for loans from foreign or domestic financial organisations;
- increasing the share of loans provided for technological modernisation, financing programmes to improve the skills of enterprise staff, improve management systems and increase labour productivity;
- advising companies on their development, restructuring, raising loans and issuing securities.

Active participation of the domestic development bank in economic transformations should be ensured through:

- preferential support for specific technologies and new product development, rather than individual industries, whose development will provide significant positive externalities;
- close cooperation with business in decision-making while maintaining sufficient autonomy of the bank. Forms of such interaction may include coordinating advisory bodies at the bank consisting of representatives of the government and private business, joint examination of promising investment projects, and participation of business representatives in the bank's board of directors;
- giving preference to public-private partnerships in the implementation of tasks to prevent inefficient investment of public funds in a timely manner, increase overall investment activity of the private sector and protect investments from macroeconomic and political risks;
- building the bank's management system based on the analysis

of the results obtained and creation of mechanisms to counteract potential risks; independent external control over the bank's activities.

In addressing the main tasks, a development bank in Ukraine should interact with the relevant authorities and participate in the development and adoption of relevant economic decisions. This approach will help to solve the problems of financial and investment support for post-war reconstruction, overcoming backwardness, modernisation and development of Ukraine's economy on a new technological basis.

Conclusions

Development banks have proved to be an important and effective instrument of financial support for the industrialisation and structural transformation of economies in many countries in the past decades. In the future, the role of these institutions will grow. This is due to: first, the unfolding of a new stage of structural transformations in the global economy associated with the transition to sustainable and green development and the corresponding need for investment support for the establishment of new economic sectors; second, the growing uncertainty of the results of innovative processes for obtaining new "green" technologies and products; third, the aggravation of crisis manifestations in the global economy due to the decline of old industries and the emergence of new ones, in connection with which the countercyclical function of development banks will become especially relevant. An important feature of the leading development banks is the expansion of their sphere of influence and support of entities at all stages of the innovation cycle – from basic research and applied development to the creation of new production facilities and the launch of new products. In Ukraine, which is experiencing military aggression from the Russian Federation, there is an urgent need to create its own development bank not only to provide financial and investment support for structural transformations in the economy, but also for the country's rapid post-war recovery. The best international experience of such financial institutions can be effectively applied in Ukraine.

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Yana Koval

ORCID: <https://orcid.org/0000-0001-6578-2996>

PhD (Public Administration), Associate Professor, Associate Professor of International Management Department State University of Trade and Economics

Alona Zahorodnia

ORCID: <https://orcid.org/0000-0003-2741-1953>

PhD (Management), Associate Professor of the Department of International Relations and Political Consulting Institute of Law and Public Relations Open International University of Human Development "Ukraine" (Kyiv, Ukraine)

THEORETICAL ASPECTS OF ENSURING THE ENVIRONMENTAL FUNCTIONAL COMPONENT AS AN ELEMENT OF THE INTEGRATED SYSTEM OF ECONOMIC SECURITY OF THE ENTERPRISE

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Abstract

Environmental security is an integral part of the national security of the entire society. In the national security system, the main role is assigned to economic security along with its important components, namely maintaining social peace in society, ensuring the country's defense capability, and achieving food independence. All these aspects of ensuring integral security in the process of socio-economic development of society are deeply interconnected: military security cannot be ensured with a weak economy; ethnic and religious conflicts in society undermine the foundations of national security; there can be no effective economy when the environment is degraded and natural resources are depleted.

Keywords: *environmental component, integrated system, economic security, enterprise, economic and environmental security.*

Introduction

The experience of the world's leading countries proves that the backbone of the economy of the most successful countries is

industry. At the same time, the activities of industrial enterprises is directly related to the significant use of resources of the environment and, at the same time, the production of production wastes in the form of emissions of pollutants into the air, their discharge into water bodies and disposal in designated areas.

It should be noted that the operation of production facilities in the latest industrial industries, such as electronics, precision engineering, aerospace engineering, bioengineering is more environmentally friendly, but in view of the intensification of global production involving increasingly growing amount of natural resources, the anthropogenic burden on the biosphere is becoming more and more burdensome from year to year and is now is already reaching critical levels.

Therefore, at the present stage of human development, the issue of environmental pollution is one of the most is one of the most pressing issues at the current stage of human development.

Materials and Methods

In recent years, economic science has paid much attention to to ensuring environmental safety as an important component of sustainable socio-economic development of the whole society. The fundamentals of economic and environmental sustainable development of society are reflected in reports and publications of well-known foreign and domestic authors: A. King, E. Laszlo, E. Pestel, O. Belarus, Z. Gerasymchuk, M. Zgurovsky, O. Osaulenko, A. Romanovych, I. Syniakevych, A. Ursula, T. Tunica, and etc.

At the same time, many theoretical issues related to the problems of ensuring economic and environmental security have not been fully studied, the factors that increase economic and environmental tension have not yet been sufficiently analyzed, and there is a lack of comprehensive studies of economic and environmental problems, taking into account territorial peculiarities, which, in turn, contributes little to improving the environmental situation in the country.

The theoretical and practical significance, insufficient study of these problems determined the target setting of the of the study.

Results and Discussion

Today, in the course of business activities of any enterprise, the problems of ensuring the environmental functional component of the economic security of the enterprise are at the forefront, along with other most important tasks. The activities of production facilities constantly increase the negative impact on the environment. The main task of every large and medium-sized company should be to reduce the level of negative impact on the environment. Measures to minimize such negative impact are individual for each business entity and depend on a number of indicators, such as climate, geographical location, effective measures of sanitary and epidemiological supervision authorities, etc.

Practice shows that today most manufacturing enterprises ignore environmental safety as an integral part of economic security. This is most likely due to increased competition and the desire to reduce the cost of finished products and improve their quality. As a result, many medium-sized enterprises, faced with limited financial resources, neglect environmental safety measures.

In the course of their operations, industrial enterprises must, in accordance with all international and national regulations, carefully monitor compliance with the maximum permissible concentration of harmful substances released into the environment. For most companies, these measures require huge investments in treatment facilities and measures to ensure the environmental friendliness of their products. The only effective remedy for such producers is to be fined heavily for violating national environmental laws, which can subsequently seriously undermine the company's financial position (Encyclopedia of Modern Ukraine).

The countries with the most polluted air include Saudi Arabia, Qatar, Egypt, Bangladesh, and Kuwait. New Zealand, Brunei, Sweden, Australia, and Canada have the cleanest air.

During the war, Ukraine faced another huge problem: a large number of enterprises simply relocated. It is difficult to trace their location because environmental registers are now closed. This raises the issue of non-compliance with the Aarhus Convention, i.e., citizens' access to environmentally relevant information. Regions that were conditionally considered clean before, such as Ternopil, Lviv, and Volyn, are no longer so (Reporting on air emissions...).

The problem of ensuring environmental safety is the main problem of each state individually. The environment can have a significant impact on most public health indicators. For example, the environmental safety of an enterprise affects the adaptation of residents to certain environmental conditions and the incidence of diseases. In addition, it can have a significant impact on the stock of physical strength of the population and even on the reproduction rate.

According to the World Health Organization, on average, environmental conditions contribute 30% to the health of each country's population.

For example, a number of environmental researchers have found that people living near industrial plants get sick almost twice as often as people living in cities with a more favorable environmental situation. The correlation indicates that there is a direct link between the incidence rate and where people live near industrial enterprises.

As for Ukraine, the main source of air pollution here is emissions from industrial enterprises, which account for 65% of all harmful substances released into the air. However, the sources of pollution may vary from city to city. Prior to the full-scale invasion, industry was the main source of air pollution in cities such as Mariupol, Kryvyi Rih, Zaporizhzhia, or Dnipro, while in Kyiv, the main cause was motor vehicles (Fedorenko et al., 2003).

All the statistics presented here show that the problem of environmental safety is gradually becoming a concern not only for city residents but also for enterprises themselves.

Environmental safety is the level of protection of vital interests of a person, as well as society, the environment and the state, from real or potential threats caused by anthropogenic or natural factors. The environmental security system of any country is a set of state measures (legal, economic, technical, humanitarian and medical) aimed at maintaining a balance between its ecosystems and anthropogenic and natural pressure, developing mechanisms for improving and preventing environmental degradation, and taking care of people's health. It depends on the availability of natural resources and geopolitical factors. Determining the basic principles of environmental security and environmental improvement policy should be based on the results of interdisciplinary scientific research on the relationship between nature and society and the possibility of

a comprehensive solution to the problem of preserving and protecting the natural environment (Mak-Mak, 2003).

Thus, the environmental safety of an enterprise can be defined as a set of measures aimed at bringing business entities into compliance with the sanitary, epidemiological and environmental standards of national legislation.

For a more complete understanding of the essence of environmental safety of an enterprise, let us present the goal, objectives, object and subject of environmental safety of an enterprise in Figure 1.1.

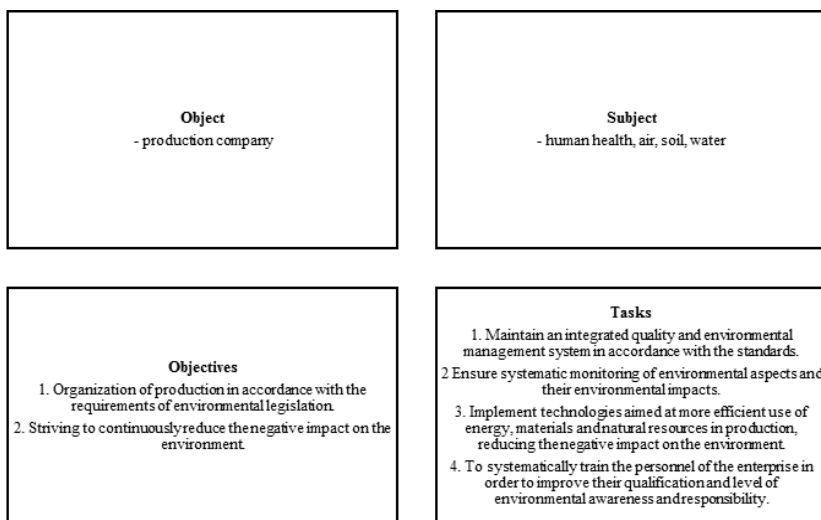


Figure 1.1 Goals, objectives, object and subject of environmental safety of an enterprise

Source: developed by the authors

Compliance with international and national environmental legislation makes companies more competitive, and therefore they can participate in international projects, because for representatives of developed countries (especially European ones), environmental safety can be a decisive factor in deciding who to award a particular international project to. As for the national level of environmental safety, it is no longer related to the economic benefits of cooperation, but to the costs of environmental protection measures.

Recently, environmental regulatory authorities have focused their attention not only on environmental protection measures but also on the impact of harmful emissions directly on the health of employees of a particular organization. If a situation arises in which the negative environmental impact on the health of employees is significant, the company may fail to pass certification, and there may be problems with obtaining licenses or quality certificates. As a result, the company may not only be fined, but also suspended for a certain period of time until the reasons for the suspension are eliminated (Zahorodnia, 2023).

In simple terms, many people in our society think of huge smokestacks from a large factory when they think of pollution. However, environmental pollution is understood not only to mean the emission of harmful gas mixtures, but also wastewater, soil contamination, and noise.

There are two types of sources of environmental pollution from enterprises: the technology of the production process itself; technical equipment of the production, i.e. pipes, drainage systems, water pipes.

Enterprises can store waste, which is an unorganized source of pollution. If the company takes measures to create special systems that reduce the negative impact of emissions on the environment, these are organized sources of pollution.

In addition, there are internal and external factors that affect the environmental safety of production. Internal factors include shortcomings made during the design, development, and mastering of manufactured products, which subsequently have a negative impact on human health. External factors include legal regulations for non-compliance with environmental legislation (Herasymchuk, 2004).

To ensure effective work in the environmental field, the company identifies the main areas and necessary conditions for ensuring environmental safety.

Thus, the environmental functional component as an element of the integrated system of economic security of an enterprise has become very relevant in recent years because it directly affects consumers of products manufactured by business entities, the health of people in close proximity to production facilities, and the economic performance of the enterprises themselves.

Table 1.2

Main directions and necessary conditions for ensuring environmental safety

The main areas of ensuring environmental safety	Necessary conditions for ensuring environmental safety
Improving management in the in the field of environmental protection	Utilization and improvement of the of the legal and regulatory framework
Improving the emergency management system	Use of economic, organizational and administrative mechanisms
Reduced volumes and reliable disposal of all waste	Development of the environmental management system
Improving the environment in places where people live	Creation and development of a system of continuous environmental education and upbringing
Minimizing pollution of air, water and soil pollution	-

Source: developed by the authors

An integrated system of economic security is a set of interrelated organizational, economic and legal measures taken to protect an enterprise from real and potential actions of individuals and/or legal entities that may lead to significant economic losses.

The development of a comprehensive system for ensuring economic security of a business entity should be based on a certain concept. Its constituent elements are: goal, objectives, principles, strategy, object and subject of ensuring economic security (Koval & Zahorodnia, 2023).

The purpose of a comprehensive system of economic security is to minimize the impact of internal and external threats to the economic well-being of an organization, i.e. its financial, material, information and human resources. The main focus of the economic security system should be on economic, legal and organizational measures. Since they form the basis of economic security, technical, physical and other measures play a less important role.

The achievement of these goals is facilitated by specific tasks to ensure economic security, such as

- forecasting internal and external threats to the integrated system of economic security;

- prevention of all possible threats to the organization;
- identification, analysis and assessment of threats facing the business entity;
- responding as quickly as possible to real threats and making decisions to eliminate them (Zahorodnia, 2022).

The most effective comprehensive system for ensuring economic security can only be one that is based on a certain foundation, i.e. a number of principles. This has been argued by many leading economists, including W.P. McMack, who defined the following principles (Mak-Mak, 2003), shown in Figure 1.2.

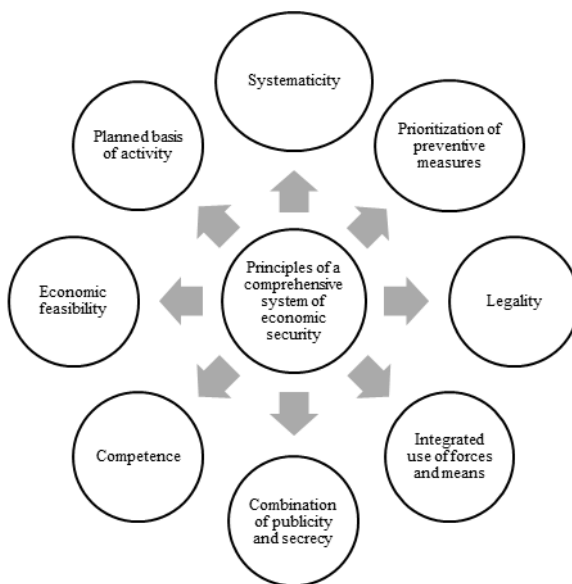


Figure 1.2 Principles of a comprehensive system of economic security

Source: developed by the authors

However, the list of these principles is open and can be supplemented. In our opinion, this list can be supplemented by the principle of continuity, which provides that the functioning of the integrated system of economic security is carried out exclusively on a permanent basis; the principle of mandatory differentiation of measures, i.e. measures aimed at eliminating internal and external

threats directly depend on the nature of the threat and the severity of the consequences; the principle of full control of the system of economic security by the management of the enterprise, i.e. the integrated system should be focused on inter

The next element of the integrated economic security system is the subject and the object.

The object is the efficient operation of a particular enterprise and stabilization of its economic position in domestic and foreign markets. Specific objects of protection are often resources: financial, material, information, personnel, etc.

An entity is a more complex organism, since its operation is determined not only by the characteristics of the object itself, but also by the elements and indicators of the external environment surrounding the enterprise. As a result, there are two groups of subjects of a complex system: internal and external (Rusnak, 2013).

External actors usually include bodies of various branches of government (legislative, executive, judicial) whose main activity is to ensure the security of all participants in the country's economic activity. These bodies form the legislative basis for the functioning and protection of economic activity in its various aspects and ensure its implementation.

Internal entities are specific individuals who protect the economic security of each particular enterprise. This includes both the company's own security staff and employees from third-party organizations specializing in protecting the activities of organizations.

Internal actors of the integrated system of economic security carry out their activities following a certain strategy. A strategy is a plan to achieve a goal in the long term. The main types of enterprise strategy are general, special and functional.

An example of a functional security strategy is a strategy whose main element is a system of preventive measures, where the security service is a kind of controller. This system is implemented through the organization's ongoing, regular work to verify counterparties, analyze proposed transactions, examine documents, comply with the rules for handling confidential information, etc.

Another type of functional strategy is the strategy of reactive measures, which is aimed at eliminating the consequences of the

actual existence of threats to economic security.

The integrated system of economic security consists of seven main components: personnel, financial, technical and technological, information, environmental, legal and power (Ivanova, 2011).

All components of economic security are inextricably linked and have a direct impact on each other. In this study, we will consider the impact of environmental threats on the integrated system of economic security of an enterprise.

The impact of environmental threats on the human resources component of economic security is a threat not only to the health but also to the lives of employees. Every organization is obliged to monitor the rate of harmful emissions into the environment. Failure to comply with these measures may have a detrimental effect on the health of the employees. For example, in case of non-compliance with environmental requirements, employees working in hazardous and dangerous industries may suffer not only from the intensification of the body, but also from poisoning with harmful vapors and heavy metals, which can have a critical impact on the entire life of a particular employee. In addition, one of the main problems may be increased staff turnover caused by high levels of environmental pollution and its impact on human health, as well as a decrease in labor productivity due to increased fatigue and illnesses among employees (Zahorodnia, 2023).

A number of specific measures aimed at mitigating this type of threat include not only compliance with environmental standards and requirements, but also mandatory and voluntary insurance of employees against accidents at work and their lives. The main actions aimed at increasing the level of personnel protection against the impact of negative environmental factors include the following measures:

1. Firstly, providing employees with personal protective equipment when working in hazardous and dangerous industries (overalls and special equipment).
2. Secondly, sanitizing the premises where there is interaction with harmful substances.
3. Thirdly, measures aimed at compensating the staff for harmful effects (additional payment, “milk for harmfulness”).

The impact of environmental safety threats on the financial

component of the company's economic security is in large financial losses, such as fines for non-compliance with environmental, sanitary, and epidemiological legislation.

In addition, an organization's compliance with environmental standards and sanitary and epidemiological requirements for the products it manufactures can significantly increase the competitiveness of a particular organization at the national and international levels of economic relations. The European market is particularly demanding of the environmental well-being of production, and entry to it may be not only limited but also impossible if the production and its products are dangerous to the well-being (physical or psychological) of the consumer. Products manufactured in an environmentally favorable and safe area are more in demand on the market.

The environmental functional component also directly affects the legal component. This impact is the threat of losing the company's image as a result of a high level of litigation in the environmental sphere. And the image of an enterprise is one of the most important factors in promoting products by large manufacturers. The higher the degree of environmental safety of an enterprise, the greater the market share that a particular manufacturer can take, using the image of an "environmentally friendly product."

With regard to the impact of the environmental component on the technical and technological component of economic security, the main threats that affect the financial result of an enterprise include:

1. Damage due to the deterioration of the production line and production assets, which can lead to significant losses of metal and other hazardous substances;
2. Loss from the depreciation of production technologies that affect the energy consumption and energy intensity of production, in particular, water, air and the territory surrounding the production;
3. Losses due to unplanned environmental impacts on the maintenance of production assets, resulting in a reduction in the service life of production equipment (Herasyanchuk, 2004).

In Figure 1.3 shows the impact of environmental threats on the integrated system of economic security of an enterprise.

One of the most important elements of the enterprise security system is the mechanism of its provision, which is a set of legislative

acts, legal norms, incentives and motives, methods, measures, forces and means by which the subject influences the object to achieve security goals and solve the tasks facing it. The forces and means used are usually divided into several groups: financial, personnel, organizational, technical, informational, legal, intellectual, etc. They are used to solve the following security tasks.

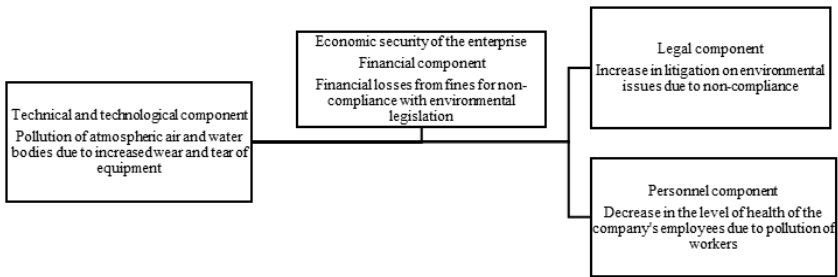


Figure 1.3 Impact of environmental threats on the integrated system of economic security of an enterprise

Source: developed by the authors

Conclusions

Thus, environmental security is an integral part of the national security of the entire society, and in the national security system, the main role is assigned to economic security with its important components, namely maintaining social peace in society, ensuring the defense capability of the of the country, and achieving food independence.

Environmental threats have an adverse impact on the entire integrated system of economic security of an enterprise. Reducing the impact of negative environmental factors should be one of the main strategic objectives of each particular enterprise that seeks to operate in the market in a long-term and efficient manner. It should

also be noted that very little attention is paid to ensuring measures to counteract environmental threats, and this can lead not only to significant financial losses, but also to a certain suspension of activities and even the suspension of production.

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Oleg Moroz

ORCID: <https://orcid.org/0000-0001-7336-8023>

PhD in Economics, Associate Professor, Associate Professor at the Department of Management and Administration Engineering Educational and Scientific Institute

Zaporizhzhia National University (Zaporizhzhia, Ukraine)

DETERMINANTS OF SOCIO-ECONOMIC POLICY IN THE CONDITIONS OF OVERCOMING THE CONSEQUENCES OF WAR

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Abstract

The work is devoted to highlighting the possible determinants of ensuring the sustainable development of Ukraine in the post-war period on the basis of the formation and implementation of its national security strategy. Focusing attention on national security as a system that integrates various security aspects (functional security), attention is paid only to economic security as the foundation of national security, as well as social security as its goal. Accordingly, the policy aimed at the implementation of the national security strategy, which should ensure both overcoming the consequences of the war and ensuring sustainable development of the country in the future, is considered from the point of view of separate economic and social factors that stimulate the integration of separate realities of social reality, filling them the content of sustainable development. The characteristics of the proposed determinants of economic policy are devoted to the choice of a possible model of the country's economic development, and with regard to social policy, attention is paid to balancing the interests of its various objects – the state, society as a whole and individual territorial (regional)

community, in particular, business entities and individual personalities. Among the determinants of socio-economic policy in the conditions of overcoming the consequences of the war, the implementation of the model of human security based on innovative economic development of the country is proposed.

Keywords: *determinant; model; policy; security; strategy; sustainable development.*

Introduction

In modern conditions of growing crisis challenges in various aspects of the existence and development of both individual states and their associations, as well as the world community as a whole, the study of the concept of sustainable development as “development that satisfies existing needs without threatening the ability of future generations to realize their needs” (Daly & Townsend, 1993), becomes particularly relevant. At the same time, in the triple “3R” model (acronym for *People, Planet, Profit*) of sustainable development, both in the current conditions of the military conflict in Ukraine, and to ensure overcoming its consequences in the future, special attention needs research related to both with the definition of national security as a whole, as well as with the study of its individual determinants capable of influencing the economic evolution of society (*Profit*), as well as the social (*People*) and environmental (*Planet*) aspects of sustainable development.

Materials and Methods

In modern conditions of worsening relations both between individual states and their regional associations, as well as in the globalized world as a whole, the determinant of the development of society, as a universal factor that stimulates the integration of individual realities of social reality, filling it with content determined by the functional orientation of this development, becomes the provision national security of individual countries and certain state associations (unions, blocs, etc.). The definition of the very concept of “*security*”, in its broad sense, from a methodological point of view is interpreted as the achievement of such a state of the object that reflects the level of stability and stability of all its subsystems sufficient for its existence and further development. From the point

of view of ensuring national security, we can talk about the country's ability to timely identify, prevent and neutralize real and potential internal and external threats of a diverse nature (military-defense, political, economic, social, technical-technological, etc.) to its vital national interests, as well as about the method of provision in society (on the basis of unconditional enforcement of laws and maintenance of law and order, development of international cooperation based on partnership, etc.) a certain level of stability and predictability that will ensure both the sustainable development of this society as a whole and its individual components, in particular (Antonov, 2017). At the same time, the current legislation of Ukraine, on the one hand, equates the concept of national security with the concept of state security, and on the other hand, the list of spheres of national security has been significantly narrowed, such as: a) military security; b) public safety and order, civil protection; c) cyber security. Regarding other spheres of national security, their role and place are supposed to be defined in the National Security Strategy (Zakon Ukrayiny, 2018). This approach, in our opinion, limits the possibilities of determining both the determinants of the safe existence of the country and society, as well as their sustainable development for a strategic perspective, as well as the development of various policy components for the implementation of the specified strategy at the level of the state and its regions.

The purpose of this work is to characterize the determinants of the socio-economic policy of the development of society in the conditions of overcoming the consequences of the war.

Results and Discussions

Based on the thesis that *national security* is a synergistic concept that integrates a number of aspects of its provision, it is possible to consider national security as a certain set of measures to create conditions for the stable and safe implementation of various functions that correspond to the vital national interests of the country and society. That is, it would be appropriate to consider national security as an integration of certain *functional security*, each of which focuses attention on separate aspects of national security. In particular, for example: a) military and political (international (external) and internal political) security, which are the content of

state security, reflect the military and political aspects of national security; b) the safety of society and the safety of the public-state system – social-public aspects; c) currency, financial and economic security – financial and economic aspects; d) social security – socio-humanitarian aspects; e) information and cyber security – informational aspects. In addition, national security must also take into account resource-technological, infrastructural, energy and other security aspects of the existence and development of the state as a whole and its individual regions, in particular.

Thus, the formation and implementation of the *national security strategy*, as determinants of ensuring the existence and sustainable development of society, in our opinion, should be similar to the formation of the general (general-corporate) strategy of management objects by integrating all its functional strategies in compliance with existing principles, methods norms and rules provided by strategic management. Each of the functional security (separate aspects of national security) must find its reflection in the national security strategy of Ukraine not only as its separate elements (components), but form an integral fragment of a holistic strategy that determines the direction, priorities and directions of the development of state policy in all areas that will ensure national security. The purpose of the strategy, as a vision of our desired state from the position of “*where we should be*”, is to determine the directions of formation and implementation of the appropriate policy to achieve this position based on the position of “*where we are*” here and now.

From the point of view of forming the foundations of Ukraine’s existence in the post-war period and ensuring its sustainable development in the future, in our opinion, issues related to ensuring economic and social security and determining the determinants of appropriate policies aimed at implementing the national security strategy require special attention. It is a well-founded and balanced economic and social policy that can become, provided that the appropriate level of state security is achieved, a determining factor in successfully overcoming the consequences of the war and sustainable development in the future.

Economic security, as an integral part of national security, reflects the state of the economy, which ensures both the effective satisfaction of the economic needs of society on the basis of

sufficiently high and stable economic growth, as well as state control over the movement and use of national resources and the protection of the country's economic interests at the national and international level levels. It is economic security that is the constituent part of national security that provides its foundation and material basis (Nyzhnyk et al., 2020).

Thus, the formation of the *economic policy* of both the country as a whole and its individual regions and industries, in particular, should provide for the creation of such a state of the economy and its various segments (material, financial, banking, investment, tax systems, etc.), in which it is possible to ensure sufficient economic and defense potential, guaranteed protection of national interests, as well as ensuring the minimum necessary volume of production of goods and provision of services for its independent survival, development and economic well-being of various layers of society. Economic policy in the conditions of overcoming the consequences of the war should, in our opinion, be primarily aimed at implementing the general strategy of national security of the country by ensuring the protection of the economic system as a whole and economic relations, in particular, both at the national and international levels from existing and potentially possible threats and negative effects of the internal and external environment. Therefore, among the *objects (levels) of economic policy* should be not only the economic system of the country as a whole and the existing economic relations, but also individual elements of this system – natural wealth, productive and non-productive funds, real estate, financial resources, human resources, economic structures, certain public associations, individual individuals, etc.

During the formation of the country's economic policy as a tool for the implementation of its national security strategy, it is necessary to take into account a number of factors that restrain economic development, in particular, such as: a) limited own resources (material, financial, human, etc.) to overcome the consequences of the destruction caused by the war, for the reconstruction of both the infrastructure (energy, logistics, financial, etc.) of the country as a whole and its individual regions, in particular, and for the restoration of individual business assets and production capacities; b) significant demographic losses in the

country as a whole and in its individual regions, in particular, caused by the war (both as a direct result of military operations and long-term migration of the population, which creates the prerequisites for its transformation into labor emigration, primarily for qualified labor), which is reflected both in the labor potential of the country as a whole and in its innovative potential, in particular (reduction of the scientific base for fundamental and branch scientific research, as well as research and design institutions); c) the presence of an unfavorable (as a result of the existence in the post-war state of a number of risks related to both the security challenges of the post-war state and the presence of significant debt of the country to partner countries and certain transnational structures as a result of the war) for the development of domestic business investment climate in Ukraine; d) aggravation of competition in the post-crisis period both within the global economy as a whole and in individual industries and activities, in particular, using methods of unfair competition, etc. These and a number of other factors require the determination of the determinants of economic policy in relation to *the model of the development of the economy* of Ukraine in the post-war period, which will determine the direction of economic processes and the connections between them.

Among the possible determinants of economic policy can be the development of: a) resource economy – an economy based on extraction, primary processing and delivery of raw materials and minerals; b) industrial economy – an economy based on advanced industrial production; c) innovative economy – an economy based on the intelligence of innovators and scientists, embodied in the development of high-tech and informational spheres of the economy, etc.; d) financial economies – economies based on the concentration of finance (capital) and financial operations, etc. (Harmatyi et al., 2023).

At the same time, it is necessary to take into account the fact that: a) the resource economy, which has been characteristic of Ukraine for the last decades, will not provide economic opportunities to overcome the consequences of the war and sustainable development; b) the revival of the industrial economy, which was inherent in Ukraine as part of the USSR, against the background of the destruction of infrastructure and business structures, as well as the

intensification of competition, is very problematic; c) building a financial economy based on the use of a strong national currency (at the level of the international currency), as well as on a high level of the country's national security, is practically impossible. Thus, *the determinant of economic policy* aimed at overcoming the consequences of the war should be the formation of Ukraine as a high-tech state with a developed *innovative economy*. That is, the state economic policy regarding the nature of the development of economic relations in the country (relations covering both production and distribution, as well as exchange and consumption), against the background of the consequences of the war and the existing positive image of the country among the advanced economies of the world and their aspirations to support the country, should provide for the creation of the new innovative economy.

Among the ways of restructuring the existing domestic economy and building it into an innovative model, the following can be noted, in particular: a) creation, on the one hand, of favorable conditions for innovation and investment activities with the expansion of opportunities to attract both foreign and international, as well as domestic investors and stakeholders; b) carrying out, on the other hand, a strict and purposeful protectionist state policy (even contrary to certain requirements of the WTO).

It is the implementation of a comprehensively justified and balanced policy of economic transformations aimed at overcoming the consequences of the war and obtaining its expected and feasible results, which provides an opportunity not only to strengthen the level of national security of the country as a whole, but also to determine the criteria and parameters for the formation of social security of the country, in particular.

Social security, as a component of national security, reflects the state of guaranteed legal and institutional protection of vital material, social, humanitarian and spiritual interests of both an individual (regardless of age, gender, nationality, religion, income level, etc.) and society as a whole, from the influence of external and internal threats to the quality of life and health (Zerkalov, 2022).

The implementation of the national security strategy from the point of view of social security is carried out through the formation and implementation of *social policy* – a policy to ensure a certain

level of social conditions and social benefits (material, sanitary-epidemiological, ecological, psychological, etc.), which determine a decent and high-quality standard of living as an individual, so society as a whole, and also guarantee a minimal risk to life and health (physical, mental) of people. At the same time, social policy parameters and their threshold values are determined by the state of the economy, and certain economic indicators act as evaluation criteria and indicators for determining the level of threshold values in accordance with the required volume and quality of important social needs and interests, as well as the state of social security as a separate person and society as a whole. Taking this into account, it would be expedient to talk about the formation of a *socio-economic policy* for the implementation of the country's national security strategy.

The mechanism of development of socio-economic policy aimed at overcoming the consequences of war can, for example, be organized on the basis of a certain analytical scheme, which involves, in particular, a consistent definition of: 1) the circle of vital (key) social interests and their guarantees; 2) real and potentially possible threats to these interests; 3) criteria and indicators characterizing the state of these interests; 4) threshold values of established criteria and indicators of interests; 5) a list of measures aimed at protecting these interests and providing guarantees for their implementation.

In the process of forming a socio-economic policy, it is necessary to take into account that it should relate to and will influence the existence and development of various *objects (levels) of this policy*, in particular: a) *the state*, as a socio-political institution that manages a complex of internal and external functions of ensuring the vital activities of society on the territory of the country; b) the population of the country forming a certain *society*; c) *associations of citizens* living in separate territories of the country, which form territorial communities of the regions of the country; d) *business entities operating* in the country and its regions to meet needs and interests; e) *individual individuals* – citizens of this country who are both on the territory of the country and outside its borders. At the same time, it is necessary to take into account that each of the specified objects (levels) *has its own dominant factors* in determining the orientation

of socio-economic policy, in particular: a) for the state, it is the provision of territorial integrity, sovereignty and security of the country, as well as independence and independence in the decision of all external and internal affairs regarding rights, freedoms, guarantees; b) for individual territorial communities and society as a whole, this is the preservation and multiplication of the most important material goods, the natural environment, as well as a certain national heritage based on the observance of certain spiritual, moral and ethical, cultural and historical values, as well as connections and relations between separate parts of this community (society); c) for business entities, it is the provision of conditions necessary for their business; d) for specific citizens, it is the observance of their constitutional rights and freedoms, the availability of guarantees to ensure this, as well as the protection of the individual from critical threats to his existence and well-being.

Thus, the *determinants of socio-economic policy* aimed at overcoming the consequences of war are the determination of balance in approaches to each of the objects (levels) of the influence of this policy and the satisfaction of their interests. The difficulty in defining a balanced socio-economic policy lies in the fact that at different levels of its implementation, conflicting interests and even a certain conflict of interests may arise. This requires a balanced determination of the priorities of social and economic policy at various stages of its implementation. In the modern conditions of war, state security and public interests are definitely prioritized, relegating personal interests to the “second plan”. However, if such an approach to the “ranking” of interests is fully justified under the conditions of war, then in the conditions of overcoming its consequences, when the key security threats at the level of each individual person will change from external aggression to a whole series of internal problems (economic, humanitarian, environmental, discriminatory etc.), these priorities may change. Such a possible change in the priorities of socio-economic policy in the conditions of overcoming the consequences of the war, despite the fact that the national mentality reflects collectivist and paternalistic rather than individualistic attitudes, may become an additional obstacle to the authoritarian movement vector of the post-war political system of Ukraine.

Determinants of socio-economic policy in the conditions of overcoming the consequences of war can be, in particular, factors aimed at the priority satisfaction of *individual interests* based on the human security model proposed by the Nobel Prize laureate Amartya Kumar Sen. This model provides, in particular, such security aspects as: a) economic security; b) food safety; c) environmental safety; d) security of existence and personal development; e) social and cultural security; f) political security; g) health safety (Vorotnyuk, 2023).

Such an approach to the formation of socio-economic policy in the conditions of overcoming the consequences of the war both at the state level as a whole and at the level of certain regions and individual industries and economic entities, in our opinion, could become an effective tool for implementing the strategy of sustainable development, not limiting the social aspects of this policy only to their traditional components – social security, social support and social development.

Conclusions

Based on the above, the following conclusions can be drawn:

- in the conditions of the crisis state of the state and society as a whole, especially in the conditions of using military conflict as a means of solving problems, the determinant of ensuring the possibility of sustainable development becomes national security, as a synergistic integration of a whole range of aspects of security. The national security strategy in such conditions should both form a vision of the desired state of the state and society from the position of “where we should be”, and determine the main directions of the tactics of its implementation in the form of an appropriate policy for achieving this position based on the position of “where we are” here and now;
- economic security, as an integral component of national security, which acts as its foundation and material basis, should be ensured through the formation and implementation of economic policy. Taking into account the consequences of the war and a number of other factors restraining the economic development of Ukraine in the post-war period, the determinant of economic policy is the determination of the model of development of the country’s

economy, in particular, the advantages of the emerging model of the innovative economy;

- defining state security as a condition for ensuring the country's national security, and economic security as its foundation and material basis, social security can be attributed to the goal of national security, which is implemented through social policy. Social policy, taking into account the fact that its parameters and threshold values of its criteria indicators are determined by the state of the economy, it would be appropriate to consider it as a socio-economic policy;

among the determinants of the formation of socio-economic policy in the conditions of overcoming the consequences of the war, such factors can be noted as: a) determination of balance in approaches to each of the objects (levels) of influence of this policy; b) a balanced approach to the formation of priorities for satisfying the interests of various objects (levels) of this policy; c) giving priority to the implementation of the human security model in the formation of this policy over the traditional components of social policy – social security, social support and social development.

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Martin Pavlovič

ORCID: <https://orcid.org/0000-0002-4187-8018>

PhD in Agr. Econ., Full Professor
IHGC General Secretary
Faculty of Agriculture and Life
Sciences University of Maribor
(Hoče, Slovenia)

**MODEL FOR
ANALYSIS OF GLOBAL
HOP INDUSTRY
STATISTICS**

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Abstract

The International Hop Growers' Convention (IHGC), is the only international body representing the interests of members of the global hop industry. In 2024, its Economic Commission analysis hop supply data from 22 hop producing countries. Data collection methods and methods unique to the U.S. and Germany are discussed. The U.S. and Germany produced 40.18 and 33.74 percent of the world's hop acreage respectively in 2020. The balance of global acreage (i.e. 26 percent of total global acreage) was divided by 19 producing countries. Reporting methods are demonstrated and data unique to the IHGC is highlighted. The qualitative value of the organization to the industry is also revealed.

Keywords: *hop supply, market analysis, prices, alpha-acids, IHGC.*

Introduction

Hops (*Humulus lupulus* L), along with malt, yeast and water, are basic raw materials used for beer production. The basic role of hops is to provide beer with a pleasantly bitter taste and a hoppy aroma (Štěrba et al., 2015). Commercial production takes place in latitudes greater than 35 degrees in both the Northern and Southern Hemispheres due to strong photoperiodism requirements for flowering (Henning et al. 2015). Female hop plants produce cones in

which resins and oils are important in the brewing industry.

Hops are international trading commodity in the agricultural market. Their potent bitterness and pungent flavor ensured the limited market for hops. Beer production remains the only market requiring hops in significant since breweries consume 98% of global hop production (Cooberg and Hintermeier, 2012). There are other products that use hops in very small quantities. Teas, pillows and other sleep aids made with hops exist as homeopathic remedies around the world in amount of around 2%. However, none of these products require enough hops to affect the supply produced in a meaningful way (MacKinnon and Pavlovič, 2020).

In 2021, there were globally 298 commercially grown hop varieties (IHGC, 2021). Hops take a very small part (about 1%) in the structure of costs in brewing industry (Pavlovič, 2014). Used in the production of beer, they contribute greatly to the sensory profile of beer. Aroma hops give off scents as varied as grass, grapefruit, chocolate, pepper, mint, apricot, and tangerine (Helphand, 2014). Craft brewers producing Indian Pale Ales (IPAs) worldwide sought these flavors during the double-digit growth of craft beer production between 2009 and 2015 (Watson, 2015).

In 2020 approximately 62,104 ha of hops were cultivated worldwide with a world crop of 123,025 metric tons of hops. Estimated production of alpha-acids, the most important significant shared attribute among all hop varieties, was 13.302 metric tons. The International Hop Growers' Convention i.e. IHGC tracks the world's commercial hop production data and provides an invaluable service to the industry. Valuable commentary on the global supply and demand situation is often provided by the German Hop Merchant Association i.e., Deutscher Hopfenwirtschaftsverband e.V., also referred to as DHWV. For example, in its November 2021 report to the body, the impact of the pandemic on global demand for hops and hop products was summarized (DHWV, 2021).

As of October 2024, there were 22 country members (hop producers' organizations) and 16 corporate members (hop trading companies) of the IHGC. The statistics the organization collects and disseminates to its members embrace data regarding production of hops, aggregating the world's variety structure and analyzing hop market trends. In November 2021, North American and European

countries produced 89,78 percent of total IHGC-tracked production in 2020 and reportedly accounted for 91,78 percent in 2021. U.S. and German production alone were responsible for 76,74 percent in 2020 and an estimated 77,20 percent in 2021 (IHGC, 2024).

Materials and Methods

The International Hop Growers' Convention holds meetings three times each year, in April, July-August and November. The timing of these meetings is strategic to allow updates on planting activity in the spring, progress of the crop prior to harvest and a recap of yields and production in November. The data reported during Economic Committee meetings are collected by the chairman of the committee during the weeks leading up to the meeting with some members submitting their data only days prior to the event. Oftentimes, collecting such data necessitates more than one contact between the economic committee chairman and the reporting country delegate. These data consist of acreage, quantity of hops produced, an estimate for the quantity of alpha produced, hop variety structure, the volume of hops sold ahead each year by each member country and average prices (MacKinnon and Pavlovič, 2019). Some countries are reluctant to report. When this happens, it is acceptable to collect data regarding a hop producing country from third parties. In the past, members of the DHWV have provided country data regarding non-reporting countries unofficially during meetings.

IHGC member country delegates have been regularly encouraged to provide official hop supply statistics from their countries for decades prior to meetings of the Economic Committee emailing them to the IHGC Secretariat. All data on member country level were processed and prepared for the coming IHGC meetings. The collected hop supply statistics are a part of the IHGC archives (IHGC, 2024).

During IHGC meetings, representatives from each country present are encouraged to stand and give an oral report regarding the situation in their home country during the previous years. While these reports always cover the data submitted, they may also include other useful information explaining why the numbers are as reported and issues that growers dealt with during the previous season. Other members in attendance are allowed and encouraged to ask questions

for clarification, or for other information from the reporting country representative.

Since the largest hop producing countries, the U.S. and Germany, dominate the global market, this research focused on analyzing hop supply data from these two countries between 2007 and 2021. We collected and analyzed data regarding the following parameters: (i) hop acreage (ha), (ii) production of hops (t), production of alpha-acids (t), (iv) value of hops sold ahead (USD, EUR) and (v) SAP i.e. season average prices of hops (USD, EUR).

We sourced data from the IHGC Economic Committee November reports from the subsequent year (e.g. 2021) to represent data regarding the n-1 year (e.g. 2020). These data had the highest accuracy regarding the previous year's data and better estimates regarding the current year data than the spring or summer reports from the current year due to the existence of official data by that time. Current year reporting was often based on estimates from representatives of member countries as official government related sources were not yet available. As these estimates occurred following the harvest and members were acutely aware of the situation in their home countries, data needed only slight revision in subsequent years.

Results and Discussions

Research results are focused on the three main hop market supply elements such as acreage of hops, production of hops and production of alpha-acids. In addition, season average prices and value of hops sold ahead are discussed.

The U.S. and Germany produced 40.18 and 33.74 percent of the world's hop acreage respectively in 2020. The balance of global acreage (i.e. 26 percent of total global acreage) was divided by 19 producing countries. Furthermore, the U.S. and German hop growers supplied 38.64 and 38.10 percent of hops while related to the production of alpha-acids, as the most important brewing quality parameter, even 41.35 and 40.88 percent (IHGC, 2024).

Data reported by the IHGC regarding the U.S. (Figure 1.4) is very similar to that which is available from other sources in historical context sometimes only months after the fact. The timeliness of year-specific data and evidence of the formation of trends over time is valuable information. American representatives have long had the

practice of estimating the situation on the ground in the U.S. at the moment the report is offered. These have been the numbers they have reported to the IHGC.



Figure 1.4 U.S. Hop Acreage, Hop Production and Alpha Acid Production 2007-2021

The reports by member countries to the IHGC are provided in the same format offering continuity in the method of data collection. This continuity in data collection over the decades offers a valuable service in that it may be compared year on year with previous seasons to establish trends over longer periods. In their November report, data reported by American representatives to the IHGC is valuable as a recap of the situation during the year even though it may not represent statistics collected by the USDA NASS.

For the spring report, typically held in April, American reports provide a valuable estimate of acreage planted for harvest before such information is available elsewhere.

For the summer report, Americans seldom update their data regarding acreage as there often have been no significant changes since the spring report. Rather, the discussion in the summer pertains to recent weather events, as well as pests and other challenges. The anticipated effects of these and other events upon yield for the current year are offered to the group and lively discussion often

occurs. As many of these details are non-quantifiable, they cannot be included in the summary report.

German representatives regularly attend IHGC events and provide hop acreage, hop production and alpha-acid production data in a similar format (Figure 1.5). Contrary to the Americans, the German delegation only reports government approved figures, which are updated annually in their IHGC reports. The German November reports are updated with current year official data. German delegates do not speculate on the current situation in spring and summer official reports, reducing the value of IHGC reported data at those two meetings. They do not submit speculative data in writing in an official capacity to the IHGC. Those in attendance, however, are quite helpful during meetings with regards to providing insight on the current situation in Germany and regularly do so in when asked by other members present.



Figure 1.5 German Hop Acreage, Hop Production and Alpha Acid Production 2007-2021

There have been periods in the past when the extreme oversupply of hops and alpha-acid dominated discussions. This was more typical in the period when homogenous products were produced by all member countries with alpha-acid being the similar characteristic among all hop varieties. The most recent severe surplus began in the mid-1980s with the introduction of higher alpha yielding varieties

without a corresponding reduction in the acreage planted. The supply situation remained largely unchanged until approximately 2004 when the earliest signs of a recovery began to emerge to those with access to the proper data. During these periods of extreme over supply, discussion among the group's members often centered around what could be done to remedy the situation. The November 2004 Economic Committee report although only a summary offers a rare glimpse into the concerns of the industry at that difficult time.

Most spot bitter hops have been consigned to pools both in Europe and in the US with no or only minimal pre-payments to growers. Based on the current market development one cannot count on any significant additional payments. It can only be hoped that this clear market signal will convince growers everywhere to reduce their bitter hop acreage in order to bring the bitter hop segment back into balance. For that purpose, Germany is offering an acreage idling and reduction program to its growers in order to reinforce the message and to alleviate the financial burden. Only a continuous reduction of acreage can maintain long-term prices above production costs as overall demand for hops continues to decline as a consequence of reduced hopping rates worldwide. A conversion of existing bitter hop acreage into aroma varieties would be very counter-productive.

The industry trend towards increased emphasis on the spot market continues unabated. Brewers are reluctant to enter into long-term contracts as market trends change and their brand portfolio adjusts. They are also afraid of losing out to their more reckless competitors who speculate on low spot market prices. It is also obvious that the trend towards further consolidation in the brewing industry will continue and that smaller, independent brewers will be taken over by the larger groups. This development is clearly not to the benefit of the hop industry as the big groups show no loyalty to growing regions and their bargaining power becomes ever stronger (IHGC, 2004).

As with any group containing such diverse membership, the difficult times of the 2007-08 hop shortage revealed a lack of unity regarding the vision of the industry between some of the group's members that appeared to stem largely from differing business philosophies. In the July 2008 market report, the DHWV published the following statement. As a consequence of the behavior of the

Eastern European growers and trading companies, virtually no forward contracts are likely to have been placed in their region. The historically favorable opportunity to obtain long-term security was sacrificed in these countries for the sake of short-term profit (DHWV, 2008).

Sixteen months later, the global market situation had changed. Once again, the industry was confronted with an extreme oversupply of hops. The DHWV, in turn, released the following assessment regarding the market. The surplus in crop 2009 amounting to at least 2,500 mts alpha-acids will contribute to a further increase in stocks. Within a very short time frame the world hop industry finds itself in a menacing oversupply crisis. Markets prove this. Breweries who have too many contracts try to roll their contracts into later years or to cancel them to control their stock situation (DHWV, 2010).

Whether the DHWV or the Eastern European growers were correct in their actions or not, is beyond the scope of this article. The IHGC provided a forum for these discussions to take place. It is the belief of the author that facilitating a free and open discussion between industry members, regardless of the issue or the outcome, is always a positive force for good.

A data point scarcely available elsewhere in the world hop industry is volume of the crop sold ahead. The IHGC provides estimates of this figure from its member countries annually. In the case of the U.S., when this figure is combined with the U.S. season average price, a figure provided by the United States Department of Agriculture National Agricultural Statistical Service (USDA NASS) to the hop industry each December, an approximate value for the quantity of American hops sold ahead may be calculated. When this is applied to successive years, the trend in the value of the crop sold ahead becomes apparent (Figure 1.6).

The value of U.S. and German forward contracts were \$204 million (equivalent to 180 million Euros) and 300.1 million Euros in 2001 respectively. The value of German forward contracts grew significantly in the next two decades. As of 2020, German sold ahead contracts set record highs worth an estimated 1.33 billion Euros. The German season average price for 2021 was not yet available at the time of publication. U.S. forward contract value, however, soared to still higher heights and at a much quicker rate than the value of

German hops sold ahead. From approximately \$200 million in 2001 the value of U.S. hops sold ahead soared to a record of \$2.7 billion in 2016 (the equivalent of 2.5 billion Euros at the time) after which they began to stabilize. The value of U.S. sold ahead contracts stabilized somewhat after 2016. Between 2016 and 2021, the value of the U.S. crop sold ahead stayed above two billion dollars registering its second highest value in recorded history in 2021 of an estimated \$2.49 billion (the equivalent of approximately 2.3 billion Euros in December 2021). Figures 1.6 and 1.7 display the total value of contracted hops for the U.S. and Germany during this time also increased.

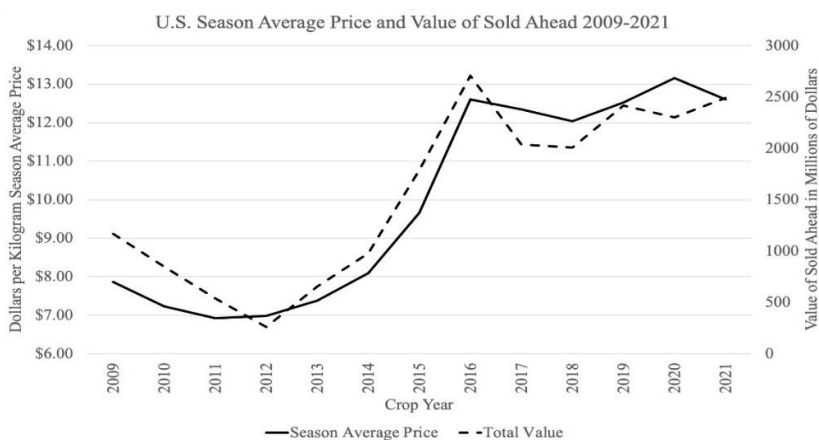


Figure 1.6 U.S. season average price and value of contracted hops as reported to IHGC

Source: IHGC Economic committee November reports 2009-2021

When a similar procedure is applied to the German IHGC data, trends in the value of the German crop sold ahead are also visible (Figure 1.7). These figures represent a snapshot in time at which an approximation is made every year and contain some inherent limitations.

The sold ahead percentages for year n+1 through n+5 are based on year n production as future production cannot be known at the time of the report in year n. For example, if country X produced 100 metric tons of hops in year n and 95 metric tons of hops were sold

ahead in year n+1 and n+2, those years would be reported sold at 95 percent. When year n+1 and n+2 arrive, production for country X may be 110 and 130 metric tons respectively.



Figure 1.7 German season average price and value of contracted hops as reported to IHGC

Source: IHGC Economic committee November reports 2009-2021

During that time, however, the reported sold ahead figures are updated for year n+1 as it becomes the new year n. The same methods for using the sold ahead percentages for future years are again used.

Conclusions

The value of the IHGC to the hop industry is not only its collection of valuable production, acreage, yield and other hop related information from over 20 countries around the globe. The frequency of the meetings and this data collection makes it the premiere organization in the hop industry where growers and merchants may come together to discuss industry specific events. The ability to report these data in a timely manner as events are unfolding provides exceptional value to its members as such data is often not available except to large multinational organizations. Data

reported by the U.S. and Germany therefore reprints the best publicly-available real time information at the time of the report.

The value of the data may be questioned by some as some country reports represent only the best estimate of developments at the time of the report. The value of IHGC data is precisely in its representation of data at a snapshot in time. IHGC data for the current year should not be interpreted as specific data with 100 percent accuracy. Such data is only possible, when it is possible at all, only months after the fact. The value of IHGC as an organization as a whole as well as the data it reports is the timeliness of the information disseminated periodically throughout the year. Since over time as more accurate data becomes available the organization's reports are update, the value of IHGC data over time is in the trends that emerge. A non-quantifiable effect of the regularity of the meetings is the camaraderie and familiarity it fosters between members of this small industry.

Despite the great value the organization provides, during periods of extreme oversupply, which do not favor the hop industry, its limitations are revealed. The IHGC shares many of the same weaknesses from which the United Nations suffers. While its participation is active regular and encouraging, the individual members of the group do not all have the authority to return to their home countries and implement the reforms discussed during the meetings. Many are simply messengers whose only recourse is to return to their home country and share the information they gathered while attending the IHGC meetings. As with the United Nations, this is not a reason to disband the IHGC. The benefits of the camaraderie and freedom to discuss the issues of the day, whatever they may be, far outweigh the costs and limitations of such an organization. In fact, the greater the understand by members of the IHGC about their cohorts and their situation in the global market creates a more cohesive industry. It increases awareness of members regarding the global market situation of the day providing information to which they may not otherwise have access so they may act and respond should they so choose. These actions may not stem directly from the organization itself as a result of a resolution or decree, but they are indirectly influenced by the contacts and understanding fostered by such regular meetings between peers.

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Ing. Markéta Pekarčíková
 ORCID: <https://orcid.org/0000-0002-0147-7500>
 PhD Student at the Department of
 Management
 VSB-Technical University of Ostrava
 (Ostrava, Czech Republic)

**EUROPE'S PATH
 FORWARD: THE
 EUROPEAN
 COMMISSION'S
 PRIORITIES FOR
 2024–2029**

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Abstract

At the beginning of their mandate, the President of the European Commission outlines in the political guidelines what priorities he/she will primarily address over the five years. The next President of the European Commission will be Ursula von der Leyen for the second time, who has already outlined the political guidelines for the European Commission for the period 2024–2029. The priorities reflect the changes that Europe has undergone over the last five years, particularly the COVID-19 pandemic, the start of the war in Ukraine and the associated migration wave and energy crisis. The European Commission's priorities 2024–2029 reflect the recommendations of Draghi's report on the Future of European Competitiveness and Letta's report on the future of the EU Single Market. The European Commission's important priorities 2024–2029 will be competitiveness, growth, investment and deregulation, which are the recommendations from the reports mentioned above. The chapter aims to present the

European Commission's priorities for 2024–2029 and outline briefly how the European Commission's priorities have changed compared to the previous European Commission's 2024–2029 term, primarily using a literature review method.

Keywords: *European Commission, EC, political guidelines, priorities.*

Introduction

As the executive arm of the European Union, the European Commission plays a key role in setting the political direction and priorities of European integration. Setting the European Commission's priorities is a political act and a reflection of the needs, objectives and challenges the EU faces in a globalised world. At the beginning of each five-year institutional period, the President of the European Commission outlines in his Policy Guidelines the specific priorities on which the new European Commission will focus. These priorities reflect the current needs of Europeans and Member States and the overall direction of the European Union in a globalised world.

This June saw the European Parliament elections, which traditionally change the top leadership of the EU institutions. However, this is not the case for the European Commission, as Ursula von der Leyen will begin her second term as President of the European Commission. Ursula von der Leyen will thus have the opportunity to build on the agenda of the previous institutional period and adapt it to the current needs of Europeans, Member States and the EU's overall position in a globalised world or to develop new plans for Europe.

In preparing the European Commission's priorities for 2024–2029, Ursula von den Leyen has reflected on the challenges the EU has faced over the past five years, namely the COVID-19 pandemic, to the start of the war in Ukraine and the associated migration wave, to the energy crisis. In preparing her priorities, the new President of the European Commission also drew on recommendations based on Draghi's report on the Future of European Competitiveness and Letta's report on the future of the EU Single Market, which was presented on the 30th anniversary of the Single Market in the EU. There is a visible change from Ursula von den Leyen's previous mandate. The priorities are based on the recommendations of those

reports, but also on the global situation, and the primary focus is no longer so much on the Green Deal. The much more important priorities now are strengthening competitiveness, growth, investment and deregulation.

The chapter focuses on a theoretical introduction to the issue of Policy Guidelines, the European Commission's priorities and an analysis of the European Commission's priorities for 2024–2029, primarily using a literature review of official EU sources and articles published in academic journals. The chapter also briefly compares the European Commission's priorities for 2024–2029 and 2024–2029.

Methodology – Literature Review

The main method of this chapter is a literature review, which can be defined as a written document containing an argument based on logical rules and a detailed understanding of the current state of knowledge of the selected topic area of research. A literature search aims to critically review current knowledge on a particular topic (Machi, McEvoy, 2012).

The literature review is considered to be research in itself, which is based on document analysis or qualitative data. Conducting a literature review means searching and exploring the available information sources and then selecting and constructing relevant literature in the research area. This chapter uses a traditional literature review (Rojon, McDowal and Saunders, 2012).

The creation of a traditional literature review is based on four interrelated steps. These are selecting/determining the research topic, locating relevant literature, analysing the literature searched and creating the actual literature review (Jesson, Matheson and Lacey, 2011).

European Commission's priorities – Brief Theoretical Concept

Political programming and a targeting, non-legislative agenda are key tools across different political systems. The EU is no exception, and priority setting is part of a more comprehensive programming cycle, not only for the European Commission (EC). At the beginning of each five-year institutional cycle, the candidate for President of the European Commission presents their priorities in the political guidelines, formerly known as Multi-Annual Strategic Objectives,

which set out the overall parameters and political structure of the European Commission for the term of office (Koop, Reh and Bressanelli, 2021; Corbett et al. 2016; Tholoniati, 2009).

The European Commission's priorities are based on the strategic agenda of the European Council and must, therefore, be in line with this document. In the European Commission's political guidelines, the candidate for the Presidency of the European Commission presents their view of the EC's priorities for the next five years. This document is also the basis for the subsequent portfolios of the European Commissioners. The outlined priorities are then translated into concrete initiatives in the European Commission's annual work programmes and subsequently presented to the European Parliament and the Council of the European Union as legislative or non-legislative proposals. In addition to macro-objectives, the European Commission's policy priorities also set out specific initiatives. For some initiatives, specific timetables are set (European Parliament, 2024a; European Career Association Maastricht, 2024).

In their State of the Union address, the President of the European Union talks about how the European Commission will implement its priorities. In addition to the political guidelines, the European Commission draws up annual work programmes. The yearly work programmes translate the European Commission's multiannual priorities into specific legislative programmes for the next 12 months. According to Derks (2012), in the work programmes, the European Commission turns its policy guidelines and the State of the Union address into practice. In the Strategic Plans section, the European Commission services describe how they will contribute to achieving the European Commission's political priorities and define their specific objectives for the five years. Once a year, the European Commission services then issue annual activity reports containing information on progress in meeting the objectives (European Commission, 2024; Lupo, 2018; Hartlapp et al., 2014).

The literature review shows that although the priorities outlined in the European Commission's policy guidelines are of an umbrella nature, they are the first official indication of the European Commission's stance on European policy, the issues it intends to address and the challenges it will respond to. In a situation where the EC Work Programme for 2025 has not yet been published, the EC's

policy guidelines for 2024-2029 can serve as an initial starting point for comparison with the EC's policy guidelines for 2019-2024. Due to the actuality of the chapter's topic, the literature review primarily focuses on a search of current official publications of the European Union and relevant sources. However, articles from academic journals are also included.

European Commission's priorities 2024–2029

The European Commission last presented its Policy Guidelines containing its priorities in 2019. During the institutional cycle, the European Commission has faced the COVID-19 pandemic and has proposed the NextGenerationEU package for economic recovery. Subsequently, it had to deal with the impact of the Russian war in Ukraine and the related refugee wave and energy crisis. In addition, the Pact on Migration and Asylum was approved, and the European Pillar of Social Rights was implemented. During Ursula von der Leyen's first term, the European Union spearheaded the joint rollout of the COVID-19 vaccine, adopted an ambitious Green Deal and reduced the EU's dependence on Russian energy resources, imposed a 13th package of sanctions on Russia, attempted to reset its relationship with China, and passed the first law to regulate AI in a globalised world.

On 18 July 2024, European Commission President Ursula von der Leyen presented her Policy Guidelines entitled "*Europe's Choice*" for the next European Commission for 2024–2029, also referred to as "*von der Leyen II*", to the European Parliament. According to the European Commission President, the next five years will determine the EU's position in the world for the next five decades. The EU will decide whether it will shape its future or whether external events or other global players will shape it. The political guidelines contain the priorities that will be the compass and will be reflected in the European Commission's concrete work programme in the coming months. Later, on 17 September, it presented the list of candidates for the posts of Commissioners and identified their portfolios, which thematically fall within the European Commission's political guidelines 2024–2029 (European Commission, 2024a; European Parliament, 2024).

The political guidelines of the European Commission for the period 2024–2029 contain seven priorities, see Table 1.3. Enrico

Letta’s Report on the Future of the EU Single Market was used to prepare the political guidelines of the European Commission. The report called on the EC to propose a European Savings and Investments Union arrangement. Mario Draghi’s report called The Future of European Competitiveness was also reflected in the EC’s political guidelines, although it was not published until 9 September 2024. In comparison, Letta’s report proposes profound changes to the EU single market, while Draghi’s report is much more strategic and ambitious. Draghi’s report addresses three main challenges for the EU: closing the innovation gap with the United States, aligning decarbonisation with competitiveness and strengthening economic security by reducing dependency.

Table 1.3

European Commission’s Priorities 2024–2029

-
1. A new plan for Europe’s sustainable prosperity and competitiveness – Making business easier; A clean Industrial Deal; A more circular and resilient economy; Boosting productivity with digital tech diffusion; Putting Research and Innovation at the heart of our economy; Turbocharging investment; Tackling the skills and labour gaps

 2. A new era for European Defence and Security – Bringing the European Defence Union to life; A preparedness Union; A safer and more secure Europe; Stronger common borders; Standing fair and firm on migration

 3. Supporting people, strengthening our societies and our social model – Social fairness in the modern economy; Reuniting our societies, supporting our young people; A Union of equality

 4. Sustaining our quality of life: food security, water and nature – Climate adaptation, preparedness and solidarity

 5. Protecting our democracy, upholding our values – Protecting our democracy; Strengthening the rule of law; Putting citizens at the heart of our democracy

 6. A global Europe: Leveraging our power and partnerships – Enlargement as a geopolitical imperative; A more strategic approach to our neighbourhood; A new economic foreign policy; Reshaping multilateralism for today’s world

 7. Delivering together and preparing our Union for the future – A new budget fit for our ambitions; An ambitious reform agenda for Europe; Delivering together with the European Parliament

Source: European Commission, 2024a; Own elaboration, 2024

The Policy Guidelines seek to create a sense of continuity, allowing the EC president to build on her first mandate in a second term, especially if the Green Deal and the fulfilment of their goals.

Of the seven priorities outlined, competitiveness is perceived by the European Commission as the top priority. Within this priority, the emphasis is on a new European Prosperity Plan, which should make it easier to do business to reduce the long-criticised administrative burden, including simplifying its implementation. The Prosperity Plan is also intended to deepen the single market, create a Clean Industrial Deal to decarbonise and reduce energy prices and create a more circular and resilient economy. The Clean Industry Deal is a response to Draghi's competitiveness report. The draft deal was due to be published within the first 100 days of the new European Commission's mandate. The competitiveness priority also talks about boosting productivity, spreading digital technologies, massive investment in competitiveness and the funding needed for green, digital and social transformation (European Commission, 2024b).

European security and defence have come to the fore, mainly because of the Russian war in Ukraine, and are becoming increasingly important. The President of the European Commission talks about A new era for European Defence and Security and, for the first time, the post of European Commissioner for Defence and Space is mentioned in this context, whose task will be to draw up, together with the High Representative of the Union for Foreign Affairs and Security Policy, a White Paper on the future of European defence within the first 100 days of her mandate. The European Defence Union, a safer and more secure European Union, should also be addressed as a security priority, see Table 1.3. Strengthening the EU's partnership with NATO, which should address cyber, hybrid or space threats, will also be central (European Parliament, 2024).

The third priority is improving the quality of life of European citizens, which is negatively affected by, among other things, the high and rising cost of living and growing inequalities. The need to listen more to the younger generation is also highlighted in the context of concerns about the impact of social networks on citizen's well-being. A new strategy for gender equality after 2025 and a strategy against racism are also discussed under this priority (European Commission, 2024b).

Under the fourth priority of quality of life, the President

committed in the Policy Guidelines to present a Vision for Agriculture and Food within the first 100 days of her mandate. The strategy will address how to ensure the competitiveness and sustainability of the agricultural sector within the limits of our planet's capacity. European Oceans Pact, European Climate Plan and new European Water Resilience Strategy are also discussed in the European Commission's priorities (European Commission, 2024b).

The fifth priority is the protection of democracy and European values. Democratic systems and institutions are under attack from internal and external actors. Thanks to digital tools and social networks, their practices are more harmful and easier to use. More needs to be done to protect democracy, so the President of the European Commission will propose a European Democracy Shield, create a European network of fact-checkers and continue to strengthen digital law enforcement. A single market dimension will be added to the annual rule of law report (European Commission, 2024b).

The European Commission's sixth priority, A Global Europe, highlights how this involves working with like-minded partners to confront dangerous realities. Support for Ukraine remains a priority. In this context, the European Commission emphasises the fight against creating an alternative international order based on redrawn maps. Strengthening relations with the United Kingdom regarding energy, security, and resilience is also a priority. The European Commission supports EU enlargement and greater engagement in the Mediterranean region. For example, there should be more support for candidate countries through investment and reforms in the Growth Plan for the Western Balkans and the Ukraine Facility (European Commission, 2024b).

Europe has embarked on an ambitious modernisation programme over the last five years. As part of this priority, the European Commission is calling for a new approach to a strengthened budget, which should be more focused, simpler and more efficient. There is also talk of the need for new resources. The President of the European Commission is convinced that an ambitious reform agenda is needed to enable the EU to address geopolitical challenges and improve democratic legitimacy with the involvement of Europeans. The European Commission will continue to address the conclusions

of the Conference on the Future of Europe in this regard. In her second term, Ursula von der Leyen wants to continue strengthening cooperation between the European Commission and the European Parliament concerning Article 225 and the revision of the Framework Agreement (European Commission, 2024b).

Results and Discussion

When the European Commission took office in 2019 for from 2019 to 2024, Europe faced different challenges and priorities than today. In EC's policy guidelines for 2019–2024, European Commission President Ursula von der Leyen presented the European Commission's strategic focus for 2019–2024: to make the EU stronger, more sustainable and more prepared for new challenges. The European Commission focused on ambitious climate goals, developing the digital economy and strengthening Europe's identity. At the forefront of the European Commission's 2019–2024 priorities was primarily the Green Deal for Europe, which was intended to ensure Europe would become the first climate-neutral continent by 2050. In addition to the Green Deal, there was talk of a Digital Economy Action Plan to move Europe towards digital sovereignty. Another important priority was the protection of European values, i.e. democratic values, the rule of law, and civil rights, which resulted in initiatives aimed at combating disinformation and promoting EU cohesion (European Commission, 2019).

Since the European Commission took office in 2019–2024, however, the European Union has been sent through significant events requiring a reassessment of priorities. The global pandemic COVID-19 turned from a health crisis into an economic crisis, and the European Commission had to address economic and social cohesion and public health challenges. For example, the European Commission created the NextGeneration EU financial package to support the European economic recovery. NextGeneration EU was supposed to be a tool to guarantee a greener, more digital and more resilient future for the EU (European Commission, 2024d).

Another unexpected situation was the start of the Russian war in Ukraine and the migration wave and energy crisis. The European Commission had to focus more on security and energy priorities. For example, the European Commission responded to the situation by

adopting a plan to reduce energy dependence on Russia called REPowerEU (European Commission, 2024e).

Words such as growth, competitiveness, investment or reducing regulation are often repeated in the European Commission's current policy guidelines 2024–2029. This is a significant change compared to 2019, when the European Commission's main priority was the Green Deal and overall Green transition. It can be assumed that the European Commission will primarily focus more on promoting economic growth or reducing regulation. So, there is a visible shift in priorities from the primary Green Deal to strengthening competitiveness, economic growth or reducing regulation. The European Commission 2024–2029 puts more emphasis on security issues than in the past, mainly because of the war in Ukraine.

While green transformation is no longer the primary priority of the future European Commission, its elements still appear across its priorities for 2024–2029. The President of the European Commission proposes further steps in this regard, for example, by proposing a 90% reduction in emissions by 2040. It is thus evident that Ursula von der Leyen wants to pursue climate goals in her second term, but she wants to take a different path than in the previous term. Instead of regulation, she focuses on investment or reducing market barriers, which should lead to the same result. This is in response to Letta's and Draghi's reports. Draghi's pointed out that the EU lags behind the United States and China in its ability to innovate. Reports suggested investing more vigorously, removing existing barriers in the single market and making it easier to do business (European Commission, 2024c).

However, Ursula von der Leyen has not yet specified how these objectives will be achieved and how specific procedures should be developed in the coming months. The European Commission's next steps may also be influenced by the views of Member States or limited budgetary resources.

Conclusions

The chapter introduced the issue of the European Commission's policy guidelines, which are always presented by the European Commission at the beginning of the five-year institutional cycle, using a literature review. Subsequently, attention was paid to explaining the European Commission's priorities for 2024–2029.

Based on the literature review, it can be concluded that the evolution of the European Commission's priorities reflects the changes in the global and European environment. The European Commission for 2019–2024 had to respond to unexpected challenges in the form of the

COVID-19 pandemic, the war in Ukraine, the related migration wave and the energy crisis. In this context, the European Commission has come up with instruments such as the NextGeneration EU financial package to support the European economic recovery or the REPowerEU plan to reduce energy dependence on Russia.

These challenges, along with Draghi's report on Competitiveness and Letta's report on the Future of the EU Single Market, have shaped the European Commission's priorities for 2024–2029. Draghi's report on Competitiveness and Letta's report on the Future of the EU Single Market deal with the present, i.e. the actual state and future of the European Union in terms of competitiveness and the single market. Letta points out in his report that although we have a single market, barriers between Member States still remain. Letta's report proposes fundamental changes to the EU single market, while Draghi's report is much more strategic and ambitious. Both reports also propose recommendations for the EU, such as harmonising single market rules, investing in technology, strengthening strategic autonomy, and the need for effective implementation of measures and cooperation between Member States to ensure the EU's long-term prosperity.

In the context of the geopolitical situation and mentioned reports, the Green Deal is no longer the European Commission's top priority compared to the 2019–2024 period. However, it is important to highlight that the climate goals cut across the European Commission's 2024–2029 priorities and reflect a shift towards sustainable and long-term growth and enhanced competitiveness.

The European Commission wants to focus on growth, investment, and innovation priorities over the next five years, as was recommended in the mentioned reports. These are efforts to increase European competitiveness on a global scale. The European Commission's Policy Guidelines 2024–2029, Draghi's report and Letta's report point to the fact that prosperity and competitiveness must be Europe's top priorities. As part of the priorities, the

European Commission also plans to continue to address the results of the Conference on the Future of Europe or to deepen cooperation with the European Parliament.

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Vladimir Shedyakov

ORCID: <https://orcid.org/0000-0003-2779-3736>

DSc (Sociology), PhD (Economics),
Associate Professor,
Freelancer Scientist
(Kyiv, Ukraine)

**ORGANIZATIONAL-
MANAGERIAL WORK
DURING
TRANSFORMATIONS'
PROCESSES**

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Abstract

Organizational-managerial relations are considered in the general context of world-historical transformations. It is shown that not just another management reform is needed, but deep social changes that need and can be regulated. Attention is drawn to the fact that ultimately the socio-economic efficiency of organizational-managerial work depends on the adequacy of conditions and prospects, on the ability to use the advantages and localize the shortcomings of processes in relation to space-temporal characteristics. Transformation processes favour the diversification and diversity of culture, its non-repressiveness, and tolerance, polylogism, overcoming the uniqueness of the canon, creative self- and mutual revelation. In the transitional period of transformations, heterogeneity, uncertainty, mutual penetration of fragments of different structures, mobility of process boundaries increase, the ratio of social (in particular, organizational-managerial) norms and anomalies changes radically. Accordingly, the features of this period of forced transformations, manifested on a world-historical scale at the global, regional, national and local levels of embodiment of organizational-managerial work, have been identified. The features of interaction between the managing and managed systems have been demonstrated. The possibilities associated with a more active use of traditions and customs, collective relations and interactions, informal communications and social networks, with the synthesis of elements of managed, self-managed and unmanaged processes have been revealed. It has been shown that the qualitative and quantitative complication of humanity under the influence of post-global, postmodern, and post-industrial transformations requires an adequate change in the potential of effective practical and theoretical influence on reality. An expansion of objective grounds for increasing multi-level diversity has been recorded. In this situation, it is not so much one-time

special decisions that are useful as the cultivation of an adequate environment that supports the trends of progressive development of the organizational structure, as well as the formation of points of concentration of positive changes (stimulating environment and growth clusters). Practical and theoretical recommendations for improving organizational-managerial activities are given.

Keywords: *organizational-managerial relations, organizational-managerial activity, organizational-managerial conditions, organizational-managerial work, transformations, transition period.*

Introduction

Organizational-managerial relations not only permeate the system of social relations; they connect and mobilize, influence the vector and dynamics of a complexly structured flow of general transformations. Global changes at the paradigm level inevitably require further improvement of the mechanisms of social interaction and their regulation. The realizing of social progress: value-sense, socio-economic, technical-technological, is increasingly affected by the structures of societal management. For example, the dissonance of management and self-management, the discrepancy between the managed and governing subsystems of society, and the dominant focus of activity in consumer centres and “factories” serving primarily external interests during the destruction of currently and potentially highly competitive scientific-educational-industrial clusters are extremely dangerous for harmonious development and economic sovereignty. Honesty in communication and personal professional competence are essential elements of organizational-managerial literacy. Maintaining conditions favourable for the development and realization of each person’s talent, the functioning of social elevators (for example, pursuing a career), and fighting nepotism, sycophancy, theft, and bureaucracy are necessary for successful, sustainable socio-economic growth.

Materials and Methods

The subject of the study is the transformations of organizational-managerial relations in society during global changes, in particular, reflection of the increasing importance of creative realization of the giftedness of the population on the formation of effective strategies and development of the national economic complex during the carry

out of the new modernization. The purpose of the article writing is to prove the need for an era-appropriate reflection by Humanities Social Sciences and Management of the process of transformation and features of the balance of the political-economic strategy, tactics and operational art of carrying out the new modernization of the country's economy. The information base of the study consists of regulatory acts, domestic and foreign publications, research on the content of international economic relations, the direction and nature of global development megatrends, and the role of transitional periods. The methodological substantiation of the material is based on the unity of the concrete-historical and abstract-logical approaches. The methodology of the work consists of the resource-methodological bases; firstly, socio-economic comparative studies, secondly, future-diagnostics.

Results and Discussions

The world-historical process has revealed another period of forced transformations at the paradigm level, radically changing the conditions of functioning and development of the oikumene. Moreover, changes are currently being realized not only in concret social institutions, but also in the entire cultural environment, relations, and structures. The transition to the logic of freedom becomes a rejection of the uniqueness of any basis for development. Humanity is drifting from the state of a social system to an unsystematic integrity, and, therefore, from rigidity to flexibility, from mass character to compactness, from technical and technological determinism to the choice of technologies, from the certainty of organizational boundaries to their blurring and mobility. The radical nature and scope of the shifts are obvious. There is a complex movement that simultaneously combines different models, scenarios, and processes. We are talking not only about the political conditions for the realization of freedom, but also about its much more global prospects associated with the dominance of tolerance and multi-structure. In this situation, heterogeneity, uncertainty, mutual penetration of elements of different structures, mobility of boundaries of phenomena and diffusion of processes increase, the ratio of norms and anomalies changes dramatically. Life roles are formed in the process of life activity, where there is a wide range of non-routine tasks and no constancy of procedures. The determining

place in relationships belongs to role networks, and they are large and dynamic, the nature, length and place of identification of roles are changeable and the degree of intersection and interaction is high. In turn, the spread of complex life activity “challenges” a person, the need to rely on oneself in decisions, self-criticism are not localized in any one area. The specifics of birth do not at all doom one to a certain path in life. At the same time, the need for “excess” knowledge and experience is everywhere actualized, for example, to optimize behaviour in non-standard cases, during job rotations and new technology mastering. The range of choice for a person increases – up to the desire to “escape from freedom”. Almost every person can get the opportunity to select from the kaleidoscope of eras, mosaic of approaches and worldviews what is close to him. It is natural that the development of personality instead of people leveling and functions averaging become the leading factor of effective technologies in the organizational-managerial activities.

It is natural that the post-global productivity of the cultural-civilizational world is formed around the creative possibilities and intellectual potential of each person, their organization and use. Emphasizing spiritual transformations and intellectual creativity is a condition for the survival and development of the oikumene as a diversity of cultural-civilizational worlds. In particular, it is imperative to overcome social inequality, which is subordinated to both the internal and external contours of the state’s functioning. The ongoing change in the social paradigm has received its most vivid embodiment in two planes of socialization-individualization: in the social way of life and in the world order. But the cardinal Challenge of transformations is the choice between accepting the diversity of development without the strict dominance of one trend – or refusing to develop (which has also happened in history in many civilizations), a lack of vectors up to a breakdown in counter-modernity and degradation. And there are enough threatening features of the latter (including those associated with liberal-market fundamentalism). Thus, the release of creative potential (and not animal instincts) requires awareness of one’s life activity and reflexivity of thinking, developed critical perception of information, etc. In turn, strengthening the ethno-cultural aspect of transformations allows it to be used along with the political-

economic, technical-technological, spiritual-moral in a series of serious factors stimulating desirable changes (Herrnstein & Murray, 1994; Peccei, 1977; Sarrazin, 2010).

But if the highest value in the economy of the emerging world prospects is ability, then the main task of management compositions is to find effective forms of combining strategy, tactics and operational art in maximizing the array of pro-social creativity. The drift of the resource-methodological range of influence is associated with a radical increase in the social value and need for creativity of each (primarily in labour and management) and, accordingly, the fundamental and radical humanization and democratization of the socio-cultural space (Mintzberg, 2007; Shedyakov, 2020, 2021). As the social need for maximizing the space for revealing a purely individual complex of giftedness increases, creativity becomes not only an ideally universal, but also a truly universal process. Cultivation of Super-projects of development, supplemented by a series of small and medium-sized projects, is an organizational solution of organizational-managerial structuring. However, the emergence of new systems of checks and balances occurs through numerous conflicts stimulating the spread of chaos. Moreover, in the situation of maturing of a new mode of reproduction in the social shell and under the economic structure of the old type, it is precisely the reactionary attempts to preserve the previous structuring and contain the pressure of innovation that breed chaos (sometimes uncontrollable), while support for the new becomes the leading form of political and economic order. At the same time, the organization and management of people, relationships and processes during the period of inter-paradigm transition is forced to take into account both the completion of previous strategies and the change in the nature of new ones; the habits and skills of those oriented primarily towards one or the other. The ability to cultivate partnership relations, self-esteem and professional pride naturally comes to replace “cold submission” / administration. At the same time, history provides examples when options for a balance of interests were found even with the rejection of social progress.

Organizational-managerial adaptability, adequacy to conditions is the most important condition for development and security. In these conditions, it is the change in organizational-managerial relations

that is capable of integrating different-quality public (including socio-economic) contacts of society. Thus, no governing group (either ruling or opposing and moving to power) is capable of acting as a separate group of demiurges-rulers, separately making socially important decisions. On the contrary, maximum development and application of the potential of the entire people and reflexivity of management, flexibility of feedback are required. And if Tradition and Modernity have accustomed us to optimizing growth through the unification of the life-activity model, now the diversity of development and security features orients us toward a fundamental discrepancy in the ways of achieving the socio-economic efficiency of approaches. Global transformations are associated not only with a departure from the patterns of uniformity to a fundamental pluralism of approaches, but also with a change in the usual hierarchies of management resources, and therefore with the growth of low predictability and multi-hierarchy, with the transformation of the nature of the relationship between managers and the managed. Resource-methodological bases for ensuring sustainable development are significantly transformed, predisposing, in particular, to the realization of consistent decentralization and regionalization, reliance on the diversity of the specifics of local communities. Now, when there is no stable external support in the form of a common ideology, a single culture, a stereotypical science, then it is necessary to recognize the right to the natural existence of the dissimilar, special and unusual. Accordingly, a set of problems arises to ensure interaction in conditions of “stable instability”, when any “bud” of the “rhizome” can “wake up”, opening a decisive direction for the development of both internal and external influence. The ability of cultural-civilizational worlds to be stable and change is largely determined by the interweaving (in particular, under the influence of historical experience, socio-cultural heritage and mental matrices of the people) of objective and subjective structuring factors that form different-quality feedbacks and attitudes toward creativity. Meanwhile, the more foundations a society has, the more complex its internal structure, the more stable they are during periods of relative stability and focused changes, the more capable they are of further development.

The transition to new assessments radically changes

organizational-managerial structures and situations, requiring a revision of the resource base of public security and development. Thus, being drawn into new trends is a change in the model of life, organizational-managerial approaches and decision methodology. Moreover, naturally, in different parts of the globe this transition can have noticeably own features. Thus, the productive implementation of transformations requires optimization of both qualitative and quantitative parameters and the functioning of the socio-economic integrity, and its changes (Shedyakov, 2022; Thomas, Dailami, Dhadeshwar, Kaufmann, Kishor, Lopez & Wang, 2000). The qualitative and quantitative complication of the oikumene under the influence of the processes of post-modern, post-global and post-industrial transformations requires an adequate change in the potential for effective practical and theoretical influence on reality. The configuration of objective grounds for increasing multi-level diversity is noticeably changing. The process of changes that provide for the coexistence, intersection and resonance of various development trends, among which none can claim exceptional significance, which would allow one to abstract from the others without harm, is increasingly declaring itself. However, a task (primarily an organizational and managerial one) of productive generalization of the vector of changes arises – a task immeasurably complicated by the deliberate growth of diversity and the non-violent nature of the impact during the accumulation of creative multi-vectorality. It is necessary to maintain the timeliness of the inflow and the quality of information processing in order to isolate knowledge that helps to understand, and, consequently, consciously make and realize decisions (Fulbright, 1966; Luhmann, 1979; Rushkoff, 1996; Virilio, 1977). But the creation of a manipulative-propaganda shell, an “information bubble” around the population can provide some advantages in the short term for conducting organizational and managerial activities, but undermines its strategic, long-term capabilities. The basis of non-manipulative management is not only factual accuracy and speed in providing information, readiness to perceive and interpret it, but also partnership interaction, and, therefore, influence “by example”, comradely co-participation in creation, the absence of a social and property gap in status and position. It is precisely the maintenance of such an environment (in

particular, through the use of organizational-managerial means) that is a serious historical challenge in the transition period.

The changes are aimed at moving away from the culture of aggression and administration, orders and monologues, forced socialization and standardization of personality in organizational-managerial activities, at overcoming tensions between participants in the life process, at providing a mechanism for consolidation and conflict resolution. The emergence of new forms of cooperation (no longer simple, but complex and multidisciplinary), focusing on competence and multi-aspect activity raise the question of the advisability of maintaining a number of intermediate management links. By noticeably changing the functional and role institutionalized and non-institutionalized hierarchies, the transformations do not cancel the requirements for structuring activities, granting powers, but significantly affect status, life priorities, goals and interests, and self-esteem. The ethical basis of relations covers not only the old (incl. religious and hierarchical) values, but also new ones, associated with a critical view of “technological slavery” and the economic imperative of life, with an orientation towards the harmony of life and the independence of choice of activity (Shedyakov, 2024a; Sheldrake, 2002).

Hyper-competition trends doom those organizational structures that are based on a strict distinction between managers and workers to a fatal lag. The preconditions are created for the disappearance of a strict division into decision makers and workers, administrators and performers, sacred and profane culture. Quickly finding effective answers requires the formation of reflexive management mechanisms with the involvement of everyone in the decision-making processes. It is obvious that transformations of paradigmatic depth and scale require neither private improvements nor chaotic-random transformations, but systemic actions that allow maintaining a balance between interests at different levels. It is the degree of erroneousness of the decisions taken that fatally leads to the “penalty circle” of history. Only now a turn of the “wheel of life” costs incomparably more for the lessons of history to be finally understood and learned. In addition, the context of transformations has changed. The discrepancy between the content and mechanisms of organizational-managerial relations and the challenges of the era is

becoming a fatal factor in changes. Many factors of previous strategies of revival and development have now been exhausted; the role of some of the parameters has fallen and become insignificant. But problems appear together with the potential that allows them to be successfully overcome. Among the range of opening opportunities is the changing nature of organizational-management relations. The significance of the moment increases sharply both at turning points in history and when entering the post-global environment (Shedyakov, 2024b; Thompson & Strickland, 2003). The paradigmatic nature of transformations means, first of all, the possibility of “overtaking without catching up” when using both universal human experience and the specific features of a specific cultural-civilizational world in organizational-managerial work. The transition period is a time of strategic organizational-managerial manoeuvring, strategic scale and depth of risks and opportunities. The essence of the processes filling the transition period is associated with the confrontation of various options for further changes, and not only the dying out of past strategies and the birth of future ones. The importance of the transitional inter-paradigmality is associated, first of all, with going beyond the “corridor of freedom”, and, therefore, with a cardinal increase in the range of both opportunities and risks. The movement of structuring from systems to non-systemic integrity with the growing role of both moral-spiritual, and socio-psychological factors that have absorbed traditions, historical experience, economic features and the placement of productive forces, a place in the social division of labour has changed the balance of resource and methodological bases. The emergence of new systems occurs through a host of conflicts (including proxy confrontations). The change of era also presupposes new models in the interpretation of the past, present and future. Participation in the restructuring and ordering of chaos gives a premium to the immediate subjects and those using trends. At this moment, objective and subjective factors, regular and random, uniquely irreversible and cyclically repeated often compete fiercely. Thus, the transition period includes confrontation (up to antagonism) of contenders for the status of leaders and exponents of the new era, the “creators” of the new Super-Project of social development. Within the framework of the transition period, the balance of forces in the structuring of social

contradictions and the entire life of the cultural-civilizational world is determined; by whom, in whose interests, how deeply, consistently and successfully the changes will be realized – and the dynamics of subsequent transformations. Strengthening the post-global essence of confrontations alternates forces and means in changeable configurations.

Many social trends are still only forming, others are difficult to recognize in the sea of previous patterns and facts characterizing the outgoing reality. At the same time, the field of choice is expanding enormously, increasing the level of responsibility of the main subjects of decision-making. A very weak impact at a key point for society can become a predictor at the bifurcation point. The direction, pace, sequence, and results of social metamorphoses largely depend on the state and dynamics of economic culture, especially at the time of forced changes at the paradigm level. It is during the transition period that the starting points of further (in particular, long-term) processes are laid, determining the level and direction of the subsequent orbit of social transformations. During the transition period, there is a powerful aggravation and identification of antagonisms between the subjects of choice. Moreover, this is by no means reduced to the contradiction “between the old and the new”, “the past and the future”, but includes, in particular, the confrontation of supporters of different models and versions of the future itself. The representatives of the interests of the people and the ruling circles, representatives of states and private transnational corporations, supporters of completely different worldviews and perceptions, etc. compete with each other. The transition period provides a chance. But if a potentially favourable pattern is not used, then the chance is not simply missed; it goes to another (often a rival). The outcome is not obvious, victory is wavering. And the configuration of vulnerabilities and advantages: each and the team – exposes another “weak link”. And it is not only about the subjects of choice, but also about the cultivation of a set of conditions for a favourable choice. As is obvious, on a global scale, the split along value lines is intensifying, reaching class, racial, and religious aspects of the split. The worldview of each is tested for strength by the cardinal changes taking place. The stability and flexibility of approaches are balanced by the moral-spiritual

framework of the individual. To preserve the basic value-sense complexes means to pass on to the future the core of the cultural-civilizational world and humanity as a whole; “so that the candle does not go out”. One of the main tasks of the builders of the new was precisely the formation of a new person and a new community of “Soviet people”, where everyone feels like a master and, therefore, is responsible not only for his immediate area of life, but also for the entire country. A person is assessed not by property, class, nationality, race, language, religion, gender, age, etc., but by his work, where his talents are embodied, by personal merits and deeds. But the maximum realization of the creative potential of society inevitably presupposes a radical increase in the methodological literacy of the broad masses of the population and the equalization of living and creative conditions. At the same time, the differences in the hierarchies of motives inherent in participants in spiritual-intellectual activity are spreading. At the same time, the focus of alienating forces is shifting in the same direction. At the same time, the element of cooperation and interaction is growing, forming a culture of co-creation. At the same time, the role of collective contacts and relations, informal communications and non-hierarchical social and information networks is dramatically increasing. Both the inherent patterns of creativity and the conditions of the “stable instability” of postmodernity increase the demands on initiative and search, freedom and responsibility of people, strengthening the influence of folk traditions, socio-cultural experience and social heritage. The emergence into the epicentre of public wealth and, therefore, the competitive struggle of purely individual combinations of human talent (primarily spiritual-intellectual), closely linked to value-sense complexes, social heritage and historical memory, makes the cardinal democratization and humanization of the system-forming relations of labour, property and organization / management a necessary step in the disclosure of economic potential.

Accordingly, increasing the diversity of management decisions by approaching the regional level of regulation is a prerequisite for the growth of the effectiveness of the creative development of the range of society’s possibilities. In the process of forced embodiment of paradigm shifts, in the realization of counter-crisis regulation in

conditions close to the state of institutional uncertainty, it is necessary to focus even more on the value-sense complexes of one's cultural-civilizational world, on the one hand (which, being realized in the forms of traditions, customs, ways of life, ensure the reproduction and development of the economy and society as a whole, acting as a complex of machines and regulators), and on the other hand, on the general logic of the historical process and specific features: one's own, one's position and one's goals. The main reference points here are three levels of existence: the past (previous states), the future (direction of development) and the present (functioning), which arises as a constantly changing moment between the past and the future. The use of multidirectional forces and societal opportunities may involve orientation toward a flexible combination of resources of social reality and mechanisms of soft and hard power within the framework of "smart / reasonable power" using a range of actions not directly aimed at the struggle for profit. In this situation, in order to successfully carry out the next modernization and use social creativity as its most important factor, it is necessary to cultivate mechanisms not to "obligate", but to direct, to interest. Thus, in order to organize the forms of creative activity, it is necessary to determine its direction, channels, objects and subjects. In this situation, for success, a new project is not necessarily needed every time; people ready to participate in it; an appropriate organizational structure. The need to move from the previously habitual administration to innovative-synergetic management leads to the replacement of "hard" social technologies with "soft" ones. However, "soft" influence, as a rule, presupposes the recognition of subjectivity, incompleteness and internal limitations of each person's ideas and the presence of many command systems. The organization of the effective use of "soft" influence technologies requires adequate logistics ready to operate through unstructured management and extra-institutional forms. At the same time, even situational influence, based, in particular, on the reaction to poorly predictable changes, should include pre-developed and prepared models of influence. In this situation, it is not so much one-off random decisions that become useful, but rather the cultivation of an environment that is favourable for the desired changes, as well as the formation of points of concentration of

positive transformations (stimulating environment and growth clusters).

Harmonious combination of the control and controlled systems requires, firstly, establishment of effective interaction of regulation and self-regulation; secondly, reflection of the dynamics of global, regional, national and local conditions of activity. At the same time, the world-historical process already provides examples of models when agreement within multi-level socio-production systems was achieved with growth inhibition, or even with refusal from development. Such decisions become fatal; development is one of the indispensable conditions of safety. Meanwhile, the role of knowledge in the conveyorization of socially significant innovations tends to increase so significantly that sometimes the emerging society is characterized as a knowledge society. The attitude of society to the value of life and creativity of each individual, as well as the state and dynamics of the totality of values of material and spiritual culture is cardinal. There is a movement of the vector of generalization of social exchange from the form of commodity exchange through labour exchange to the exchange of abilities with the prevalence of creative essential forces. At the same time, support for the functioning of “feedback” is an element of building mechanisms of progressing development.

Conclusions

Accordingly, the organizational-managerial relations themselves are a transforming range of actions that react sensitively to changes in the nature of wealth and its understanding, and therefore, in the tree of goals and means for achieving them. At present, a set of prerequisites has been created for strengthening social pedagogy and moving from the “surgery of society” to “social therapy”, from the abstraction of the “economic man” to the initiatives of a creative person, the dissemination of non-violent management practices, mechanisms of unity of regulation and self-regulation. Thus, a practical and theoretical justification for the necessity and effectiveness of complex organizational-managerial transformations corresponding to the spirit and content of the transition period is ready. The value of creativity is associated with its purely individual nature, which, however, does not at all negate the need for its organizational-managerial design, but only significantly complicates

it. The methodology of strategic influences (in particular, on the use of centrifugal and centripetal forces) is significantly transformed with the change in society and its components. However, the obsolescence of organizational schemes in these conditions and the need to abandon prejudices to improve the efficiency of power / management does not mean abandoning project activities as such, including when optimizing impacts. When creating a strategy, it is important to enrich the experienced movement towards understanding the process with knowledge of the possibilities of taking into account the characteristics of the moment. The accuracy and fruitfulness of influencing what is happening significantly depends on the quality and timeliness of incoming information, the level of its analysis, the professionalism and morality of those making the choice.

Accordingly, knowledge and understanding of real states, trends, possible prospects for social development and improvement of organizational-managerial work are closely interconnected and resonate with each other. And ahead of us awaits not a relaxed and grassy existence, but an extremely rich life and therefore subordinated to the harsh demands of development. Accordingly, the very nature of post-globalism turns out to be susceptible to social combinations of consumer self-restraint in favour of the creative process and individual self-discipline for the sake of realizing essential forces. This circumstance additionally pushes us to search for intensive, rather than extensive paths of transformation in search of effective paths of sustainable development: technical-technological, political-economic, socio-cultural, spiritual-mental communities.

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Tetiana Yemchuk

ORCID: <https://orcid.org/0000-0002-3533-9587>

*Candidate of Geographical Sciences,
Associate Professor of the Department
of Economical Geography and
Ecological Management
Chernivtsi Yuriy Fedkovych National
University
(Chernivtsi, Ukraine)*

**FOOD SECURITY:
CONTEMPORARY
CHALLENGES AND
SOLUTIONS**

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Abstract

The article examines the key aspects of ensuring food security in the conditions of global changes and economic crises. The main focus is on problems related to uneven access to food, the impact of climate change, political conflicts and socio-economic challenges. The paper analyzes modern technological solutions to increase agricultural productivity, such as genetically modified organisms (GMOs), precision agriculture and vertical farming, which can help overcome food challenges. Particular attention is paid to the social aspects of food security, in particular the support of vulnerable segments of the population, and the role of international cooperation in ensuring a stable food supply.

Keywords: *food security, malnutrition, intensification of agricultural production, agriculture, rational use of natural resources.*

The article offers a comprehensive approach to solving food security problems, taking into account environmental, economic and social factors. Food security is one of the key global problems of the modern world, which directly affects the well-being of the population, economic stability and sustainable development of society. In the conditions of constant population growth, global climate change and economic inequality in the world, the issue of access to food is becoming more and more critical.

The first scientific studies that systematically paid attention to the food problem began in the 18th century. Among the first researchers, we can mention the English economist Thomas Malthus, who in his

work “Essay on the Law of Population” (1798) pointed out the imbalance between the growth of the population and the possibility of providing it with food. Malthus argued that population tends to grow faster than food production, which can lead to famine and other crises.

In the 20th century, the topic of the food problem became the subject of research by international organizations, such as the United Nations Food and Agriculture Organization (FAO), which was founded in 1945 (FAO). FAO plays an important role in monitoring the state of food security in the world and promoting the development of agriculture.

According to the FAO more than 820 million people in the world suffer from chronic hunger, which is unacceptable in the conditions of technical and scientific progress that humanity has achieved (FAO; WFP; Global Hunger Index; UNICEF; WHO) (Figure 1.8 Regions with the Highest Food Insecurity).

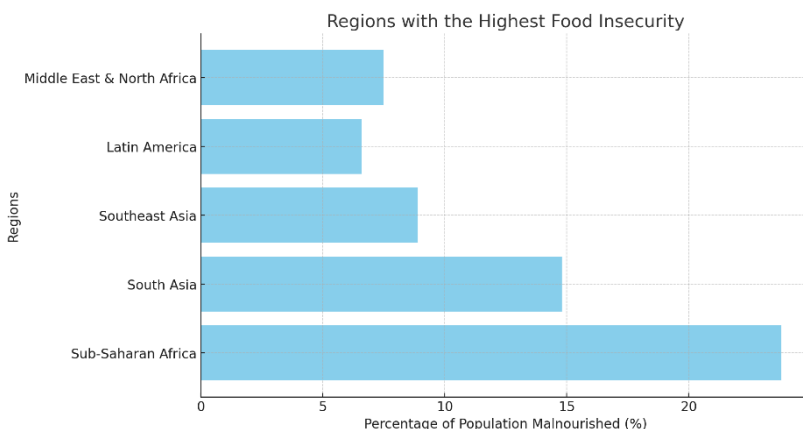


Figure 1.8 Regions with the Highest Food Insecurity

Source: World Bank

Sub-Saharan Africa is the most affected region in the world in terms of food insecurity and malnutrition. According to FAO, about 23.8% of the region’s population suffers from malnutrition, which is the highest rate in the world. Africa’s most populous country, Nigeria, also faces significant food security challenges, particularly in the northern regions, due to the effects of armed conflicts and

extremist groups such as Boko Haram. Droughts, armed conflicts and a low level of agricultural development lead to food shortages.

In the Democratic Republic of the Congo, more than 21 million people suffer from chronic hunger, which is associated with long-term conflicts, political instability and the lack of adequate infrastructure. Food security is a critical issue in this country, where a large part of the population depends on humanitarian aid.

Somalia is one of the most vulnerable to famine due to droughts, civil war and low levels of agricultural development. In recent decades, droughts and conflicts have led to regular famines. Other countries, such as South Sudan, Ethiopia, Chad and the Central African Republic, are also facing difficult food situations due in part to climate change, internal conflicts and poor infrastructure.

South Asia is the second largest undernourished region in the world. About 14.8% of the population of this region have insufficient access to food products. Although India has achieved significant economic growth, the country remains home to a large number of people suffering from malnutrition. According to the Global Hunger Index, India is among the countries with serious food problems. Internal socio-economic inequalities, uneven access to resources and climate change make the situation worse. Bangladesh is also struggling to ensure food security for its population. Frequent floods caused by climate change worsen access to food in rural areas. Despite the growth of agricultural production, a large part of the country's population remains vulnerable to hunger. In Pakistan, about 40% of children suffer from malnutrition. This is caused by socio-economic problems, as well as political instability in the region. At the same time, long-term conflicts on the border with Afghanistan and internal migration processes complicate access to food for many segments of the population.

Although food security has improved in East and Southeast Asia, there are still about 8.9% of people who do not get enough to eat. Cambodia and Laos remain vulnerable due to low agricultural productivity, frequent natural disasters and limited access to modern technology. Most of the population in rural areas do not have sufficient resources to grow food, and floods and droughts further worsen the situation. The Philippines frequently faces natural disasters such as typhoons and earthquakes that destroy crops and

disrupt food supplies. This creates significant challenges for food security on islands, especially in remote areas.

In Latin America and the Caribbean, about 6.6% of the population has problems with access to food, although the food situation in this region is better compared to Africa and Asia. The economic crisis in Venezuela has seriously affected access to food. Hyperinflation, shortages of basic food and medicine have left millions of Venezuelans on the brink of starvation. Many depend on humanitarian aid or leave the country in search of better living conditions. As one of the poorest countries in the Western Hemisphere, Haiti constantly faces a food crisis due to frequent natural disasters such as earthquakes and hurricanes that destroy agriculture and infrastructure. About half of the country's population lives in a state of chronic malnutrition.

In the Middle East and North Africa region, food insecurity also remains a serious problem, with 7.5% of the population suffering from hunger, particularly due to conflict and political instability. The civil war in Yemen has led to one of the worst humanitarian crises in the world. About 80% of the country's population, or more than 24 million people, are in need of food aid. Due to blockades and armed conflicts, access to food is extremely limited. The civil war, which has been ongoing since 2011, has led to massive destruction and crop losses. Many people in Syria are dependent on humanitarian aid as the domestic economy is devastated and food production has been reduced to a minimum.

As defined by the United Nations, food security is achieved when all people at all times have physical, social and economic access to sufficient quantities of safe and nutritious food for an active and healthy life. This concept includes not only the sufficiency of food products, but also their quality, stability of supply and the possibility of obtaining products for all sections of the population. In today's world, food security is becoming increasingly important due to a number of global challenges: population growth, climate change, depletion of natural resources, economic and political instability. Despite significant progress in agriculture and technological development, millions of people still suffer from hunger and malnutrition, especially in developing countries. This indicates the need for a more in-depth analysis of existing models of ensuring

food security and the development of new approaches aimed at a sustainable and fair solution to this problem.

The study of food security covers various aspects, including food production, distribution, availability and consumption, as well as issues of policy and international cooperation. However, ensuring sustainable food security requires an integrated approach combining economic, environmental and social factors. In this context, innovations in the agricultural sector, optimization of product supply chains, and efficient use of natural resources play an important role.

The global food system today faces many challenges. From the impact of climate disasters, such as droughts and floods, to infrastructure problems and political instability, all these factors make it difficult to sustainably supply food to the population. Accordingly, to solve the problem of food security, it is necessary to develop and implement comprehensive, multi-level strategies that would cover all stages of the food production and supply chain – from the farm fields to the consumer’s table.

Intensification of agricultural production

One of the main ways to ensure food security is the intensification of agriculture. Intensive agriculture involves increasing the yield of crops and the productivity of animal husbandry due to the introduction of the latest technologies and the rational use of resources. This makes it possible to increase the volume of food production without significantly expanding the land area, which is especially important in conditions of limited land resources and soil degradation.

However, intensification has its own challenges and negative consequences. Excessive use of chemical fertilizers and pesticides can lead to soil and water pollution, as well as to a decrease in biodiversity in agricultural landscapes. In addition, a high level of mechanization often leads to soil compaction, which negatively affects their structure and reduces their ability to recover naturally. In this regard, there is a need to develop balanced approaches that would combine intensive production with environmental responsibility.

Despite these challenges, intensification remains an important way to develop the agricultural sector, especially in the context of global population growth and the need to increase food supplies. It

helps to increase the competitiveness of agricultural enterprises, contributes to the reduction of food imports and strengthens the food security of countries. Thus, the intensification of agricultural production is an integral part of modern agricultural policy, which requires taking into account both economic and environmental aspects.

Technologies such as precision agriculture, which is based on the use of drones, sensor systems and satellite data, are being actively implemented today. These technologies allow farmers to accurately determine the needs of plants for water, fertilizer or protection from pests. This significantly reduces resource costs, increases field productivity and minimizes negative impact on the environment. For example, in Israel, a country known for its agricultural technology, precision farming systems are actively used to maximize yields in the face of limited water resources.

The introduction of genetically modified organisms (GMOs) is another important element of modern agriculture (ISAAA). GMO crops are more resistant to droughts, pests and diseases, which allows for stable harvests even in adverse conditions. For example, in the United States and Brazil, genetically modified varieties of corn and soybeans are widely used, which show increased yields compared to traditional varieties. However, in many countries, particularly in Europe, the introduction of GMOs faces resistance due to concerns about possible negative consequences for human health and the environment. Therefore, an important part of this strategy is the development of scientific research aimed at studying the safety of GMOs, as well as conducting public dialogue on this issue.

Figure 1.9 showing the introduction of GMO crops in different regions of the world in 2023, with areas occupied by GMOs in millions of hectares. As can be seen, North and South America are significantly ahead of other regions in terms of the number of GMO crops, in particular in the USA, Brazil and Argentina. Asia also has significant areas under GMOs, while Europe and Africa have much smaller scale of introduction of these crops.

Figure 1.10 shows the introduction of GMOs by crop type in 2023. As you can see, the largest areas are occupied by GMO soy and corn, which are the main genetically modified crops in the world. Cotton and canola also occupy significant areas, while other

crops, such as sugar beet and alfalfa, have lower introduction volumes.

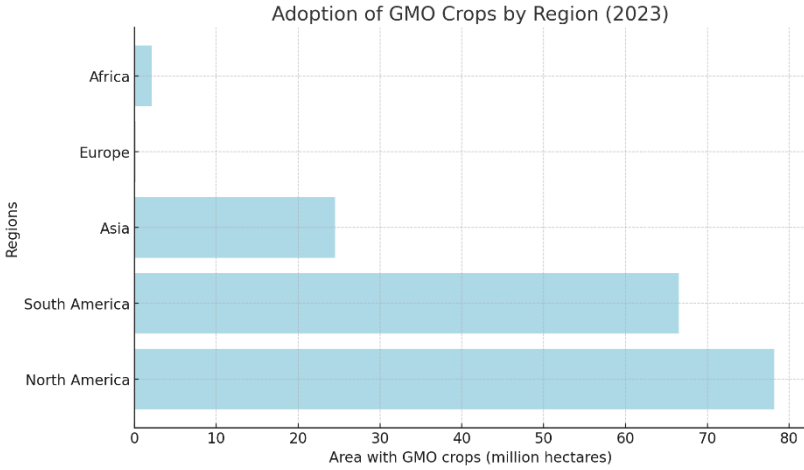


Figure 1.9 Adoption of GMO Crops by Region (2023)
Source: World Bank

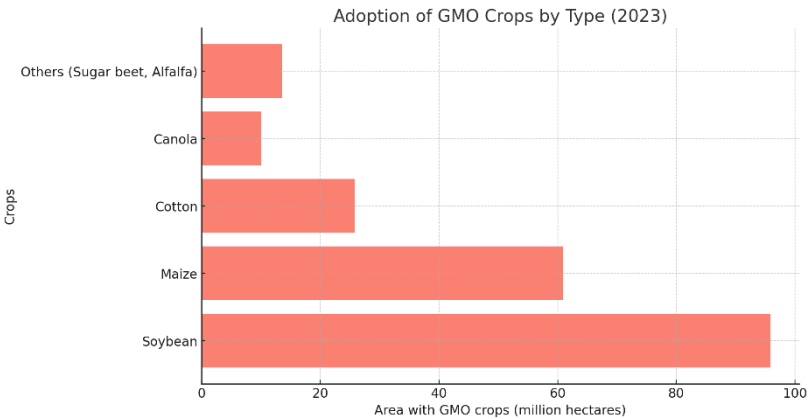


Figure 1.10 Adoption of GMO Crops by Type (2023)
Source: ISAAA

An equally important innovation is urban agriculture and vertical farms, which appeared in response to the rapid growth of

urbanization and the need to provide food for the urban population. Vertical farms, which are located in multi-story buildings, allow you to grow crops in a limited space, using artificial lighting and controlled environmental conditions. This makes it possible to reduce the cost of transporting products to consumers and significantly reduce losses during storage. Urban farming is becoming especially popular in large metropolises such as Tokyo, Singapore and New York, where traditional agriculture cannot meet the needs of the population.

Optimization of food supply chains

However, it is not only food production that is a challenge for food security. According to experts, up to 30% of all manufactured products are lost during transportation, storage and distribution. This puts additional strain on food systems, especially in developing countries where infrastructure is often at a low level. To reduce such losses, it is necessary to introduce the latest technologies in logistics processes and develop the infrastructure of product storage.

In particular, cold supply chains play a key role in ensuring the proper storage of perishable products such as vegetables, fruits, meat and dairy products. The absence or insufficient development of refrigeration systems can lead to massive losses of products even before they reach the market. In African countries, for example, food loss due to poor storage is one of the main causes of food shortages.

Investments in the development of transport infrastructure are also important for improving access to food. In many countries with large territories or difficult geographical conditions, the delivery of products to markets is a significant problem. For example, in Brazil, one of the world's largest producers of agricultural products, transport problems and poor road quality result in large food losses during transportation from rural areas to urban centers.

Along with infrastructure improvements, the development of local farmers' markets, which help shorten supply chains and reduce transportation costs, must also be supported. Local markets allow farmers to sell their produce directly to consumers, reducing dependence on large food corporations and international suppliers. This practice is especially important in times of crisis, when global supply chains may be disrupted by economic or political circumstances.

Rational use of natural resources

Agriculture is the main consumer of natural resources, especially water, land and energy. In many regions of the world, the irrational use of these resources leads to their depletion, which complicates the production of food in the long term. Therefore, one of the important strategies for ensuring food security is the transition to sustainable agriculture, which is based on the rational use of resources and the preservation of ecosystems.

Efficient use of water is one of the most important tasks for modern agriculture, especially in the conditions of climate change and increasing scarcity of water resources in many regions of the world. Agriculture consumes about 70% of all available fresh water resources, and in conditions of constant population growth, water reserves are becoming increasingly valuable. The use of modern irrigation systems, such as drip irrigation, allows you to significantly reduce water consumption and increase irrigation efficiency. Drip irrigation delivers water directly to plant roots, minimizing water loss through evaporation and runoff. In countries such as Israel, where water scarcity is a particularly acute problem, the use of these systems makes it possible to successfully grow crops on limited water resources.

Another important aspect is the preservation of soil fertility. Land depletion due to excessive use of chemical fertilizers, pesticides and irrational farming is a serious problem that threatens food security in many countries. One of the solutions is the implementation of crop rotation practices, organic farming and agroforestry. These methods make it possible to maintain the ecological balance, enrich the soil with organic substances and reduce erosion. In Europe, for example, more and more farmers are switching to organic methods of growing crops, abandoning chemical fertilizers and pesticides, which contributes to the preservation of natural ecosystems.

In addition to water and land conservation, energy efficiency is an important component of sustainable agriculture. The use of renewable energy sources such as solar and wind power in food production helps reduce greenhouse gas emissions and dependence on fossil fuels. In many countries, farmers are already installing solar panels on their farms, which allows to reduce electricity costs and increase the resistance of production to fluctuations in energy prices.

Adaptation to climate change

Climate change poses a serious threat to food security because it directly affects crop yields, access to water resources, and growing conditions. Changes in temperature, fluctuations in rainfall and more frequent natural disasters, such as droughts, floods or hurricanes, cause significant damage to the agricultural sector. Adapting to these changes is one of the key challenges for ensuring a sustainable food supply.

One of the important areas of adaptation is the development of crop varieties resistant to climate change. Scientists are working on breeding new varieties of plants that can withstand extreme weather conditions, such as prolonged droughts or heavy rains. For example, many African countries have already started to use varieties of corn and sorghum that are resistant to droughts, which allows to ensure a harvest even in the harshest climatic conditions.

Another important approach is changing agricultural practices. For example, farmers can change their cropping calendar to adapt to new climatic conditions. In some regions, where previously water-intensive crops were grown, farmers are switching to more drought-tolerant species. In addition, the use of agroclimatic models and forecasting allows you to plan field work in advance and avoid losses due to unpredictable weather events.

Social programs and support for vulnerable population groups

In the context of ensuring food security, not only the issue of production, but also access to food products for all segments of the population is important. This is especially true for the most vulnerable categories, such as low-income families, residents of remote rural areas or refugees, who face constant difficulties in accessing food.

Government food subsidies and assistance programs can significantly facilitate access to food for these population categories. For example, many countries have programs that provide for the distribution of food packages or the provision of subsidies for the purchase of basic foodstuffs. Such programs are especially relevant during crisis situations, when as a result of economic upheavals or natural disasters, the prices of food products increase, and part of the population does not have the opportunity to buy them.

An important part of social programs is also the support of small farmers, who are often the main providers of food in their communities. Smallholder farmers often lack access to modern technology, finance or markets, limiting their productivity and development opportunities. Government support programs, including credit, technical assistance and training, can significantly improve their situation and ensure food security at the local level. In many countries in Africa, Latin America and Asia, the development of smallholder farming is becoming a priority for governments and international organizations, as these farmers play a key role in providing food for their communities.

International cooperation

The problem of food security is global, and its solution requires the efforts of not only individual countries, but also the international community. The globalization of food markets makes countries interdependent, and disruptions in food supply in one part of the world can have serious consequences for other regions. Therefore, international cooperation is an important element of the food security strategy.

International organizations such as the Food and Agriculture Organization of the United Nations (FAO) play a key role in coordinating efforts to address world hunger and malnutrition. FAO is active in the development of global policies in the field of food security, the implementation of technologies in developing countries and the provision of humanitarian assistance during crises.

Humanitarian programs that provide food aid to the population during war, natural disasters or economic crises are an important part of international cooperation. For example, in Syria, Yemen and some African countries, humanitarian aid from the UN and other international organizations is the only source of food for millions of people.

In addition, an important aspect is the exchange of technology and experience between countries. Developed countries can help developing countries implement modern methods of growing crops, efficient use of resources and preservation of ecosystems. For example, countries such as Israel and the Netherlands, which have limited natural resources but have achieved high efficiency in

agriculture, can share their experience with countries that need to optimize their agricultural sector.

Conclusions

Solving the food problem in the future is a prerequisite for ensuring the stable development of humanity. The growth of the world's population, which is projected to reach about 10 billion people by 2050, is putting additional pressure on the world's resources and food security system. Without the implementation of effective solutions, the growth of food needs can lead to large-scale crises that will affect the stability of societies, the development of economies and the ecological situation on the planet.

One of the key aspects is the need to increase the productivity of agriculture without harming the environment. This requires a transition to sustainable production methods that combine high yields with rational use of natural resources. The introduction of innovative technologies such as precision agriculture, automation and biotechnology will allow more efficient use of land, water and other resources, which is critical in regions with limited opportunities for agricultural land expansion.

On the other hand, solving the food problem is impossible without ensuring equal access to food resources in different regions of the world. The problem of hunger and malnutrition, which persists in many countries in Africa, Asia and Latin America, requires global cooperation, as well as the efforts of international organizations, governments and the private sector. Development of food storage, transportation and distribution systems is an important step towards reducing food waste and increasing food availability.

At the same time, climate change creates additional challenges for the agricultural sector, affecting soil fertility, water resources and the stability of production systems. Adaptation of agriculture to new climatic conditions, development of plant varieties resistant to drought and diseases, as well as implementation of risk management methods will become an integral part of the struggle for food security.

The food problem is also an ethical and social one, because access to food is a basic right of every human being. Malnutrition undermines the health, productivity and general well-being of

millions of people, reducing their ability to overcome other social and economic challenges. Thus, ensuring a sufficient level of nutrition for all people is not only the task of individual countries, but also a global mission that requires joint efforts.

Solving the food problem is also important for maintaining peace and security in the world. History shows that food shortages can provoke social unrest, conflicts and mass migration. Therefore, investments in agriculture and food security systems contribute not only to economic development, but also to strengthening political stability in vulnerable regions.

Ensuring food security in the future is an extremely important task that must be addressed at all levels, from local initiatives to international cooperation. This requires an integrated approach that includes innovation, sustainable development, social justice and attention to environmental aspects. Only under such conditions will it be possible to avoid crisis situations and ensure the prosperity of future generations.

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Chapter 2

USING MARKETING AND LOGISTICS IN THE MANAGEMENT OF SOCIO- ECONOMIC AND ECOLOGICAL SYSTEMS

Maksym Bezpartochnyi

ORCID: <https://orcid.org/0000-0003-3765-7594>

*Doctor in Economics, Professor
Department of Economics,
Entrepreneurship and Marketing
National University “Yuri Kondratyuk
Poltava Polytechnic”*

Nataliia Trushkina

ORCID: <https://orcid.org/0000-0002-6741-7738>

*Ph.D. in Economics, Senior Researcher,
Research Center for Industrial Problems
of Development of the NAS of Ukraine*

Yuliya Shkrygun

ORCID: <https://orcid.org/0000-0002-7623-8213>

*Postgraduate Student
Institute of Industrial Economics of NAS
of Ukraine*

Tamila Patlachuk

ORCID: <https://orcid.org/0009-0007-4093-6697>

*Postgraduate Student
Research Center for Industrial Problems
of Development of the NAS of Ukraine
(Poltava, Kharkiv, Kyiv, Ukraine)*

**DIGITAL
PLATFORM AS A
TOOL FOR
IMPROVING THE
EFFICIENCY OF A
COMPANY’S
LOGISTICS
MANAGEMENT IN
THE CONTEXT OF
DIGITISATION**

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Abstract

Digitalisation is a reflection of technological, economic and social progress. At present, the process of digitalization has a dual nature, consisting of a combination of the characteristics of a factor and a component. At a certain stage of human development, digitalization reflects existing changes, through this process, provokes, and determines a new round of further changes. It can be noted that in logistics activities these processes are present to a significant extent and have long-term prospects.

At the same time, the processes of digitalization and the development of logistics activities are interdependent. In the modern world, the processes of accelerated digitalisation, on the one hand, are a factor of changes in economic and social spheres of life, and, on the other, are a component of these changes, as a reflection of the general needs of society that are rapidly changing.

In view of this, the purpose of this article is to substantiate the need to create an integrated digital platform for organizing logistics processes in the context of the global digital space. The proposed platform differs from existing ones in that it forms a new basis for ensuring the efficiency of logistics activities. Partnership implies common goals, philosophy, marketing strategy, trust and cooperation between the participants in the relationship to promote common interests and decisions, ensure data transparency, mutual benefit, increase the level of customer loyalty, and attract a new audience. This, in turn, is an effective basis for ensuring the effectiveness of interaction as the basis for the effectiveness of such a business model as a digital platform.

It has been established that the most effective partnership relationships work on a cluster basis, which involves the interaction of territorially close economic agents, the joint use of infrastructure, personnel, innovations, consumer culture, to assess and use the pros and cons of the relevant territories as realistically as possible (infrastructure, communications, consumer demand, coverage and possibilities of using Internet networks, etc.), and also meets the modern challenges of society and provides significant advantages for the organization of effective customer-oriented logistics activities taking into account regional specifics.

Unlike existing electronic platforms, the proposed integrated digital logistics platform allows you to effectively solve a dual task – the transformation of global supply chains into alternative – diversified ones. This will contribute to the stability of the organization of logistics

activities of companies and the need to share resources to ensure the economic and environmental sustainability of supply chains.

The cluster basis and partnership relationships of the participants of such a platform allow you to more effectively take into account modern trends in the transformation of logistics activities of companies towards the reduction of supply chains, namely: an increase in the share of sales directly to consumers; constantly accelerating deliveries; social demand for the benefits of retail stores, the implementation of an omnichannel communication strategy.

The implementation of an integrated digital platform will allow you to increase the efficiency of logistics management by ensuring: optimization of internal logistics; emotional communication with the consumer based on the real possibility of implementing an omnichannel consumer service strategy; high adaptability to customer needs through the production of a new product/service; greater control over processes within the cluster; a common vision of the mission of the activity by all participants of the platform based on the establishment of partnership relations; participation in important social projects of the relevant territories (reduction of greenhouse gas emissions, development of social infrastructure) at the level of B2A interaction; proactive communication with the consumer through a clear understanding of the features and capabilities of the relevant society and, on this basis, maximum customer satisfaction.

Keywords: *logistics management, logistics processes, logistics service, customer engagement, interaction, partnership, customer relationship management, digital platform, digital technologies, information system, cluster structure, digital ecosystem, efficiency, sustainable development.*

Introduction

In the changing and fast-paced present, companies are forced to constantly transform in order to meet the requirements of the digital space and the Sustainable Development Goals. The transformation process reflects the progressive introduction of digital technologies into the operational and organizational processes of enterprises. It should be aimed at a comprehensive digital interaction between the consumer with his needs and resources (material and intangible) that are able to provide them.

It is worth emphasizing that at present, the basis for effective provision of such interaction is digital platforms and platform

business models, taking into account the needs for sustainable and environmentally friendly solutions for the effective organization of logistics processes.

The analysis of scientific sources indicates the relevance of the selected research topic. Researchers (Brzozowska et al., 2023; Kwilinski et al., 2020; Mourtzis, Panopoulos, 2022; Pînzaru et al., 2022; Spivakovskyy et al., 2023; Uribe-Linares et al., 2023; Hubarieva, Buka, Bielikova, 2023; Hutsaliuk et al., 2023; Khaustova et al., 2024a, 2024b; Vyshnevskiy et al., 2019) pay considerable attention to various aspects of the impact of digitalization processes on the organization of companies' activities in general and logistics management in particular.

A considerable number of scientific works by foreign and Ukrainian scientists (Ahmad et al., 2022; Alqarni et al., 2023; Angstein, Parung, 2024; Arun, 2024; Casado-Vara et al., 2019; Hasan H., 2019; Kasych, 2024a, 2024b; Kavka et al., 2018; Lin et al., 2023; Mezquita et al., 2021; Ravi et al., 2024; Varriale et al., 2023; Zhou et al., 2024) are devoted to the issue of applying the tools, methods and principles of digital, intelligent and smart logistics as important areas of logistics management transformation.

Certain aspects of strategizing and creating digital platforms as an effective tool for strategic management of logistics activities of enterprises are covered in scientific publications by such scientists as: Hu (2022); Liu et al. (2021); Rahman et al. (2019); Tozanlı et al. (2020); Vidal Vieira et al. (2017); Vyshnevskiy (2021).

Despite the wide range of scientific research on the chosen topic, the multifaceted nature of individual issues requires further development. And especially the solution of this problem is becoming more relevant in the context of the rapid development of the digital economy and the intensification of global transformations.

Thus, this problem determined the purpose of this article, which is to substantiate the feasibility of creating an integrated digital platform for organizing logistics processes in the context of the global digital environment.

Materials and Methods

The theoretical and methodological basis of the research is the provisions of the institutional theory; theory of systems, management, information society, network economy, digital

economy; concepts of sustainable development, strategic, logistics and marketing management, customer relationship management, economy of enterprises.

The following general scientific methods were used in the research process: analysis and synthesis, comparison and classification, expert survey, structural and logical generalization.

The Logistic Performance Index (LPI) was used to determine the modern problems of the formation and development of the logistics management system; implementation of information and communication technologies in companies – World Digital Competitiveness Ranking (WDCR); Network Readiness Index (NRI); ICT Development Index (IDI).

Information on the problems and prospects of strategic management of the client experience was obtained on the basis of a comparative analysis and generalization of the methods of assessing digital maturity and transformation of business processes, which were developed by international consulting companies, analytical centres and scientific institutions: Arthur D. Little, Cisco, Deloitte, Global Center for Digital Business Transformation, IMD, Ionology.

To date, many methods of evaluating the digital transformation of business processes of enterprises have been developed, one of the components of which is client-centricity (customer experience, digital logistics service, omnichannel, digital marketing and communications) (Table 2.1).

It should be noted that the quality of logistics services as an indicator of the Logistic Performance Index is assessed using the methodology developed by the World Bank. According to World Bank researches for 2007-2023, there is a positive and stable trend in the positions of the surveyed European countries in the ranking of key indicators characterizing the level and quality of consumer service (Table 2.2). For example, according to the indicator “Competence and quality of provided logistics services”, the rank of Lithuania increased by 31 positions; Latvia – by 20; Estonia – by 17; Bulgaria – by 7; Poland by 5 positions. But according to this indicator, the position in Ukraine worsened (decrease by 2 points).

At the same time, some European countries have improved their positions in the logistics efficiency rating based on the “Timeliness of deliveries” indicator. Thus, according to this indicator, the rank of

Estonia increased by 43 positions; Poland – by 19; Latvia – by 18; Lithuania – by 15. However, in Ukraine for the years 2007-2023, the position according to the indicator “Timeliness of deliveries” worsened (decrease by 21 points); in Bulgaria – by 3 points.

Table 2.1

Methods of evaluating the transformation of enterprises’ business processes

Method	Content
Deloitte’s Digital Maturity Model	Assessment of digital capabilities according to 5 key dimensions: consumers, strategy, technology, production, structure and culture
Digital Transformation Index (Arthur D. Little Agency)	Areas of evaluation: strategy and management; products and services; customer management; operations and supply chains; corporate services and control; Information Technology; workplace and culture
Digital Maturity Index of enterprises	5 consolidated areas of assessment: strategy and business model; consumers; organizational culture and personnel; operational processes; information technology
The “Digital Piano” model (developed by the Global Center for Digital Business Transformation at the initiative of IMD and Cisco)	7 transformational categories that are the most important elements of the organization’s value chain: business model; the organizational structure; employees; processes; IT capabilities; offers; interaction model
The Digital Transformation Change Index (proposed by Ionology)	5 blocks: strategy and culture; staff and clients; processes and innovations; technologies; data and analytics

Source: compiled by the authors based on (Bezpartochnyi et al., 2022; Bezpartochna et al., 2020; Bezpartochna, Trushkina, 2023; Harmash et al., 2024; Hryhorak et al., 2020; Kwilinski et al., 2020, 2022, 2023; Molchanova et al., 2020)

The International Institute for Management Development (IMD), a Business School in Switzerland, has developed a world rating of digital competitiveness (World Digital Competitiveness Ranking, WDCR) (Table 2.3). This index allows you to assess the potential

and readiness of 63 countries of the world to implement digital technologies for economic and social transformations. The calculation of the integral index is carried out according to 52 criteria, which are divided into three areas: knowledge, technologies, readiness for the future.

Table 2.2

Place of Surveyed European Countries in the LPI Rating

Country	Year	Indicators						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bulgaria	2007	55	53	43	39	59	66	64
	2018	52	55	65	59	41	42	64
	2023	51	46	46	49	57	43	52
Estonia	2007	47	45	53	58	56	42	40
	2018	36	40	30	43	39	28	44
	2023	26	28	10	23	26	37	39
Latvia	2007	42	48	35	41	29	58	58
	2018	70	81	113	77	81	49	49
	2023	34	28	17	34	43	31	44
Lithuania	2007	58	64	50	74	48	52	80
	2018	54	54	43	50	74	46	66
	2023	38	33	35	62	26	37	39
Poland	2007	40	38	40	40	52	38	51
	2018	28	29	23	31	12	33	35
	2023	26	33	21	23	38	24	39
Ukraine	2007	73	90	55	80	83	97	74
	2018	66	61	56	52	68	89	119
	2023	79	92	76	94	75	90	89

Note: Overall LPI (1); Logistics quality and competence (2); Timeliness (3); Tracking (4); International shipments (5); Customs (6); Infrastructure (7).

Source: compiled by the authors based on (The World Bank, 2023)

The Network Readiness Index (NRI, Portulans Institute, USA) (Table 2.4) was developed to assess the network (technical) readiness of the countries of the world to use the possibilities of information and communication technologies and systems. From 2002 to 2016, this index was published by the World Economic Forum as part of the Global Information Technology Report. Today, on the basis of NRI, 134 countries of the world are evaluated according to 60 indicators, which are systematized according to 4 main groups: technologies, personnel, management, influencing factors. NRI

covers issues from artificial intelligence technologies and the Internet of Things to the role of the digital economy in achieving the Sustainable Development Goals.

Table 2.3

World Digital Competitiveness Ranking of the Surveyed European Countries

Country	Year				Rank changes
	2017	2019	2021	2022	
Estonia	27	25	25	20	↑+7
Lithuania	29	29	30	25	↑+4
Latvia	33	35	37	34	↓-1
Poland	38	36	41	46	↓-8
Ukraine	59	58	-	-	not rated

Source: compiled by the authors based on (The IMD World Competitiveness Center, 2022)

The ICT Development Index (IDI) is a combined indicator that characterizes the achievements of the countries of the world in terms of the development of information and communication technologies. The index was developed according to the methodology of the International Telecommunication Union, a specialized unit of the United Nations that defines global standards in the field of ICT. The IDI is calculated on the basis of summing up 11 indicators to an integral criterion, which allows comparing the achievements of the countries of the world in the development of the ICT sphere. The index can be used as a benchmarking tool at the global, regional and national levels.

Table 2.4

Network Readiness Index on the example of the Surveyed European Countries

Country	Year		Rank changes
	2020	2022	
Ukraine	64	50	↑+14
Estonia	23	22	↑+1
Poland	33	34	↓-1
Latvia	37	39	↓-2
Lithuania	29	33	↓-4

Source: compiled by the authors based on (Dutta et al., 2022)

As the analysis shows, the leaders in the field of information and communication technologies in 2007 were Sweden, South Korea, Denmark, the Netherlands, and Iceland. In 2017, Iceland, South Korea, Switzerland, Denmark, and Great Britain were the leading countries in the field of ICT.

During 2007-2017, the positions of some European countries worsened. Thus, the rank of Ukraine in the rating of the development of information and communication technologies decreased by 28 points; Poland – by 10; Lithuania – by 8 points. At the same time, Estonia’s position improved by 9 points (Table 2.5).

Table 2.5

The ICT Development Index of the Surveyed European Countries

Country	Year				
	2007	2010	2014	2015	2017
Estonia	26	33	21	20	17
Latvia	36	40	33	37	35
Lithuania	33	35	40	40	41
Poland	39	38	44	44	49
Ukraine	51	62	73	79	79

Source: compiled by the authors based on (International Telecommunication Union, 2017)

Thus, as the analysis of statistical data shows, enterprises in the surveyed countries of the world actively use modern digital technologies and information systems. This, in turn, will affect the effective organization of logistics processes in the digital economy.

Results and Discussions

The concept of “digital platform” (DP) combines digital technologies, platform business models and platform ecosystems in accordance with business needs. The set of DP participants, as well as the system of relationships and interactions between them, create a platform ecosystem.

Research shows that by their nature, DPs are technological platforms that provide the opportunity to use the advantages of the digital economy based on direct interaction between the subjects of the relevant relations in a single Internet environment in order to create value for each subject of economic activity.

It should be emphasized that the distinguishing feature of DPs from classical methods of trade and mediation is direct interaction and transactions between subjects using various interaction formats – B2B, B2C, B2G, C2C. It is advisable to consider interaction as a system that contains such blocks as work (Gig economy), sharing (Sharing economy), movement (On-demand economy), cooperation (Collaborative economy).

Digital platforms change models of interaction between people, methods and mechanisms of activity, provide effective communications, speed and reliability of operational processes, reduce time and space. The obvious advantages of digital platforms for organizing logistics processes include that they can create unique value propositions due to the ability to work in several markets simultaneously; provide the ability to use appropriate standard solutions and services without the need to develop them; operate at the macro, micro, mesa and global levels; serve individual links of the chain, chains or networks of chains; share assets, resources, etc.

It is known that digital platforms, in accordance with their unique capabilities, will form various models of socio-economic activity – platform economies. Each DP unites relevant participants and forms its own type of socio-economic activity and the corresponding business model based on complex standard algorithms of interaction between subjects. The DP model is determined by the one who owns the assets and outlines the conditions and rules of interaction.

The study found that the “access economy” is widely used in logistics activities - a platform business model in which goods and services are provided on the basis of access, rather than ownership, i.e. it is an activity based on the provision of work, services, goods on demand. A characteristic feature of this model is that asset ownership and exploitation risks are decentralized, and service criteria are set by the digital platform.

A vivid example of such a model is the company “Uber”, which focuses on providing services for finding, calling and paying for taxis, private drivers, food delivery, parcels and freight transportation. The company connects suppliers who want to rent their assets with consumers who are interested in the temporary use of these assets.

The study identified the advantages of such a business model,

namely: the possibility of a constant increase in services by attracting “fresh” service providers, attracting a wide range of employees under alternative working conditions, reducing operating costs, including those associated with professional licences, reducing the cost of the transaction for the client.

It is noted that the digital platform combines independent workers and therefore different quality of service is possible in one company, which has a negative impact on customer expectations. At the same time, this DP is attractive to consumers because they are not owners and do not feel the financial, emotional “burden of ownership”. The use of such a platform model requires high-quality and responsible interaction between DP participants.

The sharing economy, which is based on the collective use of goods and services, rental or barter instead of sole ownership of goods and services, turned out to be no less widespread. The sharing economy is currently rapidly spreading due to its mass reach, accessibility via the Internet, the absence of intermediaries between the buyer and seller of goods, cost-effectiveness and environmental friendliness due to the multiple use of already existing goods. The modern sharing economy is based on a new behavioural model – users of sharing services do not want to own goods, but want to easily use them thanks to digital platforms.

It should be noted that the sharing economy is becoming a modern trend, determining the development trends in many areas of socio-economic life (rational use of resources, intelligent transport systems, etc.), including digital platforms (shared use of data storage services, etc.).

An analysis of the professional literature allows us to say that e-commerce covers a significant sector of logistics activities. According to the latest data, e-commerce includes electronic sales and purchases of goods using online services or the Internet, electronic data exchange, Internet marketing, online transaction processing, electronic funds transfers, supply chain management.

Priority areas include customer personalization, the Internet of Things, DP, and the development of the regional consumer segment. The e-commerce platform is actively involved in the logistics activities of enterprises without intermediaries in the B2B and B2C formats.

Based on the generalization and systematization of existing definitions of the concept of “electronic commerce” (Bezpartochna et al., 2020), the components of e-commerce are defined, namely: internet commerce, internet marketing, digital marketing, IT-commerce, E-trading, virtual trade, online trade, and the directions of using e-commerce in the logistics activities of enterprises as an effective form of organizing logistics activities and establishing partnership relations in the process of buying and selling products using digital technologies are outlined.

The advantages of such a platform model are enjoyed by both consumers and sellers of goods and services: for buyers, e-commerce shortens the path to receiving goods in time, the ability to receive goods from all over the world, adjust their costs, etc., and for sellers – the opportunity to offer their goods to a huge consumer market.

Analysis of the state of e-commerce allows us to formulate the main trend of further development of this direction – the driver of e-commerce growth is marketplaces. Currently, the requirements for marketplaces have increased significantly. They must ensure their growth through the emergence of new categories and the entry of sellers into several platforms. Consumers’ demanding ness is constantly increasing, which forces the CP to raise the “entry threshold” in professional and monetary terms, create new content, and increase advertising costs.

Of the trends that have emerged, it should be noted that buyers are increasingly using marketplaces for everyday inexpensive purchases, while prices from within marketplaces are only increasing. Modern buyers seek to first “get acquainted” with the product, then compare prices for the product in the Internet space, and only then choose and pay. In addition, buyers are looking for emotional contact with the seller. Therefore, other forms of activity and sales channels should appear in the near future. It is expected that omnichannel will undoubtedly become a necessary condition for successful activity.

A comprehensive study of the functioning of the DP in modern conditions allows us to outline the trends of the further development of the DP in relation to the logistics activity of the enterprise. The DP in logistics is proposed to be considered comprehensively – in the integration of process, functional, systemic, situational approaches.

In the context of comprehensive digitalization, the process of managing the logistics activities of a company should be considered as a symbiosis and integration of management functions, logistics processes and technological and information systems (Kwilinski et al., 2022). Analytical data show that such integration can increase the level of profit by up to 26% (Kwilinski et al., 2023). The logistics activity of an enterprise is impossible without an effective logistics management system. And therefore, a digital platform as a modern and effective form of management should ensure not only the movement of logistics flows, but also be integrated using the functions of logistics management.

According to the definitions of the concepts of “symbiosis” and “integration” “activity”, such integration implies a mutually beneficial close coexistence of independent elements of the system so that they can work together functionally. It is advisable to focus the organization of logistics activities on the identified challenges, namely: constantly accelerating supplies; ensuring resilience to changes in logistics management over time; increasing competition and customer needs; the need to share resources; shortage of qualified labour; reducing emissions.

Analysis of existing trends in the development of supply chains provides an opportunity to form the directions of their transformations in order to determine the process of creating an appropriate digital platform. The transformation of global supply chains into alternative – diversified ones is expected, which should contribute to the stability of the organization of logistics activities. At the same time, the trend of the need to share resources and create joint supply chain networks is clearly visible.

The solution to this dual issue lies in the creation of an integrated digital platform (IDP) for the organization of logistics activities, which is a federation of local digital platforms with a cluster type of interaction. This approach will allow for the most realistic assessment and use of all the strengths and weaknesses of the relevant territories (infrastructure, communications, consumer demand, coverage and possibilities of using Internet networks, etc.) (Table 2.6).

The proposed cluster digital platforms do not have administrative borders, are not regional, but cover territories with similar

capabilities and market needs, taking into account available resources (material and intangible), mutually beneficial socio-economic ties between suppliers of goods and services and end consumers.

Table 2.6

SWOT-analysis of an integrated digital cluster-type platform for organizing logistics processes

<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - optimization of internal logistics; - proactive communication with the consumer through a clear understanding of the features and capabilities of the relevant society; - emotional communication with the consumer; - high adaptability to customer needs through the introduction of a new product that corresponds to the level of interactivity of the population of a given territory 	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - dependence on the degree of digital development of the relevant territory; - ensuring the confidentiality of personal data; - manipulation by participants of the digital platform; - incomplete quality and transparency of all levels of supply chains in conditions of insufficient data; - dependence on the degree of digital development of the relevant territory
<p><u>Opportunities:</u></p> <ul style="list-style-type: none"> - ensuring the advantages of retail stores; - sustainable development; - implementation of an omnichannel communication strategy taking into account the mentality of the relevant territory; - functioning of an integrated digital platform based on the principle of “everything-as-a-service”; - implementation of breakthrough innovations in logistics 	<p><u>Threats:</u></p> <ul style="list-style-type: none"> - global challenges (COVID-19, full-scale Russian invasion of Ukraine, armed conflicts in the Middle East, climate change, etc.); - political and macroeconomic instability in the world; - substitution in the logistics services market by new players; - shortage of personnel with digital competencies and skills; - high competition

Source: compiled by the authors

It is advisable to combine cluster digital platforms into networks for sharing resources on a federated basis (create a federation of cluster-type DPs). Within networks, a two-sided market effect emerges when sellers and buyers of any resource create added value for each other. The larger the networks, the more value they create and impact society. Integrated digital platforms can actively

communicate in a B2A format, promoting important social solutions.

Regarding the activities of integrated digital platforms, it should be said that they provide broad and transparent opportunities for interaction between “external” and “internal” partners through their services, for example, to “check” participants in the supply chain (networks, companies, individuals and legal entities, etc.); provide insurance and financial services; services for registering administrative procedures and the possibility of submitting them to specific state bodies; maintain a register of services within the network and provide transparent access to it.

The security of the activities of integrated digital platforms is ensured by a system for identifying network participants, transport infrastructure elements, and vehicles based on the created system of digital twins throughout the supply chain. The strategy for relations with suppliers is to search for opportunities for innovation, product development, and process optimization.

Operators of each platform within the federation provide electronic information on the movement of logistics flows, which can be used by all participants of the IDP. Within the IDP, common standards for the exchange of information and documents operate, which allows significantly facilitating communication, reducing costs, language and customs barriers, legal issues.

If logistics activities require administrative resources, then the format of interaction becomes B2C by integrating administrative information systems into its network, which provides access to all participants in the supply chain to the regulatory framework of the relevant territory. IDP provides service solutions (a complex of information, analytical, management services) for the implementation of a specific logistics operation.

The cluster digital platform ensures the economic and environmental sustainability of supply chains by introducing innovations in interaction with all participants in the logistics services market and customer experience management (Figure 2.1).

It should be noted that such blocks as “interaction”, “data security”, “resource sharing” are implemented using many technological and information systems, including Blockchain technologies, Artificial Intelligence (AI), data mining, Cloud Services, E-commerce.

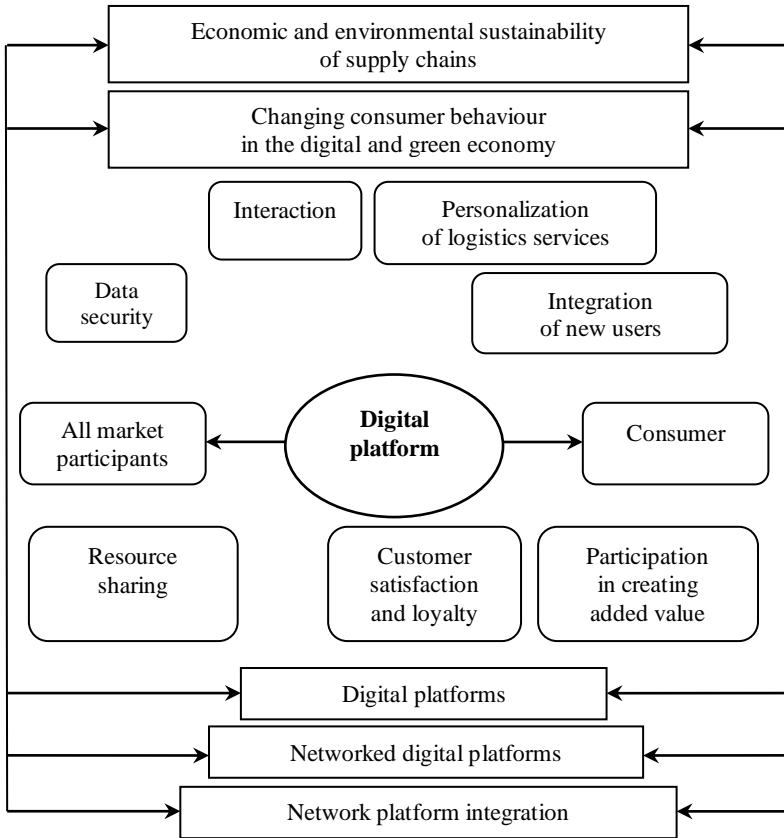


Figure 2.1 Basic platform model of the company's logistics activities

Source: built by the authors

The development of platform economies and related digital technologies (Access economy, Sharing economy, Mesh Economy, People Economy, Instant Gratification Economy, Mobile Economy) and based on them, personalization of logistics services, integration of new users, ensuring satisfaction of consumer demand and loyalty, increasing the volume of e-commerce, and, accordingly, more active participation of consumers in creating value shape the customer experience and change behavioral and “green” self-awareness.

Modern trends in logistics, which have developed as of 2024, consist in the transformation of the logistics management system of retail enterprises in the direction of focusing on consumer needs and requests. This means changing the paradigm of traditional marketing to the concept of relationship marketing with consumers using information technologies, e-commerce tools and digital marketing.

The proposed basic platform model of the logistics activity of the enterprise reflects the essence of digital logistics both as a phenomenon and as a process: from the point of view of the phenomenon, when organizing logistics activities at the enterprise, it should be taken into account that for the end consumer it consists in the formation of behavioral and green self-awareness, and for all market participants it is part of ensuring economic sustainability in the system of relationships B2C and B2B.

The relevance of this issue will only increase over time (by 2030, solar energy consumption should increase 14 times (Trushkina et al., 2021; Kwilinski, Khaustova, Trushkina, 2024); “green” hydrogen 200 times (International Energy Agency, 2024) and it should be expected that this process will soon turn into a trend of logistics transformation. The above-mentioned process affects the implementation of innovations and customer experience management. In summary, we can say that an integrated digital platform is a common information space for cluster digital platforms, which provides transparency for each network participant, instant access to a large number of tangible and intangible resources, reduced transaction costs, commercial predictability of logistics operations, the ability to use information and technological services and solutions of the digital ecosystem in order to profit from each participant in the relevant relationship. In addition, IDPs provide companies with the opportunity work in several markets simultaneously; create unique value propositions and effectively respond to modern challenges.

It was determined that according to the model, cluster DPs should be hybrid, that is, they can attract suppliers and consumers of goods and services, set standards and service prices without owning assets. Therefore, the basis for ensuring the profitability of the activity will be effective management of relationships on the one hand with suppliers, because suppliers are sufficiently autonomous and the DP

does not have strict control over them, and on the other, with consumers, because currently, due to high interactivity, consumers become co-owners of added value.

As a result of the research, the most popular tools for communicating with suppliers and consumers were identified, namely: machine consumers; generalized artificial intelligence; fast deliveries; transparent supply chains in real time. The considered digital business models are most common in logistics activities and form relationships between participants in the logistics services market in accordance with the nuances of the tasks set.

Conclusions

Based on the above, the following conclusion can be drawn. As a result of the study, the need to create integrated digital platforms has been proven, the task of which is to organize the processes of logistics activities of companies in a single complex.

The scientific novelty of the proposed platform lies in the fact that it determines the organizational and economic form of organizing the logistics activities of enterprises in the context of the global digital space, which differs from existing ones in that it determines the formation of a business model focused on creating a digital ecosystem that includes a logistics enterprise; which is based on a cluster structure and partnership interaction between its economic agents.

The proposed integrated digital platform differs from existing platforms in that it forms a new basis for ensuring the efficiency of logistics activities. Partnership involves common goals, philosophy, marketing strategy, trust and cooperation between participants in the relevant relationships to promote common interests and decisions, ensure data transparency, mutual benefit, increase the level of customer loyalty, attract a new audience, which is an effective basis for ensuring the effectiveness of interaction as the basis for the effectiveness of such a business model as a digital platform.

The most effective partnership relationships work on a cluster basis, which involves the interaction of territorially close economic agents, the joint use of infrastructure, personnel, innovations, consumption culture, the most realistic assessment and use of strengths and weaknesses, opportunities and threats of the relevant

territories (infrastructure, communications, consumer demand, coverage and possibilities of using Internet networks, etc.), meeting modern challenges of society and providing great advantages for organizing effective customer-oriented activities, taking into account regional specifics.

The proposed integrated digital platform for organizing logistics activities has no administrative borders, is not regional, but covers territories with similar opportunities and market needs, taking into account available resources (material and intangible), mutually beneficial socio-economic relations between suppliers of goods and services and end consumers.

The integrated digital platform, unlike others, takes into account that at this level of development of technological and information systems, suppliers and consumers of resources increasingly create added value for each other. The more diverse, complete, personalized services can be provided, the more value can be created, more means of creating added value can be mastered at the expense of the capabilities of market participants, and more unique offers can be provided.

It is advisable to combine such platforms in a network for sharing resources on a federated basis (to create a cluster-type IDP federation). IDPs can actively communicate in the B2A format, promoting important social solutions.

Unlike existing digital platforms, the proposed model allows for an effective solution to the dual task of modernity – the transformation of global supply chains into alternative – diversified ones, which should contribute to the stability of the organization of logistics activities, and the need to share resources to ensure the economic and environmental sustainability of supply chains.

The cluster basis and partnership relationships of the participants of the integrated digital platform allow for more effective than others to take into account modern trends in the transformation of logistics activities of companies towards the reduction of supply chains, namely: an increase in the share of sales directly to consumers; constantly accelerating deliveries; social demand for the benefits of retail stores, implementation of an omnichannel communication strategy.

The advantages of the proposed integrated digital platform are the

ability to increase the efficiency of logistics management by ensuring:

- optimization of internal logistics;
- emotional communication with the consumer based on the real possibility of implementing an omnichannel consumer service strategy;
- high adaptability to customer needs through the introduction of a new product corresponding to the level of interactivity of the population of a given territory;
- greater control over processes within the cluster;
- a common vision of the mission of the activity by all platform participants based on the establishment of partnership relationships;
- participation in important social and environmental projects of the relevant territories (reduction of greenhouse gas emissions, development of the social infrastructure of the territory, etc.) at the level of B2A interaction;
- proactive communication with the consumer through a clear understanding of the characteristics and capabilities of the relevant society and, on this basis, maximum customer satisfaction.

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Marta Danylovykh-Kropyvnytska

ORCID: <https://orcid.org/0000-0003-3963-5524>

PhD in Economics, Associated Professor

Yurii Onyshko

ORCID: <https://orcid.org/0009-0003-4822-3510>

Master's Student in Public Administration

Lviv Polytechnic National University

(Lviv, Ukraine)

**E-COMMERCE
MARKET IN
UKRAINE:
CHALLENGES
AND PROSPECTS**

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Abstract

Economic development of countries across the globe is determined by numerous factors, one of which is technological progress. It is technology, primarily Internet and subsequent globalisation, that has affected international trade. Since the early 1960s, businesses have been conducting electronic transactions via primitive computer networks. The birth of e-commerce (EC) is considered to be on 11 August 1994, when CDs were first sold on the US retail platform NetMarket. The e-commerce industry is growing globally and will mostly likely keep growing.

However, along with this development, Internet security has become an issue, i.e. personal data protection from unauthorised access and theft, integrity of business reputation, anti-fraud measures to prevent financial losses, compliance with data protection laws and regulations, and system resilience against cyberattacks. In today's digital world, data security is critical for stable operation of both private and corporate systems.

Keywords: *e-commerce, data security, digital market, data protection, cybersecurity, fraud.*

Modern technologies have transformed the Internet into a developed infrastructure that includes all major information centres, world libraries, databases of scientific and legal information, government and commercial organisations. Today, the Internet can be regarded as a huge market with the potential to reach almost the entire world's population. The rapid development of electronic communications and online advertising has led to revolutionary changes in commerce. The process of buying and selling through various electronic means of communication is called e-commerce.

The e-commerce market is a global platform where online trading transactions for the purchase and sale of goods and services take place. This market has been growing rapidly in recent years and is one of the most progressive and dynamic sectors of the global economy.

According to reports from research organisations, the e-commerce market has high growth forecasts. According to Research and Markets, the global e-commerce market reached a value of \$18.98 trillion in 2022. Its size is expected to increase to \$47.73 trillion by 2030, indicating an annual growth rate of 12.22% (Chevalier, 2023).

The term e-commerce emerged in the 1990s following the development of new software and technologies that transformed the Internet into a commercial environment. The new technologies allowed organizations to exchange information about products and services to influence consumers' purchasing decisions. The interconnectedness facilitated by the Internet allows consumers to engage in various activities online, creating a platform on which companies offer information about themselves and their products. However, with the development of technology, e-commerce has undergone some changes. Initially, companies used electronic technology to facilitate transactions, such as sending documents after an order, while modern e-commerce involves buying and selling goods online. E-commerce platforms are online platforms where consumers can browse and buy various products without visiting physical stores, making them cheap and convenient.

Compliance with data protection regulations is a must for e-

commerce companies operating globally. Privacy policies, including data protection and privacy measures, are increasingly becoming mandatory for companies, especially e-commerce stores. The specific rules for the collection, processing and storage of personal data of customers by businesses in the European Union are based on the General Data Protection Regulation (GDPR). It requires companies to obtain explicit consent from customers before collecting their data.

Given Ukraine's involvement in globalization, e-commerce has become one of the most promising business niches in Ukraine. According to EVO, one of Ukraine's largest product IT companies, the turnover of physical goods and services purchased online in Ukraine as of 2019 was UAH 76 billion, or 6.9% of total retail sales. However, comparing these volumes with global figures, it becomes clear that the Ukrainian e-commerce market is still in its infancy, but is extremely fast-growing. In particular, over the past six years, the average annual growth rate has been 24.7%. At the same time, the well-developed retail segment in Ukraine has maintained a growth rate of 3.9%. According to the State Statistics Service, the number of offline stores (retailers) has been steadily declining since 1990, with their number decreasing at an average annual rate of 3.8%.

The Ukrainian internet environment is showing huge annual growth, even exceeding the overall growth of the global market, but it still has many limitations that, if addressed, could open up even greater potential for expansion. The country's internet penetration rate reached 67% in 2019, while the average for Eastern Europe at the time was 71%. Meanwhile, Iceland, the country with the highest internet penetration, has almost reached full population coverage (99% in 2018). At the same time, the number of Internet users in Ukraine is growing rapidly, as evidenced by the 5.7% annual growth rate in 2019-2020, but the share of consumers who use the Internet and make online purchases is relatively small.

Ukraine is the 65th largest e-commerce market with revenue of USD 1.1 billion in 2021, ahead of Lithuania and behind Algeria. The classification of the main types of e-commerce in Ukraine is presented in Table 2.7.

The largest player in the Ukrainian e-commerce market is rozetka.com.ua. In 2021, the store's revenue was USD 246 million.

Rozetka.com.ua is followed by apple.com and makeup.com.ua as the second and third largest stores with USD 77 million and USD 46 million in revenue, respectively. Overall, the top three account for 35% of online revenue in Ukraine. Each of the segments is represented by an oligopolistic market model: each segment is controlled by several large firms, but there is a clear leader or group of leaders. Their pricing policy is usually a benchmark for smaller market participants, but not the ultimate limit, as small players are more flexible and have the potential to capture niches and gaps in large segments (Stan rynku e-commerce...).

E-commerce businesses collect and store huge amounts of personal and financial data from their customers. This data is vulnerable to hacking and cyberattacks, which can lead to fraudsters obtaining information and breaches of data protection regulations. Ensuring robust cybersecurity measures and compliance with data protection laws, such as the General Data Protection Regulation (GDPR) in the European Union, is crucial for e-commerce companies.

Potential data protection issues in the global e-commerce market include:

- ✓ The risk of data breaches: hackers can infiltrate e-commerce platforms and gain unauthorised access to customers' personal and financial information, which can lead to financial losses and undermine consumer confidence.

- ✓ Lack of adequate encryption measures to protect sensitive data in transit. If e-commerce platforms do not use strong encryption protocols, attackers can intercept and manipulate data, compromising customer privacy and security.

- ✓ Inadequate security measures: Many e-commerce platforms do not employ strong security measures to protect customer data. Weak passwords, outdated software, and a lack of regular security audits leave them vulnerable to attack.

- ✓ Lack of consumer awareness: Consumers often overlook the importance of reading privacy policies and terms of service before sharing their personal information online. This lack of awareness leaves them vulnerable to data misuse by e-commerce platforms.

Table 2.7

Types of e-commerce in Ukraine

Species	Characteristics	Representatives
E-commerce from business to consumer (B2C)	It involves the online sale of goods or services directly from businesses to individual consumers. It includes various online shopping platforms (online marketplaces, retailer websites and online classifieds).	Rozetka, Prom.ua, OLX
E-commerce for business (B2B)	It refers to online transactions that involve the exchange of goods, services or information between businesses through electronic platforms, allowing companies to optimise procurement processes, enter into contracts and collaborate with suppliers or partners online.	EVO
Consumer-to-consumer e-commerce (C2C)	It involves the sale of goods/services online between individual consumers using special platforms that connect buyers and sellers directly, without intermediaries. You can sell used items, offer services, or even rent real estate.	OLX
Online Marketplace	Online marketplaces are platforms that bring together many sellers and buyers, offering a wide range of goods and services in one place. They are intermediary platforms that provide an efficient environment for transactions.	Prom.ua, Rozetka, Zakupki.ua
Digital goods and services	It involves the online sale and distribution of digital products/services: buying and downloading software, e-books, music, films and online subscriptions.	Litres, Electronic Catalogue
Mobile commerce (M-commerce)	They are carried out via mobile devices (smartphones, tablets). Many of the EC platforms in Ukraine have developed mobile applications or optimised their web versions for mobile platforms.	

Source: compiled by the authors

✓ Cross-border data transfer: Global e-commerce involves the transfer of customer data between different jurisdictions. This poses certain challenges, as different countries may have different data protection laws and regulations. E-commerce companies must ensure compliance with these laws to protect customer data.

✓ Third-party sharing: E-commerce platforms often share customer data with third-party service providers for various purposes. However, a lack of transparency in this practice and insufficient safeguards to protect data shared with third parties can lead to unauthorised access or misuse.

✓ Unsecured payment systems: the use of unsecured payment systems can lead to potential theft or fraud of customer financial information. E-commerce platforms should implement secure payment gateways and adhere to industry standards to protect customer payment data (Socha & Lubowicka, 2023).

The anonymous nature of online transactions and the possibility of cross-border financial flows have made e-commerce an attractive route for money laundering. Criminals can use e-commerce platforms to disguise the illicit origin of funds through seemingly legitimate transactions. This problem requires robust anti-money laundering measures and cooperation between e-commerce companies, financial institutions and law enforcement agencies. Money laundering in the global e-commerce market poses several significant challenges. Historically, anti-money laundering efforts have focused primarily on the financial services sector, which is worth more than USD 400 trillion. However, the development of e-commerce has created new challenges. One of these challenges is the lack of personal contact and physical interaction with sales assistants that are typically present in traditional stores. The lack of face-to-face transactions makes it difficult to detect and prevent money-laundering activities (Straight, 2022).

The main threats that can lead to money laundering through the e-commerce market:

✓ Lack of strict customer verification processes: Many e-commerce platforms have weak customer verification procedures, allowing fraudsters to exploit the system and move illicit funds undetected.

✓ The use of cryptocurrencies for anonymous transactions:

Money launderers use the decentralised nature and anonymity of cryptocurrencies to hide their illegal activities, making it difficult to track and detect suspicious transactions.

- ✓ Weak anti-money laundering framework: The e-commerce industry lacks a comprehensive and standardised anti-money laundering framework, which hinders the effective prevention and detection of money laundering.

- ✓ Complex cross-border transactions: Global e-commerce involves cross-border transactions, which increases the complexity of monitoring and regulating financial flows. Money launderers take advantage of this complexity, making it difficult to trace the origin and destination of illicit funds.

- ✓ Use of third-party payment systems: money launderers often use third-party payment systems to transfer illicit proceeds through legitimate platforms, bypassing traditional banking channels and making suspicious activity more difficult to detect (Clean Money is a Click Away...).

Another major challenge in this market is online fraud, which is an ever-evolving threat as fraudsters develop new tactics and strategies to evade detection and circumvent security measures. This makes it a challenge for businesses and regulators to stay ahead of the latest threats and develop robust defences. The most common types of online and e-commerce fraud include:

- ✓ Phishing.

Phishing – fraudsters send emails or messages that look like they come from a legitimate company or organisation, such as a bank or online store, to trick consumers into handing over sensitive information such as passwords or credit card numbers.

- ✓ Identity theft.

Identity theft is when a fraudster steals someone's personal information, such as name, date of birth, social security number or driver's licence number, to impersonate that person and access their financial accounts or make fraudulent purchases.

- ✓ Credit card fraud.

Credit card fraud is where criminals use stolen or fake credit card information to make unauthorised purchases online.

- ✓ Account takeover fraud.

Account takeover fraud occurs when a fraudster gains access to

someone's online account, such as a bank account or email, by stealing login credentials through phishing or other methods.

✓ Chargeback fraud.

Chargeback fraud occurs when someone makes a purchase using a credit card, receives a product or service, and then disputes the charge with the credit card company, claiming that they never received the product or service or that it was defective, in order to get their money back. Unlike the friendly fraud described below, chargeback fraud involves an intentional act of fraud.

✓ Friendly fraud.

Friendly fraud occurs when a customer makes a legitimate purchase, but then disputes the charge to their credit card, claiming that the purchase was fraudulent. Sometimes this is done to avoid paying for the goods or to avoid the process of returning the goods or getting a refund.

North America and Europe are the regions most affected by online payment fraud, partly due to the widespread adoption of digital payment methods in these regions, as well as the developed technological infrastructure and high levels of online connectivity. The losses are expected to reach \$50bn and \$35bn by 2025, respectively.

In North America, the prevalence of online payment fraud is influenced by numerous factors, including the widespread use of credit and debit cards, as well as the growing popularity of mobile payments and e-commerce, as the region is home to many large financial institutions and technology companies that are attractive targets for cybercriminals.

Asia Pacific is the largest market for online payment fraud, with losses expected to reach \$54 billion by 2025 due to the rapid adoption of digital payment methods in the region and a large population that is increasingly connected to the internet.

Machine learning and artificial intelligence are increasingly being used to combat online fraud, with spending on these technologies expected to reach \$11.3 billion by 2025. These are two key tools in the fight against online fraud due to their ability to analyse large amounts of data and identify patterns and anomalies that traditional fraud detection methods may miss. Machine learning and artificial intelligence can be used to identify suspicious transactions, detect

anomalies in user behaviour, and analyse data from multiple sources to detect fraudulent activity in real time (Online and ecommerce fraud statistics...).

The e-commerce market is constantly evolving and changing, driven by new technologies, consumer behavior and global trends. Understanding these trends is essential for companies seeking to succeed in this space. According to the authors, the global trends affecting the EU market are:

- ✓ The development of e-commerce: more and more people are using mobile devices to shop online, which has led to the growth of the mobile segment of the e-commerce market, which is expected to reach 50% of all purchases in 2025.

- ✓ Personalization: Consumers want their shopping experience to be personalized, which has led to an increase in the use of artificial intelligence (AI) and machine learning (ML) to personalize product recommendations, marketing campaigns and other aspects of the experience.

- ✓ Social e-commerce: social media is becoming an increasingly important marketing and sales channel, with the social segment of the market expected to reach 30% of the global shopping market share.

- ✓ Growth of emerging markets: China, India and Southeast Asia are becoming increasingly important to the EU market, driving the growth of cross-border e-commerce and the popularity of local e-commerce platforms.

- ✓ Leapfrog in logistics and distribution: The popularity of express and same-day delivery has led to innovations in logistics and delivery, as well as the proliferation of last-mile delivery services.

- ✓ Increased focus on sustainability: Consumers are increasingly concerned about the environmental impact of their purchases, which has led to an increase in demand for eco-friendly e-commerce products and services.

- ✓ Growing popularity of alternative payment methods: Consumers are increasingly using alternative payment methods such as digital wallets and cryptocurrencies as safe and convenient methods of paying for EC.

Today, the Ukrainian Internet segment is growing in almost all areas. Our country's Internet economy is represented by the

computer and communications industries, the advertising and media industry, Internet services, and e-commerce.

Ukraine's e-commerce market has a huge potential for growth. However, there are a number of challenges and obstacles that need to be addressed in order to fully utilize this potential. The main challenges and obstacles hindering the development of the Ukrainian e-commerce market are as follows:

✓ Lack of trust and security: Building trust and ensuring security are major concerns for both consumers and businesses in the e-commerce sector. Many Ukrainian consumers are hesitant to make online purchases due to concerns about the security of personal and financial information.

✓ Inadequate logistics and delivery infrastructure: efficient and reliable logistics and delivery services are essential for the success of any e-commerce market. In Ukraine, there are problems with infrastructure, transport networks and last-mile delivery capabilities.

✓ Limited means of payment: the dominance of cash payments and limited adoption of digital payment methods in Ukraine pose challenges for online businesses. Encouraging the use of electronic payments and expanding the range of payment options could accelerate the development of the e-commerce market.

✓ Regulatory framework: the lack of comprehensive and clearly defined regulations on e-commerce creates uncertainty for businesses and consumers. A clear legal framework is needed to regulate online transactions, protect consumer rights and promote fair competition in the market.

✓ Limited digital skills and awareness: many citizens and businesses in Ukraine lack the digital skills and knowledge necessary to fully participate in online commerce. Promoting digital education and training programs can empower citizens and allow businesses to effectively tap into the potential of e-commerce.

Several strategies can be implemented to overcome these challenges and obstacles:

A) Improving digital infrastructure: the government should invest in improving internet connectivity and providing broad access to high-speed internet throughout the country. This will allow more businesses and consumers to participate in the e-commerce market.

B) Improving payment systems: steps should be taken to promote

digital payment methods, ensure transaction security and build trust between buyers and sellers. Collaboration with financial institutions and fintech companies can be helpful in this regard.

C) Promote consumer confidence and protection: implement measures to protect consumer rights, ensure the security of transactions, and promote transparent pricing and product information. This can be achieved by introducing and enforcing e-commerce rules and standards.

By seizing opportunities and addressing challenges, the Ukrainian e-commerce market has the potential to grow significantly in the coming years. Further efforts to improve infrastructure, increase trust and security, and support small businesses will be key to realizing this potential.

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Margarita Išoraitė

ORCID: <https://orcid.org/0000-0001-9108-0525>

PhD in Economics, Associate Professor
Vilnius kolegija/Higher Education
Institution
(Vilnius, Lithuania)

**SUSTAINABLE
MARKETING
FEATURES IN
LITHUANIA**

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Abstract

Sustainable marketing is important not only for the communication of the organization, but also for the formation of the brand image in the market. Transparency, timely resolution of problems, and the formation of the right message are important for every company and its users. This article analyzes the concept of sustainable marketing and sustainable plastering tools and strategy, and presents the case of sustainable marketing as an example of companies IKI and AB Lietuvos geležinkeliai.

Keywords: *sustainable marketing, sustainable marketing tools, sustainable marketing case studies.*

Introduction

Sustainability marketing is an integral part of today's business, and its sustainability communication and marketing is an important factor in shaping the company's image and success. The changing needs of consumers are transforming the approach of sustainability marketing and the entire business towards sustainability. Concepts of sustainability marketing were analyzed in scientific literature by such authors as Qalati et al. (2024), Kemper et al. (2019), Fuller et al. (2004), Kalogiannidis et al. (2024), Lučić (2020), Scozzafava et al. (2022), Dash et al. (2023). Scholars such as Kowalska (2022), Lukác et al. (2021), Fuduric (2020), Chen et al (2023), Kazibudzki et al. (2024), AL Hilal (2024), Li et al. (2024), Alkhatib et al. (2023), Lopes et al. (2024) examined measures of sustainable marketing. This article analyses the characteristics of sustainability marketing, the concept of sustainability marketing, and cases of sustainability marketing.

1. Theoretical aspects

Sustainable marketing concept

In 2015 the United Nations adopted the 2030 Agenda for Sustainable Development. It establishes 17 sustainable development goals and 169 reference tasks, the implementation of which is monitored according to 232 indicators. The goal of this agenda is by 2030 to achieve sustainable social, economic, and environmental development worldwide. The European Union has set about 100 (SDGs – Sustainable Development Goals) SDG indicators, which largely correspond to UN global indicators, but are not identical. This allows the EU to focus its SDG indicators on areas that are of particular importance in the European context. Since 2017 the European Commission has monitored the implementation of the SDGs and submits annual SDG monitoring reports. The International Organization of Supreme Audit Institutions (INTOSAI) in 2023-2028 identified five main priorities in the strategic plan. One of them is to contribute to the Sustainable Development Agenda until 2030 implementation. Supreme Audit Institutions (SAIs) can make an important contribution to this goal through auditing. Within their mandate and priorities, they can monitor the implementation and progress of all SDGs and identify areas for improvement (<https://www.eca.europa.eu/lt/sustainable-development-goals>).

Currently, business companies pay a lot of attention to sustainability. Marketing takes on a new meaning and encourages organizations to improve both their products and their presentation on the market, as well as their environmental friendliness and sustainability. Much attention has recently been paid to avoiding excessive consumption and environmental pollution. Sheth et al. state that modern marketing aims to inform, educate and guide existing and future consumers toward products, services, or sustainable behavior. In the literature, the concept of sustainable marketing is relatively new, but we can see that this marketing branch has evolved into the phenomenon of sustainable marketing over a long time (Table 2.8).

Summarizing the views of scholars on sustainable marketing, it can be stated that sustainable marketing meets the following three criteria: (1) meets customer needs; (2) achieves organizational goals;

and (3) the process is compatible with ecosystems and focuses on exploring new business informatics technologies and smart sustainable marketing and related new technologies, including economic growth, social responsibility, and environmental protection.

Table 2.8

Sustainable marketing concept comparison

Author	Highlights
Qalati et al. (2024)	Creating, communicating, and delivering value to customers in a way that considers the long-term impact of these practices on the economy, environment, and public welfare is part of a well-known sustainable marketing practice.
Kemper et al. (2019)	Sustainability marketing is a product of the evolution of marketing sustainability agenda over the past 30 years. Since the introduction of sustainability marketing, there have been many different definitions of sustainability (and sustainable) marketing, ranging from environmental to holistic concepts and from European to North American perspectives.
Fuller et al. (2004)	Sustainable marketing meets the following three criteria: (1) satisfy customer needs; (2) achieve organizational goals; and 3) the process is compatible with ecosystems.
Kalogiannidis et al. (2024)	Focused on exploring new technologies in business informatics with a focus on smart sustainable marketing and related new technologies.
Lučić (2020)	A sustainable marketing orientation is about building and managing relationships with various stakeholders, where consumers stand out as the most important group. Some companies recognize that it is worth looking at the business strategy from a broader perspective, which promotes the integration of sustainability into the organizational culture (norms and beliefs).
Scozzafava et al. (2022)	Marketing tools and awareness campaigns play a key role in helping consumers make their food choices. Analysing consumer preferences is a critical step in developing sustainable agriculture and food marketing strategies.
Dash et al. (2023)	Sustainable marketing includes economic growth, social responsibility and environmental conservation.

Sustainable marketing tools and strategy

Kowalska (2022) mentioned that sustainable marketing activities play an important role in combating the negative effects of the environment, as well as in creating positive, ecological, and social behavior, however, implementing changes in business strategies is often a big challenge for inexperienced managers. According to Kowalska (2022) this is associated with difficulties and higher costs of business management, which deters them from real changes, which include not only elements visible in the environment but also related to internal changes in the organization, that's why it's so important to specify specific, tailored activities by both industry and company size that will serve as a "road map" to implement marketing sustainability in each area of its market impact.

Lukác et al. (2021) paid attention to the determination of the impact of some marketing communication tools on the visitation of the Slovak Castle Museum and analysed the degree and dynamics of the implementation of the communication structure in the context of cultural heritage and stated that the museum marketing communication process itself is based on constant communication with visitors, where the main pillar of communication consists of advertising or communication mix, currently known as offline marketing communication tools.

Fuduric (2020) stated that the marketing strategy should be viewed from the perspective of social, ecological, and economic feasibility. According to Fuduric (2020) people variables refer to social aspects of a community or region and may include measures of education, equity and access to social resources, health well-being, quality of life, and social capital.

Chen et al (2023) stated that to develop an effective scale to measure media richness and conduct in-depth research on how variety, feedback, and personal attention influence the purchase intentions of organic consumers who like a variety of organic products, thus offering recommendations in terms of effective IMC measures.

Kazibudzki et al. (2024) highlight the need for a more coordinated and integrated approach to sustainability, emphasizing the need to balance economic objectives with environmental protection and social responsibility. These insights have important

implications for both research and practice. Practically speaking, this research provides industry stakeholders with a comprehensive understanding of the current state of sustainable practices, indicating strengths and opportunities for improvement. It emphasizes originality and a sophisticated analytical approach is useful in evaluating and increasing the sustainability of marketing practices in industry.

AL Hilal (2024) mentioned that brand sustainable development was conceptualized in an economic, environmental, social, and planetary context.

Li et al. (2024) stated that corporate social responsibility has become an indispensable part of a company's brand strategy, especially for new brands seeking to stand out in mature markets, and a brand is the most valuable aspect of a business, its value surpasses the value of products or services.

Alkhatib et al. (2023) stated that green marketing is the reduction of a product's environmental impact through product design, sustainable production, and integrated marketing campaigns. It aims to promote organic products and meet the need for sustainable consumption.

Lopes et al. (2024) stated that sustainable advertising aims to make a positive contribution to the environment and society while effectively promoting products or services.

Summarizing the opinions of scientists on sustainable marketing tools and strategies, it can be stated that sustainable marketing activities play an important role in combating negative environmental impacts, as well as in creating positive, ecological and social behaviors, therefore it is very important to indicate specific, tailored activities both by industry and by company size, which will be a "road map" to implement marketing sustainability in each area of its impact on the market, it is important to conduct in-depth research on how diversity, feedback and personal attention influence the purchase intentions of green consumers who like a variety of green products. Corporate social responsibility has become an indispensable part of a company's brand strategy, especially for new brands seeking to stand out in mature markets, and the brand is the most valuable aspect of a business, its value surpasses the value of products or services.

2. Materials and Methods

Literature analysis

Literature analysis is a theoretical research method. According to Žukauskienė et al. (2011), the author of the work, by reading, analyzing, comparing, and evaluating previous literature in a certain field, evaluates the current situation, solving a certain problem. According to Daubarienė (2018), this part gives context to the study and shows the importance of the study, therefore the purpose of the literature analysis is methodologically based on the exploratory analytical part, and the empirical part is a continuation of the literature review.

According to Daubarienė (2018), the text of a literature review must always refer to other authors and sources, properly provided references show that the author of the work has read and understood the foreign text, correctly uses the thoughts of other authors in his work, and it is also important that the mentioned source is mentioned immediately would be included in the bibliography, as it may take a long time to find the source description later.

Literature analysis can be written in three ways:

1) referentially – indicating what and how different authors write on a certain issue, paying attention to the diversity of opinions, and common and different statements. It is possible to group authors according to how they treat a particular issue. However, this method of literature review is perhaps the simplest. It should not be abused simply because a literature review, especially in empirical studies, is not very valuable in itself. Everything is determined by the relevance of the topic, and the review on the research question only defines the position of the researcher to other authors and the problem under consideration, highlighting it, but only in that case. If this is exactly what is being talked about and not diverted into non-essential descriptions;

2) chronologically – when the opinions of different authors related to the topic of the work are arranged in chronological order, i.e. starting with older sources and ending with the latest ones. This method is applicable when you want to analyse the problem from a historical perspective;

3) problematic – if the literature analysis is problematic (and it should be). When writing this type of analysis, the author can present

his point of view and foresee the prospects for further development of the problem. Undoubtedly, it is more difficult to write this way: you need to be well acquainted with the methodology of the problem, to have mastered the subject knowledge, and to have a wide erudition.

Case study

A case study thoroughly analyzes and describes one event or fact in a real context and explains the phenomenon under study. A case study usually consists of information gathering and analysis stages. Case studies can be used to formulate theories or to describe the good practice of an organization to illustrate or explain a trend. Both quantitative and qualitative data can be used for case studies. Hartley (1994) and Stake (2004) mentioned that the case study is quite widely used in organizational performance studies and all areas of social science. In recent years, there has been a tendency to strengthen the position of case analysis as a research method, case analysis is increasingly used as a reliable research strategy. One or more specific cases that illustrate the research problem are explored in depth. Here, the greatest attention is paid to a specific case, which is attempted to be described and explained in as much detail as possible, and to answer the research questions. Case studies can be focused on collecting more quantitative data and obtaining qualitative data about the case under study.

3. Results and Discussion

Sustainable marketing cases studies

IKI Sustainability case study. IKI belongs to the international group of trade and tourism companies “REWE Group”. REWE Group (formerly Revisionsverband der Westkaufgenossenschaften) in 1927 founded 17 purchasing cooperatives and is headquartered in Cologne, Germany. Highlights of 2023 indicators: operations in 21 countries, net sales 92.3 billion EUR, net profit 736.2 million. EUR, investments 3 billion EUR, number of employees 389,270. Founded in 1992, IKI has continuously expanded and grown to its second according to the largest shopping network in Lithuania in 2023. There were 246 IKI stores operating in Lithuania, which were satisfactory for a wide range of customer needs. The main

shareholder of IKI is REWE-Beteiligungs Holding International GmbH", which holds 93.75% of the shares, and Unilec S.A. owns 6.25% of the shares. In 2021 in September, IKI purchased e. trading platform "LastMile" and controlling UAB "Greituolis" this platform, the share package. After this deal IKI now owns 67% of the shares (*IKI Sustainability Report (2023)*).

Most important Iki 2023 sustainability achievements (*IKI Sustainability Report (2023)*):

1. In 2023 independent organization "Top Employers Institute" was recognized as the best employer.

2. A 99% quality check of private label products is done.

3. Almost 5 million euros is allocated to increase salaries.

4. Autonomous store chain development – 5 stores by 2023 the end.

5. Loyalty program update and mobile loyalty apps delivery, employee engagement, and communication mobile app MELP.

6. "Green transportation in awards" presentation autonomous electric cars the service was recognized as the innovation of the year.

7. 70% of buyers choose not to print paper checks at self-service counters.

8. 100% of IKI packages created waste is processed,

9. Products were donated to the "Food Bank" for 6.8 million euros.

10. Implementation of electronic price tags in all stores.

11. Electricity production from capacities of photovoltaic systems increased 14 times.

"The year 2023 was full of significant steps, from investments in more environmentally friendly energy infrastructure and improving working conditions to innovative projects such as the development of autonomous stores. Progress is also evidenced by the jump over 6 positions in the "Sustainable Brand Index" ranking of the most sustainable brands in Lithuania. Such an assessment is important, but our goal is simply to continue to show by example how modern technologies can revolutionize retail trade and accelerate progress toward sustainability goals. This kind of innovation leadership translates into tangible benefits for both our customers and employees, as well as communities and the environment", says Nijolė Kvietkauskaitė, CEO of IKI Lietuva.

AB Lietuvos geležinkeliai case study. Railways are called the transport of the future because of its friendliness. In 2022, the LTG Group approved a sustainability policy – an important document that sets the goals and objectives of the LTG Group’s sustainability activities, sustainability principles, and priorities. This policy sets out the Group’s long-term priorities in the environmental, social, and governance areas, where LTG Group has the greatest impact on the environment and seeks to create the greatest value without making a meaningful difference. Depending on the signs of the LTG group operational contribution and impact at the national level, LTG group sustainable activities aim to contribute not only to the organization of LTG group activities but also to the state’s progress in the fields of sustainability (*AB Lietuvos Geležinkeliai (2023)*).

In the LTG group in 2023 a survey of interested parties was carried out hearing, evaluation of double materiality, identified with key themes, risks and opportunities related to sustainability, identified priority areas of sustainability

1. Water consumption (reducing water consumption).
2. Adaptation to climate change (climate change resilience).
3. Pollution (reducing the negative impact of polluted areas on the environment).
4. Water release (wastewater-related released pollutants quantity reduction).
5. The risk of extinction of the species worldwide (animal protection increase).
6. Air pollution (reducing the amount of pollutants emitted into the ambient air).
7. Noise and vibration reduction.
8. Application of green criteria in purchases taking into account the circular eco principles.
9. Energy (increasing energy efficiency; renewable sources of energy of plants; development of electrification; renewable energy enlargement; renewable energy production).
10. Waste (reuse of materials; recycling of waste mass).
11. Derivatives of resources related to products and services (less than pier; use of more environmentally friendly chemicals).
12. Mitigation of climate change (climate neutral company in 2050; GHG reduction (*AB Lietuvos Geležinkeliai (2023)*)).

According to AB Lietuvos Geležinkeliai (2023) sustainability report, the LTG Group contributes to sustainable and reliable transport infrastructure development and promotes innovation and digital tech in the use of technologies in transportation and internal processes. It contributes to ensuring safe and reliable transportation in Lithuania and regional industrial growth and efficient operations. Communication and cooperation with communities, and their responses to interests are important for the operation and development of the LTG group. The aim is for communities not only to be informed about planned projects but also to participate in their discussions, from expectations and needs. In addition, we contribute to the state's sustainable transport policy and ensure sustainable intercity travel options. In our activities, we contribute to the creation of a circular economy and try to use ecological technologies in production and other operating cycles. Waste sorting, secondary use is encouraged, and responsible use of materials.

Conclusions

1. Sustainable marketing aims to move businesses and society towards a sustainable future by influencing awareness, adoption, and action across all economic and social environments. It encourages businesses and customers to transform their economies by incorporating appropriate social and environmental progress goals and fostering innovation to support sustainable activity.

2. Product innovation tools are particularly useful in encouraging companies to adopt a sustainability approach because they are typically used early in the product development process when companies can still make significant changes to the product and thus impact social and environmental outcomes.

3. Company IKI is constantly investing in new ideas and collaborating with startups that offer cutting-edge solutions for the retail sector. Innovations can be applied to any area of retail, from using artificial intelligence to optimize supply chains, to using augmented reality to improve the customer experience in stores, to integrating green technologies that focus on sustainability.

4. AB Lietuvos geležinkeliai, which strives for sustainability, not only ensures a competitive advantage and meets stakeholders' expectations, but also contributes to a sustainable future based on shared values, adapted to the needs of future generations.

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Vitalii Sharko

ORCID: <https://orcid.org/0000-0001-5830-8911>

Dr. Sc., Prof.

*Vinnitsia Institute of Trade and Economics
of State University of Trade and Economics*

Nadiya Andrusenko

ORCID: <https://orcid.org/0000-0003-3746-6202>

PhD, Assoc. Prof.

*Vinnitsia Institute of Trade and Economics
of State University of Trade and Economics*

Mykhailo Havenko

ORCID: <https://orcid.org/0000-0001-6916-4634>

PhD in Economics

*Vinnitsia Cooperative Institute
(Vinnitsia, Ukraine)*

**A SET OF
MARKETING
MEASURES FOR
IMPROVING THE
OPERATIONS OF
THE COMPANY**

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Abstract

The Digital Marketing Measurement Model (DMMM) model is proposed in the work, which is an important tool for enterprises in the field of trade, striving to achieve success in Internet marketing activities. The implementation of such a model will help trade enterprises to better understand their audience, optimize marketing strategies, increase the effectiveness of their activities in the online environment, and form more detailed sets of marketing activities on the Internet.

Keywords: *marketing activities, tools, trade company, online store, internet marketing.*

Positioning one's self next to competitors and starting to compete to increase market share is possible if: the product is better than competitors' products; the market is large and can hold several competitors; the company has more and better resources than competitors.

Therefore, in the circumstances of the war between Ukraine and Russia, an additional area of development of economic activity of trade enterprises is the creation of a set of marketing activities on the Internet and social networks. These channels have become essential for interacting with the audience and promoting brands due to the rapid development of digital technologies and the rapid spread of the Internet. The use of tools such as content marketing, search engine optimisation (SEO), social media marketing (SMM), email marketing, web analytics and others is an essential part of implementing a set of marketing activities on the Internet and social media.

Trade enterprises use these tools to communicate effectively with their audience, attract new customers and increase sales. At the same time, an important part of the work during forming a set of marketing activities is analysing the results and permanent improving strategies based on the collected data, which helps to maintain brand competitiveness and respond to changes in audience needs.

Therefore, the formation of the set of marketing activities on the Internet and social networks is an important area of the development of the company's marketing activities that helps you effectively interact with your audience, increase your visibility and achieve greater market success.

In our work, we study Digital Marketing Measurement Model (DMMM), which can play an important role in forming the set of marketing activities on the Internet and social networks for improving the efficiency of trade enterprises.

This model provides tools and criteria for evaluating the effectiveness of digital marketing activities assessing the extent of their influence on various aspects of the company's marketing.

Firstly, the digital marketing assessment model helps businesses to identify specific metrics and key performance indicators (KPIs) that they should measure to evaluate the results of their Internet activities. It can include metrics such as number of visits to the website, conversion, advertising costs, etc.

Secondly, this model helps trade professionals to collect, analyse and interpret the information related to their digital marketing activities. It provides a framework for systematically collecting data from various sources, such as advertising platforms, social media,

and web analytics, and then analysing it to gain useful information about how well marketing campaigns are performing.

Besides, DMMM helps trade enterprises to determine the relationship between their digital marketing opportunities and outcomes such as sales, profits, and customer satisfaction. This allows to evaluate the real impact of digital marketing on the financial indicators of the enterprise and make justified decisions about investments in marketing campaigns.

DMMM works by systemising and analysing various aspects of digital marketing campaigns to determine their effectiveness and business impact. The main principles of this model are shown in Table 2.9.

DMMM allows businesses to understand the effectiveness of their digital marketing efforts and make justified decisions about the next steps in the development of their marketing strategy.

DMMM model as a simple, structured five-stage process is shown in Figure 2.2.

Analysing the stages of DMMM model formation (Figure 2.2), it is worth noting the following:

1. The first stage is to determine business goals in advance and set the broadest parameters for work. This means a thorough analysis of the mission, strategy, and needs of the retailer to determine the specific goals to be achieved through online marketing. At this stage, it is important to thoroughly study the market, the competitive situation and the needs of the target audience.

2. The second stage involves specifying each business goal. This means clarifying strategic objectives at the level of specific, measurable metrics. For example, if a business goal for trade enterprise is to increase the number of subscribers, a specific goal could be to increase the number of subscribers by 10% over the next quarter.

3. The third step involves recording key performance indicators (KPIs). KPIs are determined based on the set goals and reflect the aspects of the business that need to be measured to determine the success of the retailer's promotional activities. For example, KPIs can include conversion, customer acquisition and retention rates, ROI, increase in the number of subscribers, views or mentions o brand, etc.

Table 2.9

Basic principles of DMMM operation

Principles	Characteristic
Constant monitoring and adaptation	After the analysis and the implementation of optimisation activities are completed, DMMM usually operates in a cycle where it is constantly monitored and controlled by specialised Internet marketing specialists who adjust the strategy in accordance with changes in the business environment.
Collection of data	After defining the KPIs, DMMM indicates what types of data related to digital marketing should be considered. These types of data include web analytics, social media metrics, information about advertising campaigns, etc.
Analysis of the results	After collecting data, DMMM helps to analyse it to determine how well marketing initiatives are performing. This is accomplished through Post-Click and Post-View analysis methods. Comparing results with previous periods, evaluating the impact of different marketing channels, identifying campaign strengths and weaknesses, etc. can be part of this analysis.
Conclusions and optimisation	Based on the analysis, DMMM provides opportunities to determine the effectiveness of marketing efforts and shows problem areas and opportunities for optimisation. Changing the strategy, allocating the budget between different marketing channels, changing the target audience, etc. can be part of this.
Key performance indicators (KPI)	DMMM starts with identifying specific metrics that should be measured to evaluate how well a digital marketing campaign is performing. These metrics can include conversion rates, ad spend, number of website visits and customer reviews, content publishing, number of followers, video views, brand mentions.

4. The fourth step is to set the parameters of success for each KPI in advance. This means setting specific targets for each KPI that the company must achieve. For example, if one of the KPIs is the number of video views, the success metric could be to achieve a 10% increase in the number of views over the next quarter.

5. The fifth step is to identify the people/behaviour/outcome segments that the retailer will analyse to understand why it has succeeded or failed. This involves analysing the audience, their

behaviour and reactions to marketing activities. For example, this may include studying the response of different audience segments to advertising campaigns or the result analysis of A/B testing, as well as evaluating Post-Click and Post-View attribution models.

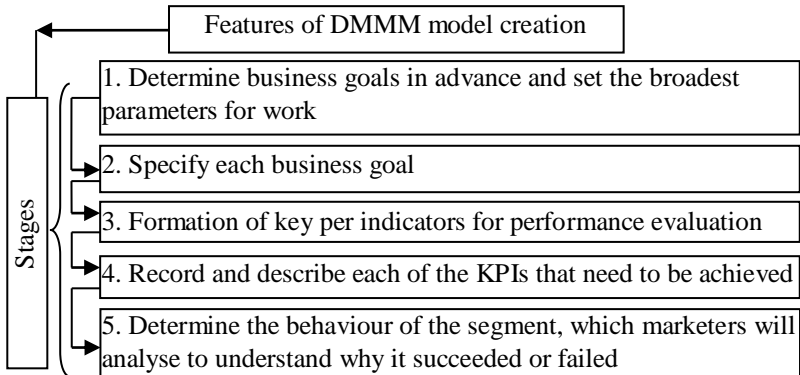


Figure 2.2 Stages of creating DMMM model

These stages in the formation of DMMM model allow trade enterprises to measure and analyse effectively the results of their online marketing strategy to achieve strategic goals and market success.

Based on these stages, it is possible to build such DMMM model (Table 2.10) that will help the management of the enterprise to evaluate and analyse effectively the results of its online marketing activities in social networks. We are going to build schematically DMMM model based on the above stages.

Table 2.10

Digital Marketing Measurement Model for social media of the trade enterprise

Business goal	Content	Followers	Viewings
Aim	x	x	x
KPI	x	x	x
Segment	x	x	x
Goal	x	x	x

All the points of DMMM model for the trade enterprise are interrelated, as each goal is aimed at achieving specific results in its

sphere of influence, and key performance indicators, audience segments and goals help to determine the way to achieve these results.

We propose to add to this model (Table 2.10) the introduction of the element “Brand Recall”, as it is a critical element of the strategy of any enterprise, including trade enterprises, in order to create and maintain its unique identity, recognition among consumers and the formation of a set of marketing activities on the Internet, as well as special attention and feedback from the audience segment that forms the “Brand Recall” indicator.

This process includes a variety of marketing activities and actions aimed at increasing attention, popularity and trust in the brand. Firstly, brand promotion helps to create a unique image and distinguish it from competitors. This will allow the company to stand out on the market and attract the attention of consumers due to its values and features.

Increasing brand awareness is a key factor in retaining existing customers and attracting new ones. The more people are familiar with the brand, the more likely they will choose your goods or services, so the “Brand Recall” indicator is incredibly important in shaping the online marketing strategy of the trade enterprise. Based on our proposals, we are going to build DMMM model for a chain of retail outlets “Yakisna Kantseliarii”, particularly for their online store, taking into account the added business goal “Brand Recall” (Table 2.11).

Brand recall will contribute to increase the level of trust in the company among consumers. When a brand is well known and has positive reputation, consumers are more likely to trust it and prefer its goods or services to similar ones from other manufacturers.

Besides, brand recall can help the enterprise to stay competitive and maintain its market share. A brand that has strong popularity and recognition usually has the ability to attract more customers and earn more money, creating a strong business position. Thus, increasing the number of brand mentions is not only a marketing strategy, but also a strategic tool that ensures the success and sustainability of a company on the market.

DMMM consists of four main components: content, followers, viewings, and mentions. This model offers a comprehensive

approach to evaluating and analysing the effectiveness of online marketing strategies. Each of these elements has a specific goal, key performance indicators (KPIs), audience, and goals to help businesses navigate their online strategic goals.

Table 2.11

**Additional indicator to the model of Digital Marketing
Measurement Model for TikTok account of the online store
“Yakisna Kantseliariia”**

Business goal	Content	Followers	Viewings	Mentions
Aim	x	x	x	Increase the number of brand mentions
KPI	x	x	x	Number of brand mentions in social media, level of interaction with the brand, audience engagement
Segment	x	x	x	Loyal, existing or potentially new audience for the brand that requires special attention and interaction
Goal	x	x	x	Attracting attention to the brand, creating virtual communities and increase interaction with the audience through social media

DMMM model will help trade enterprise to analyse and evaluate systematically the results of their marketing activities. This will allow them to identify strategies that are working or not working, as well as respond to changes in market conditions and consumer needs. With the help of this model, trade enterprises can maintain a competitive advantage, attract new customers, increase loyalty and develop steadily on the market.

According to the indicators of the given DMMM model, which were discussed above, we will form DMMM for the trademark, which is part of “Yakisna Kantseliariia”, for the development and evaluation of the effectiveness of their TikTok account (Table 2.12).

Table 2.12

Digital Marketing Measurement Model for TikTok account of online store “Yakisna kantseleariia”

Business goal	Content	Followers	Viewings	Mentions
Aim	Increase the number of video content created and published on TikTok to 3 videos per week over the next quarter	Increase the number of followers on TikTok by 10% over the next quarter	Increase the number of video views on TikTok by 10% over the next quarter	Increase the number of brand mentions on TikTok by 5% over the next quarter
KPI	The number of created and published video content according to deadlines	The number of brand followers on TikTok and the cost of attracting them	The number of viewings of the brand’s video on TikTok and the cost per view (CPV)	The number of brand mentions in social media, the level of interaction with the brand, audience engagement
Segment	Different categories of customers by demographic and behavioural characteristics	Potential customers who show interest in the brand’s products	Potential audience that interacts with the brand through digital communication channels	Loyal, existing or potentially new audience for the brand that requires special attention and interaction
Goal	Publishing content for greater and wider brand coverage	Increase the number of followers and brand loyalty, reduce the cost of attracting new followers	Increased brand awareness, improved image and customer loyalty	Attracting attention to the brand, creating virtual communities and increasing interaction with the audience through social media

Source: proposed by the author as suggestions for implementing the model for “Yakisna Kantseleariia”. The indicators and calculations are based on the author’s own experience

DMMM provides an opportunity “Yakisna kantseliarii” an effective tool to plan and evaluate the results of its online marketing activities. It is aimed at achieving four key targets: increasing the amount of content, increasing the number of followers, increasing the number of viewings and increasing the number of brand mentions. This data allows you to analyse and evaluate systematically the results of your marketing activities, identify successful and unsuccessful strategies, and also respond to changes in market conditions and consumer demand.

The analysis of the performance of each of these parts of DMMM allows us to understand better how well they are performing online and make smart decisions for further development. The use of DMMM enables trade enterprises to determine the best marketing strategies, as well as plan future actions and adapt to market changes. This will help to maintain a competitive advantage, attract new customers and increase the value virtual sales.

Thus, we believe that proposed DMMM model is an important tool for trade enterprises who want to succeed in online marketing activities. Its implementation helps trade enterprises to understand their audience better, optimise marketing strategies, increase the efficiency of their activities in the online environment and formulate complexes of marketing activities on the Internet in detail.

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Olena Stanislavyk

ORCID: <https://orcid.org/0000-0003-2481-9961>

Doctor of Economics, Professor,
Department of Management and
Marketing

State University of Intelligent
Technologies and Telecommunications

Oleksandr Kovalenko

ORCID: <https://orcid.org/0000-0001-9702-2772>

Doctor of Economics, Professor,
Department of International
Management and Innovations
Odesa Polytechnic National University
(Odessa, Ukraine)

**MARKETING AND
LOGISTICS AS KEY
ELEMENTS OF
STRATEGIC
MANAGEMENT IN
MODERN SOCIO-
ECONOMIC
SYSTEMS**

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Abstract

In the modern socio-economic landscape, the integration of marketing and logistics within strategic management has become essential for achieving organizational success. This paper explores how the interplay between these two critical functions contributes to enhanced operational efficiency and competitive advantage. Marketing focuses on understanding and meeting customer needs through market research, product development, and promotion, while logistics ensures the timely

and efficient delivery of goods and services. Together, they form a comprehensive approach to satisfying customer demands and ensuring business sustainability.

The research delves into the theoretical foundations of marketing and logistics, highlighting their respective roles in strategic management. This study outlines how integrating these functions can lead to more responsive supply chains, reduced costs, and improved customer satisfaction.

The paper investigates the impact of innovative technologies such as artificial intelligence, big data, and blockchain on both marketing and logistics. The adoption of these innovations enhances decision-making processes, optimizes resource allocation, and improves coordination between marketing and logistics functions. The study also examines how these technological advancements contribute to creating more agile and resilient business models.

A significant portion of the research is dedicated to discussing the role of sustainable practices in marketing and logistics. The paper underscores the importance of ecological strategies, such as green marketing and sustainable logistics, in aligning organizational goals with broader socio-economic and environmental objectives. The implementation of these practices not only improves operational efficiency but also contributes positively to global sustainability efforts.

This study presents a comprehensive analysis of the synergies between marketing and logistics within the framework of strategic management. By integrating these functions and leveraging technological innovations, organizations can enhance their competitive positioning, improve customer satisfaction, and contribute to sustainable development. The findings provide valuable insights for businesses aiming to thrive in today's dynamic and interconnected socio-economic systems.

Keywords: *marketing, logistics, strategic management, socio-economic system, innovative technologies, sustainable development, synergy, supply chain management, ecological logistics, digital transformation.*

In today's dynamic and highly competitive global marketplace, organizations within socio-economic systems are continually striving to achieve and maintain a competitive edge. The rapid advancement of technology, globalization, and changing consumer behaviors have made it imperative for businesses to adapt strategically. Two critical disciplines that have emerged as key drivers in this endeavor are

marketing and logistics. Individually, each plays a significant role in the success of an organization; however, their integration into strategic management processes amplifies their impact, leading to enhanced efficiency and competitiveness.

Marketing is fundamentally about understanding and meeting customer needs better than competitors. It involves market research, product development, branding, pricing strategies, and promotion – all aimed at delivering superior value to customers (Grewal & Levy, 2021).

Logistics complements these efforts by ensuring that products and services are delivered efficiently and effectively. It encompasses supply chain management, inventory control, transportation, and distribution strategies (Chopra & Meindl, 2019).

Together, marketing and logistics enable organizations to offer the right product at the right time and place, which is crucial for customer satisfaction and loyalty.

The synergy between marketing and logistics creates a seamless flow from product development to customer delivery. This integration allows for more responsive supply chains, reduced operational costs, and improved service levels. By aligning marketing strategies with logistics capabilities, organizations can differentiate themselves through reliability, speed, and flexibility, thereby forming sustainable competitive advantages in the market.

Strategic management involves setting objectives, analyzing the competitive environment, evaluating strategies, and ensuring that management rolls out the strategies across the organization. In the context of socio-economic systems, which are complex and interconnected, strategic management is essential for navigating challenges such as economic fluctuations, regulatory changes, and technological disruptions.

Incorporating marketing and logistics into strategic management ensures that these functions are not just operational silos but are integral to the organization's long-term vision and goals. Effective strategic management aligns marketing and logistics initiatives with the organization's mission, optimizes resource allocation, and enhances coordination among various departments. This holistic approach leads to increased organizational efficiency, better risk management, and the ability to capitalize on new opportunities.

By leveraging strategic management principles, organizations can enhance their responsiveness to market changes, improve operational efficiencies, and contribute positively to the broader socio-economic systems they are part of. This not only benefits the organizations themselves but also supports economic growth, employment, and the overall well-being of society.

This research is directed to explore the interrelationship between marketing and logistics in the context of strategic management and identify the main approaches to integrating marketing and logistics strategies in socio-economic systems.

Marketing is a comprehensive process that involves creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large. According to the American Marketing Association, marketing is “the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large”. In modern socio-economic systems, marketing transcends mere selling or advertising; it encompasses the entire journey of a product or service from conception to customer satisfaction.

Marketing serves several critical functions within organizational management:

1. Market research and analysis – understanding customer needs, market trends, and competitive dynamics.
2. Product development – designing products or services that meet identified customer needs.
3. Pricing strategy – setting prices that reflect the value provided while remaining competitive.
4. Promotion and communication – informing potential customers about offerings through advertising, public relations, and sales promotions.
5. Distribution strategy – ensuring products or services are available to customers at the right place and time.
6. Customer relationship management – building and maintaining long-term relationships with customers to foster loyalty and repeat business.

These functions collectively contribute to the organization’s ability to meet its objectives, satisfy customer needs, and achieve

sustainable growth.

Marketing strategies significantly influence organizational development in several ways:

1. Market positioning – effective marketing strategies help organizations establish a strong market presence and differentiate themselves from competitors.

2. Customer acquisition and retention – targeted marketing efforts attract new customers and enhance loyalty among existing ones.

3. Revenue growth – by identifying and exploiting market opportunities, marketing drives sales and contributes to revenue generation.

4. Brand equity – strategic marketing builds brand recognition and equity, increasing the organization's value and market influence.

5. Adaptability and innovation – continuous market analysis encourages innovation in products and services, enabling organizations to adapt to changing market conditions (Maslennikov et al., 2016).

In essence, marketing acts as a bridge between the organization and its external environment, facilitating growth and adaptation in modern socio-economic systems.

At the same time logistics is the process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption to meet customer requirements. The council of supply chain management professionals defines logistics management as “that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information”.

The logistics system comprises several core elements:

1. Transportation management – selecting modes of transport and managing the movement of goods.

2. Inventory management – controlling inventory levels to balance costs with service levels.

3. Warehousing and storage – storing goods efficiently to facilitate quick retrieval and dispatch.

4. Order fulfillment – processing customer orders accurately and promptly.

5. Supply chain coordination – collaborating with suppliers,

intermediaries, and customers to optimize the supply chain.

6. Information management – utilizing data and information systems to enhance visibility and decision-making.

These elements work together to ensure that products and services are delivered to the right place, at the right time, in the right condition, and at the lowest possible cost.

It should be noted that strategic logistics plays a pivotal role in effective organizational management by: reducing operational costs (efficient logistics minimize waste and reduce costs associated with transportation, storage, and inventory); enhancing customer satisfaction (reliable and timely delivery improves customer experience and loyalty); improving supply chain resilience (strategic planning in logistics enhances the organization's ability to respond to disruptions); supporting market expansion (effective logistics enable organizations to enter new markets by overcoming geographical barriers); facilitating Just-In-Time practices (streamlined logistics support lean operations, reducing inventory costs and increasing efficiency).

By integrating logistics into strategic management, organizations can optimize their operations, respond swiftly to market demands, and gain a competitive advantage.

The integration of marketing and logistics creates a synergy that enhances the effectiveness of both functions: alignment of goals (coordinating marketing campaigns with logistics capabilities ensures that promotional promises are met with actual product availability); market responsiveness (collaborative planning allows for quicker responses to market trends and customer demands); cost efficiency (joint efforts in demand forecasting reduce excess inventory and stockouts, optimizing resource utilization); enhanced value proposition (seamless integration improves the overall customer experience, from product awareness to delivery).

This synergy is essential for forming development strategies that are both customer-focused and operationally feasible.

Marketing and logistics interact at various levels to achieve strategic goals:

1. Demand forecasting and planning – marketing insights inform logistics planning, ensuring that supply meets anticipated demand.

2. Product launches – coordinated efforts ensure that new products

are promoted effectively while logistics handles distribution readiness.

3. Customer service – marketing sets customer expectations, and logistics fulfills them through reliable delivery and service support.

4. Feedback loops – logistics data on delivery performance and customer feedback inform marketing strategies and adjustments.

By fostering continuous communication and collaboration between marketing and logistics, organizations can:

1. Improve efficiency – streamline processes to reduce delays and costs.

2. Increase agility – adapt quickly to market changes and disruptions.

3. Strengthen competitive position: Offer superior service levels that differentiate the organization from competitors.

4. Drive innovation – encourage cross-functional initiatives that lead to innovative solutions in products and processes (Maslennikov et al., 2016).

So, the theoretical foundations of marketing and logistics highlight their critical roles in strategic management. Their integration enables organizations to operate more effectively within modern socio-economic systems, achieving strategic objectives and sustaining competitive advantages.

It has to be said that strategic management is a systematic process used by organizations to envision their future and develop necessary procedures and operations to achieve that future. The key stages of strategic management typically include:

1. Environmental scanning – this involves collecting and analyzing information about the internal and external environments of an organization. It includes assessing strengths, weaknesses, opportunities, and threats (SWOT analysis).

2. Strategy formulation – based on the insights from environmental scanning, organizations develop strategies to leverage their strengths and opportunities while mitigating weaknesses and threats. This stage involves setting long-term objectives and determining the best course of action to achieve them.

3. Strategy implementation – this stage focuses on putting the formulated strategies into action. It requires allocating resources, developing organizational structures, and ensuring that employees understand their roles in executing the strategy.

4. Strategy evaluation and control – the final stage involves monitoring performance, comparing actual results with planned objectives, and making adjustments as necessary. This ensures that the organization stays on track toward achieving its strategic goals.

Next, it is necessary to highlight the role of marketing and logistics in each stage of strategic planning.

Environmental Scanning.

Marketing: provides insights into market trends, customer preferences, competitor activities, and emerging opportunities. Marketing research helps organizations understand the external environment and anticipate changes in consumer behavior.

Logistics: offers analysis of supply chain capabilities, supplier reliability, transportation infrastructure, and technological advancements. Understanding logistics trends aids in assessing operational efficiencies and potential bottlenecks.

Strategy formulation.

Marketing: influences the development of market segmentation, targeting, positioning strategies, and the overall value proposition. Marketing sets objectives for market share, customer acquisition, and brand development that align with the organization's vision.

Logistics: contributes to decisions regarding supply chain design, outsourcing vs. insourcing, inventory management, and distribution networks. Effective logistics planning ensures that operational capabilities support the strategic goals.

Strategy Implementation.

Marketing: executes campaigns, promotional activities, and sales strategies. Marketing communicates the strategy to customers and builds relationships to drive engagement and loyalty.

Logistics: manages procurement, production scheduling, warehousing, transportation, and order fulfillment. Logistics ensures that products and services are delivered efficiently to meet customer expectations set by marketing.

Strategy evaluation and control.

Marketing: monitors market response, customer satisfaction, and the effectiveness of marketing initiatives. Feedback loops allow for adjustments in tactics and strategies.

Logistics: tracks performance metrics such as delivery times, inventory levels, cost efficiency, and service quality. Continuous

improvement processes help optimize logistics operations.

By integrating marketing and logistics throughout the strategic management process, organizations enhance coordination between demand generation and fulfillment capabilities, leading to improved performance and competitive advantage.

Let's note that marketing strategies are comprehensive plans formulated to achieve marketing objectives and overall organizational goals. Key types include:

1. Product strategy.

Definition: involves decisions about the design, features, quality, branding, and lifecycle of a product or service.

Application: organizations may focus on innovation, product differentiation, or expanding product lines to meet diverse customer needs.

2. Pricing strategy.

Definition: determines how a product or service will be priced to maximize profits while remaining attractive to customers.

Application: strategies may include cost-plus pricing, penetration pricing, premium pricing, or dynamic pricing based on market conditions.

3. Promotion strategy.

Definition: encompasses all communication methods used to inform, persuade, and remind customers about products or services.

Application: utilizes advertising, public relations, sales promotions, social media, and personal selling to build brand awareness and stimulate demand.

4. Place (distribution) strategy.

Definition: focuses on how products or services are made available to customers.

Application: decisions involve selecting distribution channels, logistics partners, and retail locations to optimize accessibility and convenience.

Let's outline the influence of marketing on decision-making in strategic management.

Market insights. Marketing provides critical data on customer needs, market trends, and competitive dynamics, informing strategic decisions about where to compete and how to win.

Goal alignment. Marketing objectives help shape organizational

goals, ensuring that strategies are customer-focused and market-driven.

Resource prioritization. By identifying high-potential markets and customer segments, marketing influences where the organization allocates resources for maximum impact.

Brand development. Marketing shapes the organization's brand identity and value proposition, which are central to strategic positioning and long-term success.

Risk mitigation. Understanding market risks and consumer behaviors allows organizations to make informed strategic choices, reducing uncertainty and enhancing adaptability.

In essence, marketing acts as the voice of the customer within strategic management, ensuring that organizational strategies align with market realities and opportunities.

It should be noted that optimizing logistics processes is crucial for improving operational efficiency and achieving strategic objectives. Key strategies include:

1. Supply chain Integration.

Definition: coordinating and synchronizing activities across the supply chain to improve flow and reduce redundancies.

Benefits: leads to cost reductions, faster delivery times, and improved responsiveness to market changes.

2. Technology adoption.

Definition: implementing advanced technologies such as automation, robotics, Internet of Things (IoT), and artificial intelligence (AI) in logistics operations.

Benefits: enhances accuracy, speed, and data analytics capabilities, enabling better decision-making and forecasting.

3. Lean Logistics.

Definition: applying lean principles to eliminate waste and optimize processes.

Benefits: reduces costs, minimizes inventory levels, and improves overall efficiency.

4. Sustainable logistics.

Definition: incorporating environmentally friendly practices, such as reducing emissions, optimizing routes, and using alternative energy sources.

Benefits: improves corporate social responsibility, meets

regulatory requirements, and can lead to cost savings.

Now, let's define the influence of logistics on supply chain management and strategic decision-making.

Cost leadership.

Efficient logistics operations reduce operational costs, allowing organizations to offer competitive pricing or improve profit margins. Strategic decisions often focus on optimizing logistics to achieve cost advantages.

Customer service excellence.

Logistics directly impacts delivery reliability and speed, which are critical components of customer satisfaction. High service levels can differentiate an organization in the marketplace.

Market Expansion.

Robust logistics capabilities enable organizations to enter new markets, both domestically and internationally. Strategic planning includes assessing logistics infrastructure and capabilities in target regions.

Risk management.

Effective logistics strategies address potential disruptions, such as supplier failures, transportation delays, or natural disasters. Organizations develop contingency plans and diversify logistics networks to mitigate risks.

Innovation and competitive advantage.

Investing in logistics innovation, such as advanced tracking systems or automated warehouses, can provide a competitive edge. Strategic decisions may prioritize logistics enhancements to improve agility and responsiveness (Kovtunen et al., 2017).

Logistics strategies not only affect individual organizations but also have broader implications for socio-economic systems:

1. Economic development.

Efficient logistics networks facilitate trade and commerce, contributing to economic growth. They enable the smooth movement of goods, reduce transaction costs, and enhance productivity.

2. Job creation.

The logistics sector creates employment opportunities in transportation, warehousing, distribution, and supply chain management. Strategic investments in logistics can stimulate job growth.

3. Globalization.

Advanced logistics enable globalization by connecting producers and consumers across the world. They support international trade and cultural exchange, impacting global socio-economic dynamics.

4. Infrastructure improvement.

Demand for efficient logistics drives the development of infrastructure, such as roads, ports, and communication networks. This infrastructure benefits society by improving accessibility and connectivity.

5. Environmental sustainability.

Emphasizing sustainable logistics practices reduces the environmental footprint of transportation and distribution. This contributes to broader societal goals of sustainability and environmental stewardship.

In summary, logistics strategies are integral to strategic management, influencing operational effectiveness, competitive positioning, and the ability to meet customer demands. Their impact extends beyond organizational boundaries, shaping economic and social landscapes within which businesses operate.

It has to be said that in the era of digital transformation, the integration of advanced technologies in marketing has become indispensable for organizations aiming to maintain a competitive edge (Shvahireva et al., 2021).

Key digital tools reshaping marketing strategies include big data analytics, Customer Relationship Management (CRM) systems, and internet marketing platforms (Voloshchuk et al., 2019).

Big Data. Big data refers to the vast volumes of structured and unstructured data generated by businesses and consumers. By leveraging big data analytics, organizations can gain deep insights into customer behaviors, preferences, and market trends. This enables more accurate forecasting, personalized marketing campaigns, and data-driven decision-making. For instance, retailers use big data to analyze purchasing patterns and optimize inventory management, while service providers analyze customer feedback to improve service quality.

Customer Relationship Management (CRM) Systems. CRM systems are tools that help manage a company's interactions with current and potential customers. They centralize customer

information, track interactions, and facilitate communication across multiple channels. CRM systems enhance strategic management by providing a holistic view of customer relationships, enabling personalized marketing, improving customer service, and increasing customer retention. For example, CRM analytics can identify high-value customers and tailor loyalty programs accordingly.

Internet Marketing. Also known as digital marketing, internet marketing utilizes online platforms to promote products and services. This includes social media marketing, search engine optimization (SEO), email marketing, content marketing, and pay-per-click advertising. Internet marketing allows for targeted outreach, real-time engagement, and measurable results.

Organizations can reach a global audience with personalized messages, enhancing brand visibility and customer engagement (Shvahireva et al., 2020).

It should be emphasized that the digitalization of marketing processes has significantly impacted management effectiveness by:

1. Enhancing efficiency – automation of repetitive tasks, such as email campaigns and social media posting, frees up time for strategic planning and creative activities.

2. Improving data accuracy – digital tools reduce human error in data collection and analysis, leading to more reliable insights and better-informed decisions.

3. Enabling real-time decision making – access to real-time data allows managers to respond swiftly to market changes, adjust strategies, and capitalize on emerging opportunities.

4. Facilitating collaboration – cloud-based platforms enable seamless collaboration among marketing teams, regardless of geographical location, improving coordination and consistency in messaging.

5. Personalizing customer experience – digital tools allow for personalized interactions with customers, enhancing satisfaction and loyalty. For example, AI-driven recommendation engines suggest products based on individual browsing history.

The digitalization of marketing processes aligns with strategic management objectives by promoting agility, customer-centricity, and innovation. It allows organizations to anticipate market trends, tailor strategies to specific segments, and measure performance with

precision.

Now, let's talk about automation of logistics processes.

Automation in logistics plays a crucial role in improving efficiency, accuracy, and scalability across various operations. This process involves the use of advanced technologies that allow tasks to be performed with minimal human intervention, significantly reducing errors and costs. One of the key innovations in this area is the implementation of automated warehouses, which utilize robotics for tasks such as sorting, packing, and palletizing. By relying on robotics, companies can drastically increase both the speed and accuracy of these operations. Moreover, Automated Guided Vehicles (AGVs) and Automated Storage and Retrieval Systems (AS/RS) further enhance warehouse efficiency by optimizing space utilization and reducing the need for manual labor. These technologies not only save time but also reduce the risk of injuries and lower operational costs.

Additionally, Robotic Process Automation (RPA) has emerged as a game-changer in logistics by automating routine administrative tasks such as data entry, order processing, and invoice generation. By automating these repetitive tasks, companies can significantly reduce the potential for human error and free up employees to focus on more strategic activities, thus improving overall productivity. On top of that, autonomous vehicles and drones are becoming increasingly popular for transportation and delivery. These innovations hold the promise of enabling 24/7 operations, which can further reduce labor costs, enhance safety, and streamline the delivery process, especially in hard-to-reach areas. Overall, the adoption of automation technologies in logistics contributes to improving operational efficiency, reducing costs, and increasing scalability.

The Use of Artificial Intelligence and Blockchain Technologies in Logistics. Artificial Intelligence (AI) is revolutionizing the logistics industry, offering unparalleled capabilities for improving forecasting, decision-making, and route optimization. Through the use of machine learning and predictive analytics, AI can analyze vast amounts of historical data to predict future trends, such as consumer demand and inventory needs. This helps companies avoid stockouts or overstocking by optimizing inventory levels in real-time. Furthermore, AI-powered systems are capable of calculating the

most efficient delivery routes, taking into account factors like traffic patterns, weather conditions, and fuel consumption. By optimizing these routes, businesses can minimize delivery times and reduce transportation costs, which ultimately leads to better customer satisfaction and higher profitability.

In addition to AI, blockchain technology is also transforming logistics by providing a decentralized, secure, and transparent method for recording transactions and tracking assets throughout the supply chain. One of the most significant advantages of blockchain is its ability to enhance transparency and traceability. By offering end-to-end visibility of product movement, blockchain technology ensures that every step in the supply chain is accurately recorded and can be traced back to its origin. This is especially important in industries like pharmaceuticals and food, where the traceability of products is crucial for ensuring quality and safety. Additionally, smart contracts – self-executing contracts with terms written directly into code – allow for automated payments and compliance verification, reducing the need for intermediaries and improving the speed of transactions. Moreover, the security provided by blockchain's immutable ledger significantly reduces the risk of fraud and errors, fostering greater trust among supply chain partners. Ultimately, the integration of AI and blockchain technologies leads to smarter, more efficient, and secure logistics operations that support broader strategic objectives such as cost reduction, risk management, and compliance with industry regulations.

Let's note that innovative technologies have had a profound impact on enhancing the synergy between marketing and logistics, leading to more integrated and efficient operations. One of the key factors contributing to this synergy is data integration. Shared platforms and databases allow marketing and logistics teams to access real-time information, ensuring that demand generation efforts are aligned with supply capabilities. This real-time access enables more accurate forecasting and better decision-making, ensuring that supply chains can respond quickly to changing market demands. Additionally, the rise of customer-centric supply chains has further strengthened this relationship. Innovations such as same-day delivery, personalized packaging, and other customized logistics solutions enable companies to enhance their value proposition, which

is communicated effectively through marketing efforts. This alignment between marketing and logistics helps create a seamless customer experience, driving customer satisfaction and loyalty.

Furthermore, technologies like Collaborative Planning, Forecasting, and Replenishment (CPFR) have improved joint planning between marketing and logistics teams. By collaborating on forecasts and replenishment schedules, companies can ensure that inventory levels are optimized to meet consumer demand without incurring excessive costs. This collaborative approach also improves overall efficiency, reducing stockouts and overstock situations. Additionally, the integration of Enterprise Resource Planning (ERP) systems ensures that marketing campaigns are effectively supported by logistics operations, as these systems provide a centralized platform for managing various business functions. This enhanced communication between departments leads to improved coordination, responsiveness, and ultimately, better customer satisfaction, which are critical components in achieving strategic business goals.

Sustainable development is a holistic concept that focuses on meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. Sustainable development addresses pressing global challenges such as climate change, resource depletion, and social inequality by promoting responsible consumption, innovation, and collaboration among different stakeholders. In socio-economic systems, the adoption of sustainable practices ensures that economic activities are conducted in a manner that considers the long-term welfare of both people and the planet.

By integrating sustainable development principles into their business strategies, organizations contribute to the well-being of society while also preserving the environment for future generations. This approach is especially important in industries such as manufacturing and logistics, where resource consumption and environmental impact are significant. Businesses that prioritize sustainability are better equipped to respond to regulatory requirements, consumer preferences for eco-friendly products, and the need to mitigate environmental risks. In the long term, sustainable development not only supports environmental stewardship but also

fosters economic resilience and social equity, ensuring that all stakeholders benefit from responsible business practices.

In conclusion, we note that integration of marketing and logistics within strategic management is imperative for organizations aiming to succeed in today's complex socio-economic environments. By recognizing and leveraging the interdependencies between these functions, organizations can enhance operational efficiency, improve customer satisfaction, and achieve sustainable competitive advantages. Embracing innovation, focusing on sustainability, and fostering collaborative practices will further strengthen this integration.

Future developments in technology and shifts in consumer expectations will continue to shape the landscape of marketing and logistics. Organizations that proactively adapt to these changes and invest in the integration of these key strategic elements will be better positioned to navigate challenges and capitalize on new opportunities, ensuring long-term success and contribution to the broader socio-economic system.

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Chapter 3

SUSTAINABLE MODELS OF HUMAN RESOURCES MANAGEMENT, SOCIAL SECURITY AND LABOUR MARKET DEVELOPMENT

Larysa Bogush

ORCID: <https://orcid.org/0000-0001-6196-3781>

PhD in Economics, Senior Research Scientist

Institute for Demography and Problems of Life Quality of the National Academy of Sciences of Ukraine
(Kyiv, Ukraine)

**HR-MANAGEMENT:
MODERN
APPROACHES
THROUGH THE
SYSTEMIC
SOLUTION OF
BUSINESS AND
SOCIAL ISSUES**

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Abstract

Approaches to improving human resources management through the implementation of systemic HR engineering are considered. In unstable socio-economic conditions, the set of its technologies allows for a balanced and consistent increase in both the efficiency of economic activities and the solution of a range of social problems in the development of the workforce and the enterprise (company) as a whole. The systemic nature of HR management based on HR engineering is ensured by combining its traditional business functions (economic, organizational and administrative, socio-psychological) with strategic, innovative and wide social functions (in particular, regarding monitoring the level of capitalization and improvement of employees' talents, skills and abilities, team building, optimizing cooperation and mechanisms of interaction between hired personnel and the enterprise's heads, stimulating career growth, implementing social initiatives of the economic entity regarding its personnel and the external environment), which are carried out through modern information and analytical, accounting and financial, recruiting and educational technologies.

Keywords: *HR management, HR engineering, organizational and process model of an enterprise (company), job and competency assessments, resilience, socio-economic conditions of business.*

Introduction

The sum of technological modes, which makes up the content of neo- and post-industrial economies, is characterized by increased requirements for the professional and qualification, innovative, knowledge- and rent-generating potential of human resources. This manifests itself through the increase in the requirements of business entities for the relevant qualities, abilities and skills of personnel, the invigoration of competition not only among job seekers on the labour market, but also among employers for personnel with the desired qualifications. Optimization of staffing, employees' professional and qualification characteristics, labour and organizational processes, ensuring productive employment have become integral factors of the resilience of an economic entity (viability and sustainability in terms of profitability, competitiveness, innovativeness, efficiency of mechanisms for regulating social aspects of labour relations, balanced civic responsibility) in the environment of numerous socio-economic challenges of the globalized world. On the other hand, the growing role of the workforce as a production factor of neo- and post-industrial economies strengthens the position of employees in struggling for decent working and extra-working conditions, remuneration for labour, establishing production and organizational business environment, as well as for constructive interaction with employers on related issues.

While accompanying the development of technological modes and production factors, the global increase in standards of living and consumption strengthens the requirements of job seekers on the labour market not only for its remuneration, but also for professional and creative self-realization, individualization of employment strategies. At the same time, while integrating institutions of various forms of ownership for improving the professional and qualification competitiveness of the population, recruiting and managing the personnel, the labour market should function as a complex mechanism for coordinating labour supply with demand for it, increasing the level of productive employment, ensuring effective workforce movement, systematizing services for employment and

support of an individual in variable socio-labour relations. The impact of these processes on the resilience of economic entities, their brunch and inter-brunch associations and clusters has intensified the transformation of personnel management activities according to the methodology of HR engineering.

Materials and Methods

Important aspects and components of HR engineering and corresponding HR management are revealed in the papers where:

- their methodology is substantiated as a systemic activity in the organization of human resources management based on the technologies of recruiting, business engineering, management and marketing, information and PR-support, social psychology, etc. (Hlushko T.V., Kaminsky V.V., 2022; Drymalovska Kh.V., 2022; Kondratev V., Lunev Yu., 2007; Kushneryk O.V., 2020; Pochtovyuk A.B., Semenikhina V.V., 2020);

- HR-engineering and HR-management toolkit for company's management is developed and systematized (Kondratev V., Lunev Yu., 2007; Kushneryk O.V., 2020; Fitz-enz J., Davison B., 2002; Kyfyak V.I., Zapukhlyak V.M., 2021; Kladova O.O., Zachosova N.V., 2024; Korolenko O.B., Kutova N.H., 2023; Orel Yu.L., Smahliuk A.A., 2023);

- HR engineering technologies for assessing and improving the professional and qualification properties and abilities of applicants, as well as already hired personnel are elaborated (Hlushko T.V., Kaminsky V.V., 2022; Pochtovyuk A.B., Semenikhina V.V., 2020; Fitz-enz J., Davison B., 2002; Kyfyak V.I., Zapukhlyak V.M., 2021; Orel Yu.L., Smahliuk A.A., 2023; Baksalova O., Koshonko O., Hlushko T., Horbatiuk O., 2023);

- the potential of HR engineering in overcoming a range of socio-economic challenges and force majeure events at the micro-level (of a certain enterprise, company), as well as at the national, macro-regional, and global scales is studied (Hlushko T.V., Kaminsky V.V., 2022; Drymalovska Kh.V., 2022; Pochtovyuk A.B., Semenikhina V.V., 2020; Fitz-enz J., Davison B., 2002; Kladova O.O., Zachosova N.V., 2024; Korolenko O.B., Kutova N.H., 2023; Baksalova O., Koshonko O., Hlushko T., Horbatiuk O., 2023; Salnikova Iu.A., Zinner V.Ia., 2021).

The analysis of these papers proves the further need for: studying the connections between HR-engineering, HR-management and the resilience of economic entities (in particular, in terms of their profitability, competitiveness, innovativeness, the efficiency of mechanisms for regulating social aspects of labour relations, the implementation of functions of balanced civic responsibility); substantiating the tools and ways of HR engineering and HR management influence on the relevant characteristics of business circles and local economic subsystems.

Results and Discussion

Today, the most significant global socio-economic challenges to the resilience of business entities are formed through: contradictions in the processes of rapid global unification of consumer, production and technological standards, monopolization of a number of areas of resource extraction, production and transit, transnational corporatization of brunch and cluster business entities (including in the financial sector); underestimation of the role and value of human resources as a production factor, affirmation of innovations in a range of life spheres, acceleration of innovative development according to the priorities of sustainable resource use and economic activities; epidemiological and geo-climatic processes of planetary evolution, which are only partly determined by the civilization development, the sum of its socio-economic practices.

At the macro-regional and national levels, these factors are joined by numerous problems of socio-political destabilization, including: segmentation of national and external markets of goods and services through instruments of political lobbying and non-economic competition; imbalance in socio-labour relations due to the deepening discrepancy between guarantees of the rights to decent work and social protection of the able-bodied and disabled population and the realities of their implementation in conditions of opportunism of employers and state institutions; political confrontation and armed conflicts of various scales.

It is widely accepted that by 2025, only 50% of work will be performed by humans, and the rest will be done by robots and innovative technologies, so about 40% of workers' skills on the entire planet will become obsolete and unnecessary; according to the

latest forecasts from the World Economic Forum, in the next 5 years, approximately 90 million jobs are expected to be lost and 100 million new ones will be created (including in E-Commerce, Big Data, Cloud Technology companies), moreover, 94% of employers are confident that the staff can be retrained without leaving production [Hlushko T.V., Kaminsky V.V., 2022]. Contemporary social challenges and crises (in particular, those caused by COVID-19) have changed the views of enterprises' heads and employers on HR processes and related circumstances: according to a number of recent WEF reports, 43% of representatives from the surveyed enterprises indicated their readiness to reduce jobs due to technological integration, 41% planned to expand the use of contractors to perform specialized work, 34% were preparing to increase the number of personnel as a result of technological integration; a significant share of companies expected to change their location, business processes structure, and workforce contingent in the next five years due to non-technologic factors (Kyfyak V.I., Zapukhlyak V.M., 2021).

The main directions of modern HR management include: talent management (their search, development, application), the so-called internal marketing as a function that fundamentally affects the paradigm of HR managers and HR departments activities, and therefore the organizational structure of HR management; a human-centric approach in the organization of business processes in order to stimulate the initiative and responsibility of a personnel for the results and synergistic effects of an enterprise (company) functioning; the urgent need for continuous improvement of staff qualifications and competence; strengthening the role of a clear management strategy, which involves the substantiation of multi-variant perspectives of entrepreneurship and labour activity itself (in particular, through a combination of economic, administrative, socio-psychological methods of influencing and interacting with personnel); shifting the epicentre of management efforts from automatic processes to productive ones (that is, from automating the spectrum of management processes in the areas of payroll, personnel accounting, creating systems for its selection, training, evaluation, etc. to increasing labour productivity, improving organizational and process models of enterprises and labour conditions, structuring and

uniting work teams in the course of implementing business development strategies); the spread of holacracy management structures (i.e. systems of management organization where power and decision-making are not carried out hierarchically, but are distributed functionally between self-organizing teams); digitalization of the spectrum of the specified processes (Kushneryk O.V., 2020; Pochtovyuk A.B., Semenikhina V.V., 2020; Kladova O.O., Zachosova N.V., 2024; Orel Yu.L., Smahliuk A.A., 2023).

The systemic integration of the highlighted areas of HR management in response to the needs of correcting turbulent external and national socio-economic conditions at the meso- and micro-levels of economic organization and functioning caused the modernization of the methodology and practice of managing the employment and labour market, as well as HR management of an enterprise (company), which has been called HR engineering. HR engineering and HR management, which is carried out on its basis, is a relatively new methodology for Ukraine, but a relevant and widespread one in the European macro-region and developed countries of the world, both effective for recruiting at the request of economic entities and corporate business networks, and for optimizing the set of their production processes and increasing profitability due to the balancing the labour potential, motivations and working capacity of employees (Drymalovska Kh.V., 2022; Kondratev V., Lunev Yu., 2007; Kushneryk O.V., 2020; Kyfyak V.I., Zapukhlyak V.M., 2021; Kladova O.O., Zachosova N.V., 2024; Korolenko O.B., Kutova N.H., 2023). On the other hand, while meeting the needs of economic entities in personnel, optimizing their labour processes and labour productivity, HR engineering and corresponding HR management ensure the most complete implementation of the professional and qualification characteristics and worldview orientations of each employee, harmonize the mechanisms and practices of his career growth in work teams, as well as the working and non-production interests of work teams themselves (in particular, through mechanisms of decent material, moral and ethical motivation of personnel for cohesive, well-coordinated, productive work) (Hlushko T.V., Kaminsky V.V., 2022; Pochtovyuk A.B., Semenikhina V.V., 2020; Fitz-enz J., Davison B., 2002; Baksalova O., Koshonko O., Hlushko T., Horbatiuk O., 2023;

Salnikova Iu.A., Zinner V.Ia., 2021).

Therefore, the practice of personnel management based on HR engineering (HR management, i.e. activities aimed at attracting personnel whose knowledge, qualifications, skills and abilities ensure the fulfilment of the production duties assigned to him, as well as at organizing his optimal use, stimulation and reimbursement of labour costs) involves the implementation of both traditional and a number of innovative functions in the field of human resources and human capital management. Among the traditional functions of HR management are economic (calculation of wages, material incentives, penalties), organizational and administrative (establishment, implementation, regulatory and documentary support of the staffing list, office work and correspondence in a range of core and auxiliary areas of the enterprise's functioning, control over the implementation of work and vacation schedules, maintenance of discipline), socio-psychological (moral encouragement, documentation and justification of information regarding socially vulnerable employees and their needs to the administration). The mentioned traditional HR management functions are enhanced by multifaceted activities of tracking the level of capitalization and improvement of personal talents, skills and abilities, team building, optimizing cooperation and mechanisms of interaction between hired personnel and company heads, stimulating career growth, implementing social initiatives of an economic business entity regarding its own personnel and the external environment (target audience, territorial community, etc.), based on modern information and analytical, accounting, recruiting, educational technologies. As a result, the systematic nature of HR management is ensured by combining its current business functions with strategic, innovative and social ones (Drymalovska Kh.V., 2022).

The basic technology of HR engineering, which primarily implements the economic, organizational and administrative functions of HR management, is quantitative assessments of employees' abilities to labour in order to establish an individual workload for each of them, which a certain employee, under certain organizational and technical production conditions, is able to perform systematically within a set time in exchange for wages; the aforementioned quantitative assessments objectify the formation of

the value of labour as a phenomenal market commodity (Baksalova O., Koshonko O., Hlushko T., Horbatiuk O., 2023). At the same time, the systematization of quantitative assessments of workers and applicants abilities allows to form the portraits (models) of the competencies of the company's personnel (Kyfyak V.I., Zapukhlyak V.M., 2021).

As a result, the resilience potential of an economic entity in turbulent and adverse socio-economic conditions is enhanced through the effective combination of material and moral incentives for work, optimization of career growth mechanisms, formal and informal organizational and production interactions, stimulation of professional development and increase in labour productivity on the basis of formal and informal education and self-education (with and without separation from production), cohesion and improvement of the moral climate in the work team, expansion of opportunities for capitalizing corporate reputation acquired through balanced social responsibility to the company's personnel and the community.

Thus, HR engineering is a methodology for optimizing activities of personnel management, ensuring productive employment, increasing the business profitability according to the criteria of its resilience, which have a social and individual value widely recognized by employees, institutions of civil society, and state structures.

HR engineering has developed in response to the needs of the neo- and post-industrial economy's technological modes to activate and increase the level of capitalization of the knowledge- and rent-generating properties of human resources, thereby ensuring the modernization of personnel management concepts through the transition from the effective use of economic entities' relevant assets to the formation of a complex interaction system for employers and employees, united by common tasks, activity and organizational space (Drymalovska Kh.V., 2022; Kondratev V., Lunev Yu., 2007; Kushneryk O.V., 2020; Korolenko O.B., Kutova N.H., 2023).

The spectrum of the main goals, tasks and technologies of modern HR engineering corresponds to the understanding of an employee as the most important production resource, and not an object of management, but the main subject of any enterprise (company), which is capable to self-development; as a consequence, in the

conditions of modern technological modes of neo- and post-industrial economies, financial results of business are increasingly depend on his executive, creative and innovative dynamics. This requires adequate approaches to HR management, balanced in the context of its socio-economic efficiency (increase of the profitability, as well as the level of capitalization of employees' executive and innovative qualities, on the one hand, creation of conditions for the complete reproduction and development of their labour and creative potential, on the other). The main goals of HR engineering combine:

- implementation of a well-founded strategy for selecting, developing, evaluating and maintaining staff, integrated into the business strategy of productive functioning, which involves activities for creating and fulfilling personnel management policies and procedures;

- effective team building within the framework of mechanisms for using the potential of professional, leadership, communication abilities and skills of employees, their improvement and development;

- fulfilment of business economics tasks related to personnel and career in the field of resource management, marketing, profitability increase and company's logistics through the means for effective recruitment and capitalization of employees' professional and qualification, comprehensive, worldview potential.

Considering the turbulent socio-economic conditions, the permanent significant area of HR engineering responsibility is the adjustment of business strategy, organization of business economics, and practices of personnel recruitment and management in force majeure conditions (Drymalovska Kh.V., 2022; Kushneryk O.V., 2020; Kladova O.O., Zachosova N.V., 2024; Korolenko O.B., Kutova N.H., 2023; Salnikova Iu.A., Zinner V.Ia., 2021) (for example, restrictions of national and local measures to overcome sanitary and epidemic threats, consequences of natural and man-made disasters, military actions, etc.).

Along with the methods of business engineering, management and marketing of organizations, technologies for labour standardization and arrangement, assessment and correction of personal and team competence levels, social psychology, PR, the methodological basis of HR engineering and its results in the form of

HR management and productive employment covers tools and means for automating relevant processes and databases, optimizing their structure and analysis, business modelling software and efficiency management in economic specializations (Hlushko T.V., Kaminsky V.V., 2022; Kondratev V., Lunev Yu., 2007; Pochtovyuk A.B., Semenikhina V.V., 2020; Fitz-enz J., Davison B., 2002; Kyfyak V.I., Zapukhlyak V.M., 2021; Orel Yu.L., Smahliuk A.A., 2023; Baksalova O., Koshonko O., Hlushko T., Horbatiuk O., 2023).

The main tasks of HR engineering in the context of setting up, maintaining and optimizing effective HR management consistently cover:

- the development of an organizational and process (functional) model of the enterprise, which structures its organization, practices of business and personnel work activities. In this case: the hierarchical list of business processes and functions by structural units and positions is developed and agreed; matrices of powers' distribution in the hierarchical organizational structure are described; job responsibilities and models of personnel skills and competencies are approved; the system of labour remuneration and motivation to increase its productivity is formed; key strategic indicators of the economic efficiency for structural units and employees by positions are identified;

- calculation of costs and corporate labour standards, as well as staffing needs, formation of HR transformations' budget. In this case: quantitative and qualitative indicators of performing business processes and functions by structural units and positions are determined; time and costs (labour, financial) for performing business processes and functions in the context of the enterprise's business guidelines are monitoring and assessing; models and ways for optimizing the work schedule, as well as ensuring flexible employment and personnel replacement on the basis of functional responsibilities' integration and organizational structure's improvement are substantiated;

- monitoring, control, analysis of processes and the level of implementation of the specified job and competency instructions, as well as key strategic indicators of economic efficiency of structural units and employees by position. In this case: the variable components of job and competency instructions, as well as the

possibilities of their integration within the framework of the specialized business economy's optimizing are determined; templates of reports by positions and organizational units are developed; the system for recording personnel, drawing up and implementing staffing tables and work schedules is created and periodically checked; the effectiveness of measures to reduce labour costs is assessed; the automation of a range of production processes and functions is carried out;

- the design of approaches to enhancing the organizational structure, increasing labour productivity and personnel assignments. In this case: the search for job and functional imbalances and areas of irresponsibility is periodically conducted; approaches and ways to reduce the organizational fragmentation of the specialized business economy through optimizing hierarchical management levels, eliminating duplication and centralizing similar business processes and functions, equalizing the workload of personnel in similar positions are substantiated; mechanisms for using the results of monitoring key strategic indicators of economic efficiency of structural units and employees by positions in order to improve the system of labour remuneration and motivation are implemented.

The basic technologies in human resources management based on HR engineering are:

- development and monitoring of a system of an enterprise's (company's) strategic goals and key indicators, creation of labour motivation and remuneration system based on them;

- construction of a functional system for assessing the professional and qualification characteristics of applicants and already hired employees, as well as the level of fulfilment of a range of job and competency instructions (including measuring the effectiveness of personnel planning and recruiting, in particular, on the outsourcing basis);

- functional and cost analysis of organizational structuring process, as well as a set of business processes (including calculation of labour costs and corresponding corporate standards, number and labour productivity of personnel);

- analysis of the remuneration system efficiency (including through profitability – comparison of profitability and costs, measurement of the effectiveness of the corporate strategy of

material incentives, bonuses, compensations and benefits);

- comparative study of business results (in particular, labour productivity by divisions, positions, employees' categories), shifts in the organizational and process structure, results of using of assets of intellectual potential, leadership and career growth stimulation;

- creation and study of the effectiveness of the corporate strategy for relations with employees (including assessment of: a volume and causes of staff turnover, labour discipline violations; the quality of socio-labour relations from the perspective of their participants; programs for orientation and adaptation in the workplace, related counselling and mentoring; mechanisms and a level of implementation of employees' business ideas; the moral climate in the work team);

- assessment of the effectiveness of the system of formal and informal education and self-education with and without separation from production (including in aspects of: the effectiveness of education and knowledge management in the work team, in particular, through the costs for relevant electronic tools and programs; costs and results from encouraging distance and self-education; dynamics and efficiency of intellectual assets' using);

- implementation of procedures for productive communication between owners, administration, and personnel of an enterprise on the list of the mentioned issues.

Innovative HR engineering on a competency-based approach to the processes of recruitment, professional and career growth of personnel without separation from production involves a creative combination of methods (taking into account the specifics of production), such as (Hlushko T.V., Kaminsky V.V., 2022; Kyfyak V.I., Zapukhlyak V.M., 2021; Orel Yu.L., Smahliuk A.A., 2023): training (teaching effective models of work behaviour with verification of their application); coaching and mentoring (assistance of a qualified and experienced trainer in revealing an employee's abilities and skills through solving certain tasks), including by means of NL programming; secondment (internal business trip, i.e. rotation of an employee for a certain period within the enterprise's organizational structure with subsequent return to the main duties); e-learning (distance learning using electronic network resources, technologies of artificial intelligence and augmented reality, or VR

technologies, performing tasks and exercises on a computer equipment offline); basket method (identifying the basic skills and abilities required by a potential employee for a certain position by simulating “management activity” situations); case studies (analysing real situations of the labour practice, identifying and discussing options for their solution); self-study (independent decision-making, stimulated by the use of various educational materials); arrangement of interviews, training, and workplace adaptation programs using the potential of social networks, mobile applications, corporate chat-bots, feedback surveys, etc.

The set of HR engineering methods ensures consistent balancing of an enterprise’s human resources by professional competencies in the ratio of hard, soft and digital skills (i.e. general, professional, digital competencies) (Kyfyak V.I., Zapukhlyak V.M., 2021).

Conclusions

HR-engineering has developed in response to the requests of the global business environment and civil society regarding increasing the role of human resources as a production factor, a stimulus and a consumer of the scientific and technical progress results, as well as individualizing strategies for professional self-realization, formation, reproduction and improvement of aggregate labour and qualification potential. HR engineering and HR management, carried out within the framework of its technologies, are recognized as a methodology for systemic human resource management, capable to balance the needs and goals of an average employee, a work team, enterprise’s owners and a corporate environment of a specialized economic sector in general through implementing a consistent business strategy for effective capitalization of workforce professional and qualification characteristics along with improving both the relevant personnel potential, organizational and production conditions and incentives for productive employment.

The transition from the technocratic to the humanistic approach in the field of HR management (i.e. from the recruitment and management of personnel as one of an enterprise’s resources to management aimed not only at the effective capitalization of professional and qualification potential, but also at its development and improvement of working and extra-production conditions of

workforce reproduction), which continues with the spread of HR engineering methods and technologies, stimulates a socially oriented transformation of a corporate environment, when a set of formal and informal organizational and production, social and psychological interactions between owners, administration, personnel, as well as within a work team expands employees' participation in ensuring an enterprise's sustainable growth by developing opportunities for their professional and personal growth.

The systemic nature of HR engineering and the corresponding HR management is achieved primarily through: balancing the enterprise's organizational and process structure, the administrative, operational and strategic contours of its management, as well as formal and informal interactions within the work team and between employees, administration and owners (in particular, on issues of compliance with socio-labour and human rights, guarantees of decent working conditions); using an up-to-date package of organizational and administrative documentation and software tools for assessing the professional and qualification qualities of applicants and personnel, the level and quality of performing job and competency instructions; harmonizing approaches to the employees' selection, assessment, stimulation and development, substantiated by current and strategic guidelines for the socio-economic efficiency of competitive economic activity. Ensuring productive employment and increasing labour productivity within the framework of the mechanisms for administrative and operational management of the enterprise and its human resources should focus on effective recruitment and improvement of employees' competencies, justification and dynamics of personnel appointments, systemic material and moral incentives recognized in the work team. At the same time, the achievement of the business economy's prospective goals within the framework of strategic planning relies on objective assessments of the level of competitiveness, professional and qualification, creative and innovative potential of personnel, as well as resources, intra-corporate and external environment of its development.

Therefore, in turbulent and adverse socio-economic conditions, improving the resilience parameters of an economic entity (sustainability and viability in terms of profitability, competitiveness,

innovativeness, effectiveness of mechanisms for regulating social aspects of labour relations, balanced responsibility towards the staff and the territorial community) is ensured by combining material and moral incentives for productive employment, encouraging and optimizing individual career strategies, creative and innovative activity, increasing the efficiency of formal and informal organizational and production interactions, uniting the work team on the basis of recognized production and civic goals and values, as well as by expanding external opportunities for capitalizing the potential of corporate reputation.

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Janina Čižikienė

ORCID: <https://orcid.org/0000-0002-5590-5398>

*PhD in Management, Lecturer
Social Wellbeing Department at the
Faculty of Pedagogy*

Rita Virbaliienė

ORCID: <https://orcid.org/0000-0002-3541-1614>

*Master of Law, Lecturer
Social Wellbeing Department at the
Faculty of Pedagogy*

Jūratė Makušienė

*Master of Social Work, Lecturer
Social Wellbeing Department at the
Faculty of Pedagogy
Vilniaus Kolegija/Higher Education
Institution
(Vilnius, Lithuania)*

**CHALLENGES AND
OPPORTUNITIES OF
INCLUSION OF
PEOPLE WITH
DISABILITIES IN THE
ACTIVE LABOR
MARKET**

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Abstract

Including people with disabilities in the labor market is a complex process that requires a systematic approach to social, economic, and managerial factors. The article analyzes the main obstacles that prevent people with disabilities from integrating into the labor market, including social stigma, discrimination, lack of professional skills, and inaccessibility of infrastructure. Based on a literature review and qualitative research, the article aims to reveal the impact of these factors on the employment of people with disabilities and to provide recommendations for improving the organization's recruitment process. The study's results emphasize the importance of managerial decisions and organizational culture in creating an inclusive labor market that would promote social justice and ensure the participation of people with disabilities.

Keywords: *labor market, integration of people with disabilities, social stigma, social inclusion.*

Introduction

The inclusion of people with disabilities in the labor market is a complex and multifaceted process that encompasses social, economic, and managerial aspects. This problem requires a systemic approach, as people with disabilities face many obstacles in the labor market, such as social stigma, discrimination, lack of professional skills, and inaccessibility of infrastructure (Bonaccio et al., 2020). The labor market today faces the problem of a shortage of workers, which is throughout the world (Ebbers, 2022; Teyi et al., 2023). Employment is an important process that benefits employees, employers, and the economy. Employees get the opportunity to earn a living and can improve their professional and personal skills. Employers can implement business plans and achieve the intended growth goals of organizations, contributing to economic development (Martin, Honig, 2020; El-Ganainy et al., 2021). However, labor market exclusion and stigmatization disproportionately affect vulnerable groups in society, including persons with disabilities. Therefore, their employment and inclusion become an important social, economic, and political goal (Saher et al., 2024). Inclusion is a process that includes not only providing a job but also the full involvement of individuals in the activities of an organization (Martin, Honig, 2020; El-Ganainy et al., 2021; Chumo et al., 2023). It contains equal opportunities for all individuals, regardless of gender, age, race, or disability (Bonaccio et al., 2020). The integration of people with disabilities is of particular importance, as more than a billion people worldwide live with disabilities, and many of them face barriers to entering the labor market and maintaining their jobs (World Health Organization, 2023). Research shows that including people with disabilities in the workforce is not only a social process, but also includes psychological aspects such as self-confidence, acquisition of new skills, and emotional stability (Shore et al., 2018).

The employment process and inclusion are determined by various factors, including economic motives, social connections, and personal competencies. Research shows that people with disabilities, like the rest of the population, are motivated by economic factors such as earnings (Bezyak et al., 2020). Social aspects, such as friendships and relationships, are also important, as positive

connections can encourage community involvement, while negative ones can lead to isolation and self-isolation (Waxman, 2017; Ikutegbe et al., 2024). In addition, competencies, self-confidence, and support measures have a significant impact on the ability of people with disabilities to perform their job functions.

Despite the growing attention to the employment of people with disabilities, this area is still under-researched. Many people with disabilities face negative stigmas and discrimination (Chordiya, 2022; Chordiya, Sabharwal; 2024), and therefore it is necessary to analyze in more detail the challenges they face in engaging in the active labor market.

The article aims to investigate the process of persons with intellectual and mental disabilities integration into the labor market, highlighting the main obstacles and suggesting ways to overcome them. The aim is to reveal how management decisions and organizational culture can contribute to labor market inclusion and the promotion of social justice in society. The article uses a literature analysis and a qualitative research method, which includes the analysis of respondents' statements. The literature review allows us to theoretically substantiate the importance of the integration of persons with disabilities into the labor market, and qualitative data helps to understand the existing challenges more deeply and reveal practical solutions.

Theoretical aspects of the inclusion of disabled people into the labor market

The inclusion of people with disabilities in the labor market is a complex and multifaceted process, encompassing both structural and individual factors (Chordiya, 2022; Chordiya, Sabharwal; 2024). From a sociological perspective, this phenomenon is the implementation of the principles of social inclusion and equality, and the employment of people with disabilities is closely linked to human rights, empowerment, and their active participation in society (Bezyak et al., 2020). The concept of the social model emphasizes that disability is not a consequence of the physical or psychological limitations of the individual, but the result of obstacles created by society (Haegele, Hodge, 2016). Therefore, the problem of the inclusion of people with disabilities in the labor market requires a systematic approach to reduce the physical, social, and cultural

barriers that limit their participation (Martin, Honig, 2020; Chumo et al., 2023).

The participation of people with disabilities in the life of society is a fundamental principle of social inclusion. Yet its implementation is associated with various models of integration, each of which is based on different assumptions and strategies (Withers, 2024). The medical and social-interaction models reveal a different approach to the concept of disability, the perspectives of people with disabilities, and their integration opportunities (Haegele, Hodge, 2016; Babik, Gardner, 2021; Withers, 2024).

The medical, or clinical-correctional, model focuses on the treatment and correction of an individual's "deviation from the norm", emphasizing medical intervention and specialist assistance (Haegele, Hodge, 2016; Withers, 2024). The main philosophy of this model is to address the individual's functional impairments so that they can meet the demands of society. This perspective often involves isolating disabled people in specialized institutions where they are provided with therapeutic assistance (Retief, Letšosa, 2018). Although at first glance this approach seems useful because it ensures the availability of specific services, it also poses significant challenges. As Retief, Letšosa (2018) argue, long-term use of specialized institutions can create additional "social disability". Individuals living in such institutions lose their daily living skills and ability to communicate, and cooperate, which further limits their opportunities for integration into society. Researchers emphasize (Bezyak et al., 2020; Retief, Letšosa, 2018; Withers, 2024) that isolation not only limits the social experience of disabled people but also prevents relationships with able-bodied people that could become the basis for integration. Social exclusion, created by institutional life, hinders solving real-life problems and shaping a person's abilities to adapt to various social situations (Zaks, 2023; Withers, 2024). When people with disabilities do not have the opportunity to communicate with numerous groups in society or participate in everyday activities, they lose the opportunity to learn how to effectively solve everyday challenges (Haegele, Hodge, 2016; Zaks, 2023). The institutional approach not only fails to fulfill the function of integration but also further deepens social exclusion.

Complementing these insights, the scientific literature emphasizes

the need to change traditional medical approaches to disability. In summary, the main drawback of the medical model is its orientation towards “fixing” the individual, rather than changing social conditions (Rothman, 2014; Andrews, 2017). Thus, this approach is already being changed in society, including not only medical care but also measures of social inclusion. Such a transition allows disabled people not only to satisfy their basic needs but also to actively participate in society, contributing to their social integration and well-being (Zaks, 2023; Withers, 2024).

The social model, which emerged as an alternative to the medical understanding of disability, emphasizes that the main obstacles to the integration of disabled people arise from environmental maladjustment and societal attitudes (Hogan, 2019; Zaks, 2023). This model is based on principles that promote social equality, reduce discrimination, and ensure environmental accessibility (Andrews, 2017; Retief, Letšosa, 2018;). The participation of disabled people in the labor market is limited not only by physical barriers but also by systemic problems, such as limited access to education, job opportunities, and social services. Applying the social model in the labor market requires changes in both the legal system and practical activities (Haegele, Hodge, 2016; Hogan, 2019). Adaptation of physical infrastructures, accessible technologies, and active reduction of discrimination are necessary steps to achieve equal opportunities. However, this model also calls for changing societal attitudes to promote cultural changes that would allow disabled people to become full members of society (Babik, Gardner, 2021; Withers, 2024).

The analysis of the scientific literature on the inclusion of people with disabilities in the labor market is based on various theoretical perspectives. The structural functionalist approach emphasizes the importance of the labor market for maintaining social order and economic stability (Stinchcombe, 2013). In this context, the participation of people with disabilities in the labor market is important not only for reducing social exclusion but also for the efficiency of society’s human resources. However, this theoretical direction is criticized for paying too little attention to the diversity of needs of people with disabilities and the broader significance of their participation. (Withers, 2024) Conflict theory analyses the influence

of the system on the labor market and emphasizes that prioritizing productivity and profitability often perpetuates social exclusion (Østerud, 2022). This perspective emphasizes the need to change the structure of the labor market to reduce exploitation and discrimination.

Meanwhile, symbolic interactionism examines the impact of social roles, stereotypes, and stigmatization on the employment opportunities of people with disabilities. According to Werner et al. (2012), stigmatization arising from societal prejudices can be the greatest obstacle, regardless of the actual abilities of the disabled. This theory emphasizes the importance of education and social dialogue in reducing stereotypes and forming positive societal attitudes.

The inclusion of people with disabilities in the labor market is not only a matter of social justice but also of economic benefit (Mackelprang et al., 2021). An inclusive labor market increases the social capital of enterprises, strengthens social solidarity, and diversifies the workforce. The United Nations Convention on the Rights of Persons with Disabilities (2006) recognizes that the right to work is a fundamental human right, ensuring independence, increasing self-confidence, and guaranteeing dignity. Nevertheless, in practice, people with disabilities still face discrimination, insufficient adaptation of infrastructure, and poor information from employers about their employment opportunities (Oliver, 2018). To address these challenges, a comprehensive approach is necessary, which includes strengthening the legal framework and cultural changes in society that reduce stigmatization and promote a positive attitude (Babik, Gardner, 2021; Zaks, 2023; Withers, 2024).

In summary, the inclusion of people with disabilities in the labor market is an important aspect of implementing the principles of the social model. Its success depends on structural, economic, and cultural changes. The synergy of these changes allows for the creation of an open, supportive, and inclusive labor market that ensures equal opportunities for all.

Peculiarities of a social worker's activities when working with persons with disabilities

Social work is an important and integral part of society, focused

on aiding and solving social problems. This profession contributes to the creation of state stability and well-being, establishing itself as an important area of social activity. The essence of social work is not only to help solve specific social problems but also to strive for a comprehensive improvement in the quality of life of the service recipient. This includes optimizing his activities and strengthening integration into society (Rothman, 2018; Slayter, Johnson, 2023).

Social work is based on the principles of moral and social responsibility, which are the basis for achieving efficiency. According to Coushed and Orme (2018), the social work process is a consistent sequence of actions, including emotional, intellectual, and practical communication between the social worker and the client. This process is structured into main stages: the beginning of the activity, analysis of the client's situation, setting goals, intervention, and evaluation of the results of the activity (Coushed, Orme, 2018; Rothman, 2018). When working with persons with disabilities, social workers apply principles that help to ensure the protection of the rights of these people, promote their independence, and ensure full integration into society. These principles create the basis for a holistic approach to social work, focused on revealing human potential and strengthening community inclusion. As Oliver et al. (2012) emphasizes, social work activities with people with disabilities are based on promoting community integration, ensuring choice and independence, developing competence and skills, and respecting human rights and dignity (Coushed, Orme, 2018; Rothman, 2018).

Promoting community integration is one of the most important tasks of social work, for people with disabilities to actively participate in community life, contribute to its enrichment, and feel like full members of it. The main condition for implementing this principle is the adaptation of the environment, ensuring the accessibility of physical and social infrastructure (Oliver et al., 2012; Alston, 2020). This includes not only the removal of physical barriers but also the dissemination of information, providing the opportunity to use the opportunities given by society (Rothman, 2018). No less important is the development of social networks and communication circles – social workers help people with disabilities to create and maintain communication and strengthen emotional

support in the community (Bricout et al., 2021; Specht, Vickery, 2021; Slayter, Johnson, 2023). They also help to find and ensure the creation of new areas of activity in which people with disabilities can realize their interests and gain new work experience.

Promoting choice and independence is an essential element of social work. It is based on empowering people with disabilities to make decisions about their lives and express their needs and opinions. Social workers strive to ensure freedom of decision-making and promote self-confidence, which helps to strengthen the self-confidence of people with disabilities (Bricout et al., 2021; Raudeliūnaitė, Gudžinskienė, 2023).

Competence and skill development are also important areas of social work for people with disabilities. Specially adapted methodological tools and programs help develop practical and social skills necessary for independent living (Alston, 2020; Maidment et al., 2022). In addition, social workers promote professional integration, expanding the opportunities for people with disabilities in the labor market and increasing their professional competencies. This not only provides economic independence but also contributes to more active participation in public life. By developing personal values, people with disabilities strengthen their confidence in their importance to the community, which leads to a positive self-assessment (Coushed, Orme, 2018; Specht, Vickery, 2021).

One of the fundamental principles of social work is respect for human rights and dignity (Ife et al., 2022). Social workers ensure legal protection and ensure that high-quality standards of social services are met. An important role is played by the formation of a positive attitude towards disability. Social workers not only change public stereotypes about disability but also develop empathy and solidarity in the community, promoting cooperation and inclusion (Oliver et al., 2012; Rothman, 2018; Oliver, 2018).

These principles help when working with people with disabilities. According to Payne (2020), social work focuses not only on individual assistance but also on promoting social justice and inclusion in society. The successful integration of people with disabilities into society depends not only on the adaptation of physical infrastructure but also on positive changes in public attitudes, which can be initiated by social workers (Ife et al., 2020).

In summary, it can be stated that social work, based on these principles, not only helps to solve the daily challenges of people with disabilities but also creates long-term prerequisites for their well-being. The activities of social workers become not only a professional but also a moral responsibility, strengthening social inclusion, the protection of human rights, and a sense of solidarity in society. These principles are closely interconnected, but the essential prerequisite for the success of a social worker's activities is respect for the rights and dignity of a person with disabilities. Fostering respect and empathy leads not only to more effective assistance but also to changes in society's attitude towards disability. These changes promote greater social inclusion, solidarity, and positive transformation, helping to create an open and inclusive society for all. Based on Payne's (2020) insights, social work activities are focused on diverse human well-being and social justice. He emphasizes that social work is not limited to helping the individual – it seeks structural changes by solving problems of discrimination, social exclusion, and inequality. Furthermore, as Milner, Myers, O'Byrne (2022) states, social work with persons with disabilities is one of the most important means of social inclusion, ensuring that persons with disabilities feel like full members of society.

In summary, the work of a social worker with persons with disabilities requires not only professional knowledge but also sensitivity, empathy, and a commitment to the protection of human rights. This work is the basis for empowering persons with disabilities, strengthening their independence, and creating a fully supportive society.

Materials and Methods

To reveal the challenges of integrating people with disabilities into the labor market, a qualitative research strategy was chosen, which allows for the analysis of complex, socially sensitive, and still poorly researched phenomena (Hennik et al., 2020). This methodological approach provides an opportunity to explore the experiences and meanings of the subjects, revealing deep trends and connections that often remain unnoticed in quantitative research (Hennik et al., 2020). The goal of qualitative research is not only to identify the main challenges and opportunities but also to formulate practical recommendations that could be applied to improve the

integration processes of people with disabilities (Darlington, Scott, 2020).

The data collected during the study were analyzed by identifying categories and subcategories and examining their interrelationships. Such a systematic approach allowed us to reveal the subtle features inherent in the integration process, assess the influence of the social and organizational environment, and offer insights into how these processes could be improved. The results of the qualitative study not only deepen our understanding of the essence of the problem but also form the basis for formulating substantiated and implementable recommendations that meet the needs of social service organizations. The semi-structured interview method was chosen to conduct the empirical study, which allowed us to collect detailed and multifaceted data. Five employees of social service organizations working with persons with disabilities participated in the study. This target group was chosen because of their expert knowledge and practical experience, which allowed us to assess integration processes and the challenges accompanying them. Semi-structured interviews allowed us to deeply analyze the opinions of specialists, their assessments, and real experience, thus identifying not only traditional challenges but also unexpected, previously unidentified aspects. The application of this method ensured scientific objectivity and reliability of interpretation (Creswell, Creswell, 2017).

During the interviews, information was collected about the processes of integration of people with disabilities into the labor market, their specifics, and emerging challenges. The study participants provided insights into the practical problems that organizations face and what management tools should be used to improve these processes. This ensured a comprehensive approach to the issue, allowing for the disclosure of individual and systemic obstacles.

The object of the study is the process of integration of people with disabilities into the labor market.

The study aims to identify the main challenges of the integration of people with disabilities into the labor market and provide recommendations on how to overcome them to increase the inclusion and efficiency of organizations.

The following research tasks were set for the study: to investigate

the opinions of social workers working with people with disabilities about the possibilities of integration of people with disabilities into the labor market; to assess the challenges that people with disabilities face in their efforts to integrate into the labor market; to identify the main assumptions that determine the successful employment of people with disabilities in organizations.

Problematic questions: What factors determine the integration of people with disabilities into the labor market? What are the main challenges that hinder the implementation of successful integration? How could organizations improve management processes to achieve greater inclusion? The semi-structured interview methodology made it possible to identify deep insights into the specifics of the integration of people with disabilities into the labor market, management processes, and opportunities for their improvement. The collected data were systematically analyzed to create practical recommendations that would promote social inclusion and the effectiveness of organizations.

Results and Discussion

The research data reveals a complex and multifaceted process that hinders the successful integration of persons with intellectual and psychiatric disabilities into the labor market. Analyzing the research results, it is possible to identify several main obstacles related to social norms and practical managerial aspects. The statements of the respondents enrich the research analysis, providing a deeper understanding of the existing problems and their possible solutions.

Social stigma in the labor market remains one of the biggest obstacles limiting the opportunities of persons with disabilities. One of the respondents emphasized: *“There is often a perceived social stigma and discrimination due to disability in the labor market. Employers may have stereotypical attitudes and be afraid to employ persons with intellectual or psychiatric disabilities”* (E_5). The impact of this stigma is not limited to individual employer decisions – it also permeates the cultures of organizations and the attitudes of society in general. As Granjon et al. (2024) point out, stereotypes about people with disabilities are deeply rooted, therefore their reduction requires consistent educational initiatives and managerial decisions that promote inclusion. The reluctance of employers to take

on additional responsibility was also highlighted in the respondents' responses. A research participant stated: *"Employers are not very willing to accept and maybe they don't want that kind of responsibility"* (E_1). Such an attitude is often associated with fear of possible organizational challenges or increased financial burden. Although the state offers subsidies, respondents note that their use is not sufficiently developed. *"There is a lack of more employers who would accept people with disabilities into subsidized jobs so that the supply of such work would be greater"* (E_3). This situation shows that it is necessary to inform employers about support mechanisms and simplify their implementation more effectively.

Lack of professional competencies and education was also identified as a major challenge. The study participants agree: *"Often people with disabilities may not have the professional skills or experience needed to successfully find employment"* (E_4). Respondents emphasize that lack of education further limits their opportunities: *"It's a pity when people don't have education, they don't have work experience"* (E_3). Such results emphasize the need to create and expand training and internship programs that would allow people with disabilities to acquire the skills needed in the labor market and to apply retraining programs based on their education. This would help individuals obtain documents supporting their qualifications.

Practical barriers, such as lack of transport, make job searching even more difficult. One participant noted: *"If a person lives in a social care home, it is often difficult to reach jobs because they are far away and there is no way to get there"* (E_1). Participant (E_2): *"It is difficult when people with disabilities live in rural areas, it is particularly challenging, simply impossible, for them to reach their jobs because there is no public transport, and buses do not run regularly"*. This problem reflects systemic shortcomings that could be addressed by both the public and private sectors, by encouraging the creation of remote jobs or improving transport accessibility.

Financial support and support programs were identified by the participants in the study as one of the possible solutions. *"Providing financial assistance or directing appropriate support programs can help not only people with disabilities but also attract organizations to create conditions for employment"* (E_3). However, the

effectiveness of these programs depends on how accessible they are and how effectively employers apply them. To reduce challenges, social workers and organization leaders need to look for opportunities for cooperation with state institutions and non-governmental organizations.

The experiences of a social worker in helping people with disabilities reveal their diverse and essential role in integrating these individuals into the labor market. Social workers often become the first professionals to help a person prepare for this important stage of life. They not only help create a resume but also develop practical job search skills. One participant in the study shared his experience: *“When a person is interested in employment, we if they ask and have a desire, offer to help them write a CV. Some find it very difficult to cope, but when we start working together, they gain more self-confidence”* (E_2); *“this promotes a person’s independence and development of abilities, they begin to trust themselves”* (E_4).

Participants state that the job search process is individualized, considering each person’s needs, health status, and experience, and an individual plan is prepared for each person, in which we provide all the steps to help integrate into the labor market. As a social worker (E_2) noted: *“First of all, we analyze what kind of work they could do, given their experience, we look for something clear so that the workload is low”*; *“People are also motivated by money, so we always look at the salary, people must feel that the work is worth their efforts”* (E_5). This practice demonstrates the strategic approach of a social worker, ensuring that the job search meets both the person’s capabilities and expectations.

Escort services are another significant aspect of social workers’ activities, especially important for those who feel anxious or have difficulty adapting to a new environment. Social workers not only organize transport but also provide emotional support that helps a person adapt. The study participants note: *“often it is necessary to accompany, we look for transport, or we take them ourselves”* (E_1); *“sometimes it is necessary to show how everything works, because in a new environment they get lost, when we do everything together, they are much calmer”* (E_5); *“We take them and even show them where to go, where to sit, how to start a conversation. This reduces anxiety”* (E_4). Social workers also perform an important function

by introducing individuals to the requirements of the labor market, legal aspects, and societal norms: *“We explain that everything is changing and state policy is changing towards our people, that they must be as independent as possible”* (E_3); *“Some people think that everything will be given to them, but they need to show how important their contribution is”* (E_1). Such an employee’s attitude is necessary for the successful integration of the person and the strengthening of personal independence. The educational aspect, such as training or qualification improvement programs, provides long-term benefits for the person’s career and self-realization: *“We offer to complete some education, training. This is a greater chance of integrating into the open labor market faster”* (E_2); *“often people who were initially afraid to start attending courses, but after graduation are glad that they decided to”* (E_3). Such assistance promotes continuous improvement and a person’s self-confidence.

Social workers are not only providers of practical assistance but also inspirers of personality change, as their efforts, ranging from CV preparation to emotional support in the workplace, are a fundamental contribution to the integration of people with disabilities into the labor market. This activity not only increases a person’s independence but also reduces social exclusion, promoting social solidarity.

The study reveals the most important aspects related to the adaptation of working conditions for people with disabilities and their integration into the labor market. The study participants agree and emphasize that the attitude of employers and the collective, the flexibility of working conditions, and the personal attitude of the person to their situation are essential elements that ensure successful integration. The creation and adaptation of working conditions for people with disabilities is one of the essential ones, the solution begins with the understanding that such people have individual needs and the work environment must be adapted to them. As the study participant (E_4) noted, *“so they have to work according to certain criteria, as well as know specifically what they have to do, because these people like concreteness”*. In addition, flexibility in the work schedule is important so that individuals can combine work duties with medical procedures or other life needs: *“flexibly manage the work schedule, allowing disabled persons to combine work with life*

needs, medical treatment” (E_3). The study participants agree that the attitude of employers is one of the most important factors influencing successful integration: “Employers lack information about the opportunities, that those people are also needed, they want to be needed, and they want to be useful” (E_5). Dissemination of information would not only help change the attitude of employers but also encourage them to create working conditions in which disabled people would be accepted without prejudice.

A study participant (E_2) noted: *“The employer and colleagues would be understanding and ready to provide psychological support and encouragement to disabled people to help them overcome difficulties or challenges”*. When hiring a person with a disability, their abilities and competencies must be assessed, not their disability. This is especially important, as the study highlights the lack of the principle of non-discrimination: *“It is necessary to ensure that disabled people are assessed according to their abilities and professional skills, and not according to their disability” (E_1)*. At the same time, people with disabilities themselves must change their attitude towards themselves: *“We talk a lot that disability exists, but we need to live, think about the future, try to take care of ourselves....” (E_4)*.

In summary, working conditions that meet the needs of people with disabilities include flexible working hours, clear work tasks, an adapted physical environment, and a positive emotional climate in the team. This is especially important for those who face challenges in the labor market. Flexibility in transportation services or workplaces can be practical solutions that facilitate integration. However, the most important aspect remains the attitude of employers, their ability to see a person’s capabilities, not their limitations. Properly formed working conditions and a tolerant attitude lead not only to faster adaptation but also to higher work productivity and job satisfaction of employees with disabilities.

The responses of the study participants highlight the complex problems and prospects of the integration of persons with disabilities into the labor market. The analysis of these responses reveals that successful integration requires a combination of public education, employer motivation, application of technologies, and more active state policy. Public education remains one of the most important

measures promoting the integration of persons with disabilities. The study participant (E_2) emphasized: *“Inform more about jobs, about wages, about the creation of job opportunities, so that people know that there are jobs so that they would like to work”*. This opinion reveals that currently, society lacks knowledge and understanding of the opportunities that exist for persons with disabilities. It is necessary to change the public’s attitude towards persons with disabilities, emphasizing their successful examples in the labor market. Publicizing such examples would not only reduce stigma but also encourage more employers and collectives to include persons with disabilities in their teams. Motivation also emerges as a significant factor. According to the study participants, some people with disabilities are afraid of innovations and accept the current situation. The study participants noted that such a situation complicates their integration: *“Not all people want to go to work, because they are used to living with a disability...”*. Therefore, it is necessary to increase not only the motivation to work but also the independence of people with disabilities, therefore it is important to promote the active participation of people in public life.

Employer incentives remain a pressing issue. The research data shows that current measures are not sufficient for employers to actively create jobs for people with disabilities. Therefore, it is necessary to generate more effective financial and organizational incentives that would encourage employers to adapt workplaces for people with disabilities. In addition, it is obligatory to emphasize training for employers and employees to reduce stereotypes and ensure a favorable working environment, as the active involvement of employers in successful integration can change their attitudes and increase the appreciation of diversity in the labor market. The adaptation and development of technologies is another important direction. The research data show that new technologies can make the lives of people with disabilities easier and perform work functions: *“Improvement of technologies and future innovations can also contribute to making the lives of people with disabilities easier”* (E_5). For example, workplaces can be adapted using ergonomic solutions, automated systems, or communication tools that allow them to overcome communication and mobility barriers. Technological innovations would not only make every day work

easier but would also allow more people with disabilities to become productive participants in the labor market. Public policy remains a key aspect that can promote structural change. The study participants noted that it is necessary to develop more effective measures focused on the integration of people with disabilities: “*Government policy should be more focused on the integration of people with disabilities*” (E-1). This policy should include not only financial incentives for employers but also broader social security and support systems that ensure the long-term integration of people with disabilities into the labor market.

In summary, the prospects for the integration of people with disabilities into the labor market depend on various interrelated factors. Public education, employer motivation, application of technologies, and effective state policy are key elements that can create conditions for successful integration. The implementation of these measures would not only help people with disabilities become active participants in the labor market but would also promote an inclusive society in which stigma would be reduced and social inclusion increased.

The research data reveals a complex and multifaceted process that prevents persons with disabilities from successfully integrating into the labor market. Analyzing the research results, several significant aspects emerge that can be interpreted through the prism of management and organizational culture. Social stigma and discrimination in the labor market, as emphasized by the study participants, are one of the main barriers limiting opportunities for persons with disabilities. Employers’ fear and stereotypical attitudes form a closed circle in which there is a lack of positive examples that can change established beliefs. Respondents emphasized that this attitude is not only individual but permeates the entire organizational culture and mentality of society. Therefore, it is important that organizational managers, as leaders, promote awareness of the harm of negative stereotypes, implement inclusive practices, and develop strategies that encourage the inclusion of people with disabilities in the labor market as a necessity, rather than an act of social responsibility.

Employers’ avoidance of responsibility was also identified as one of the main problems. Despite state subsidies, employers’ motivation

to employ persons with disabilities remains low. The study participants noted that this situation is aggravated by insufficient awareness of support mechanisms and expectations that employees with disabilities would demand more organizational responsibility. This situation reveals the importance of management decisions – HR specialists and managers must become intermediaries, helping to create flexible and effective models for the application of subsidies, while ensuring employer education and transparent provision of information. Lack of competencies and education was another obstacle highlighted by the study participants. Due to limited opportunities to obtain the necessary education or work experience, persons with disabilities are often unable to compete in the labor market. This reveals the need to invest in specialized training and internship programs that would help to acquire the competencies needed in the labor market. At the organizational level, this could be implemented through mentoring programs, the creation of internships, or the promotion of socially responsible partnership initiatives.

Practical barriers, such as lack of transport, were also highlighted as significant challenges. Survey participants indicated that the geographical isolation of individuals' homes often makes it difficult to reach their workplaces. These issues highlight the need for management to adapt to modern labor market trends, such as encouraging teleworking, flexible working hours or even organizing transport services for employees living in remote areas.

The importance of financial support and subsidies was widely discussed by survey participants. State support could be an effective tool in reducing employers' concerns, but its effectiveness depends on how successfully these measures are communicated and integrated within organizations. Managers and policymakers must ensure that subsidy processes are simple, clear, and practical and that their benefits are consistently communicated to the public.

Conclusions

The integration of people with disabilities into the labor market is limited by social stigma and stereotypes, which are deeply rooted not only in the individual attitudes of employers but also in the broader culture of organizations and the public. Stigmatization makes it more

difficult for employers to employ people with disabilities, which in turn reduces their chances of being included in the labor market. To address this problem, it is necessary to consistently implement educational projects and public awareness campaigns to encourage employers and the public to understand the opportunities and potential of people with disabilities. Such initiatives can help reduce stigmatization, promote positive attitudes, and contribute to the creation of a more inclusive labor market.

Flexibility and adaptation of working conditions are a prerequisite for the successful integration of people with disabilities. The results of the study showed that flexibility of work schedules and adjustments to the physical environment make it easier for people with disabilities to combine work with medical or other personal needs. Such changes in the working environment are essential to ensure that workplaces of people with disabilities are adapted to their needs while maintaining productivity and professional potential. Insufficient professional skills and limited qualification opportunities also emerged as one of the main obstacles. Many people with disabilities do not have sufficient skills or experience needed for employment, which limits their opportunities to participate in the labor market. This situation can be improved by investing in the development of specialized training programs and internships that would be focused on developing practical skills and adapting to the needs of the labor market. Such attention to vocational education would allow people with disabilities to better prepare for the labor market and increase their competitiveness.

Inaccessibility of transport and infrastructure is a practical barrier that limits the ability of many disabled people to access jobs, especially when living in rural areas or care homes. The study participants highlighted that better public transport, employer-provided transport, or the creation of remote working places can help overcome this problem. Developing mobility options and improving infrastructure are essential steps to enable disabled people to fully participate in the labor market.

Financial incentives for employers could significantly increase the employment of people with disabilities, but current subsidy systems are often complex and insufficiently effective. The study participants emphasized the need to simplify support mechanisms

and to more actively inform employers about the possibilities of using subsidies. Improving these measures could encourage more employers to employ people with disabilities and provide them with the necessary support.

Social workers play an important role in the integration process of people with disabilities. They not only provide practical assistance, such as preparing CVs and organizing job searches but also strengthen the self-confidence of people with disabilities by providing emotional support. The work of social workers becomes a key bridge between people with disabilities and the labor market, giving them the necessary tools and confidence for integration.

Adapting technology can significantly reduce the physical and social barriers faced by people with disabilities. Automated solutions, remote working tools, and assistive technologies can help not only adapt workplaces but also increase the productivity and independence of people with disabilities. Encouraging the introduction of technology in the workplace could ensure more modern and inclusive working conditions.

A positive attitude among employers is essential to creating an inclusive labor market. Information about the opportunities for people with disabilities, the benefits of their integration, and practical solutions for job adaptation can help overcome preconceived stereotypes. Developing a positive attitude among employers would also increase the diversity and tolerance of the labor market. Improving public policy must be focused on creating long-term social inclusion. In addition to providing subsidies, public policy should include legal and social security measures that would promote the participation of people with disabilities in the labor market and reduce exclusion. Strengthening social dialogue between non-governmental organizations, public institutions, and employers is essential to creating innovative and inclusive solutions. Cooperation would ensure better dissemination of information, more effective operation of support mechanisms, and more sustainable integration solutions that would help people with disabilities to fully participate in the labor market. Together, these measures can create a society where all its members, regardless of disability, have equal opportunities and are valued for their contribution.

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Nataliia Dotsenko

ORCID: <https://orcid.org/0000-0003-3570-5900>

*DSc (Technical Sciences), Professor,
Professor of the Project Management
in Urban Management and
Construction Department
O.M. Beketov National University of
Urban Economy in Kharkiv
(Kharkiv, Ukraine)*

**ORGANIZATIONAL
MODELING OF
AGILE-
TRANSFORMATION
OF HUMAN
RESOURCE
MANAGEMENT
PROCESSES**

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Abstract

The approaches to conducting organizational modeling of Agile – transformation of human resource management processes are considered. The directions of organizational modeling are defined. The tools for transforming human resource management processes and adapting them to the BANI project implementation environment are defined. The contents of work of Agile transformation of human resource management processes are considered. It is proposed to use catalogs of organizational models of Agile – transformation of human resource management processes, which will improve the quality of management decisions by taking into account the functional capabilities of the team. The developed catalog contains options for organizational models that can be used as standard solutions in Agile transformation projects of human resource management processes. The initial data are the matrix of project team characteristics, limitation of function distribution, functional redundancy.

Keywords: *Agile transformation, project management, organizational modeling, resource provision, management processes.*

Introduction

As a result of the impact of COVID -19 business processes were changed. It led to the emergence of innovative ways of working, interacting and solving problems of managing project groups (Sara Hassan Ahmed Sallam, Mohamed Mostafa Fouad, & Fahd Hemeida, 2023).

In the conditions of war and the COVID-19 pandemic, the most of project-oriented companies switched to remote work, the return to the usual form of work revealed the inefficiency of using existing approaches and the need to reengineer resource management processes to increase the adaptability and resilience of teams (Berdar M., 2024).

The implementation of projects with the existing shortage of suitably qualified personnel, caused by military processes, is associated with the risk of losing critical competencies in projects of a multi-project environment, which negatively affects the competitiveness of enterprises and significantly reduces the reliability of the functioning of critical infrastructure facilities.

Relocation of enterprises with partial relocation of personnel led to a decrease in the level of resource provision and a change in the profile of the competence of the company's resources. Mobilization, migration, security threats lead to the loss of personnel, changes in the company's resource pool and the need to implement measures to minimize the loss of critical competencies of the company's resources.

Analysis of publications and problem statement

Analysis of approaches to organizational modeling allowed us to identify the main areas (Seixas B.V., Dionne, F., Mitton C., 2021):

- analysis and modeling of the organizational structure (Kovynyov I., Buerck A., & Mikut R., 2021);

- determination of the composition of performers (composition of the project team), resource pool in a multi-project environment (Pellerin, R., Perrier, N., & Berthaut, F., 2020);

- distribution of resources taking into account functional limitations (Xie, L.-L., Chen, Y., Wu, S., Chang, R.-D. and Han, Y. 2023);

- redistribution of resources as a result of the implementation of monitoring and change management processes (Madampe, K., Hoda, R., & Grundy, J., 2022);

- modeling of motivational processes;

- modeling of critical knowledge management processes;

- modeling of personnel development processes.

As a result of migration and mobilization processes taking place in Ukraine, the processes of human resource management are being

transformed in the direction of increasing flexibility and ensuring reliability of functioning.

Most publications do not take into account the restrictions put forward in projects of mechanical engineering production, critical infrastructure facilities (fixed resource assignment, prohibition on involving certain contractors in projects, restrictions on the application of sanctions, taking into account the level of competence, etc.). Thus, the task of transforming human resource management processes is relevant.

Materials and Methods

Trends observed in the field of project management indicate the prospects for implementing a hybrid approach to project management, which allows to combine the advantages of both agile methodologies and the classical approach.

The usage of a hybrid approach puts forward additional requirements for the formation of a project team: a combination of flexibility and adaptability with functional redundancy and resilience (PMI PMBoK, 2021).

The purpose of the work is to develop an approach to the usage of organizational modeling for the AGILE transformation of human resource management processes.

The work is based on the hypothesis that taking into account the functional capabilities of a potential project team at the team formation stage will increase the team's adaptability when it is necessary to redistribute resources.

The research is based on the integrated usage of combinatorial analysis, system analysis, project-oriented and stakeholder-oriented, configuration approaches.

Results and Discussion

The transformation of management processes is the result of the transition from VUGA to BANI environment and reflects global trends of change occurring in society. The tools for transforming human resource management processes in the BANI environment are presented in Table 3.1.

A promising direction is the creation of a formation of functionally redundant adaptive, reactive, teams (FRAT teams),

which can adapt to changing requirements and ensure reliable operation of the team due to the principle of functional redundancy.

Table 3.1

Tools for transforming human resource management processes

BANI	Transformation tools
Brittle	Methods of value management, risk management, change management, formation of functionally redundant teams.
Anxious	Increasing the resilience and adaptability of the project team, integrating risk and change management into human resource management processes.
Nonlinear	Application of Agile management mechanisms, configuration and coordination management
Incomprehensible	Critical knowledge management, application of project management methodologies

Analysis of Agile transformation processes revealed the need to ensure the use of coordination mechanisms for managing changes, requirements and functional capabilities of the team. In this case, it is proposed to use the term project configuration.

Depending on the degree of decomposition and the level of aggregation, configuration elements can be either the project as a whole or project elements:

- team;
- stage of the project life cycle;
- current level of work completion in the project;
- work performed by contractors;
- level of resource provision of the project.

The main stages of the transformation process are shown in Figure 3.1 (Dotsenko, N., Chumachenko, I., Galkin, A., Kuchuk, H., Chumachenko, D., 2023).

The tasks of selecting a project team with given constraints, redistribution of functions in the project team are complex combinatorial tasks. The number of options depends on the number of performers, the number of functions, the type of competency matrix. With an increase in the number of options, the task becomes more complicated.

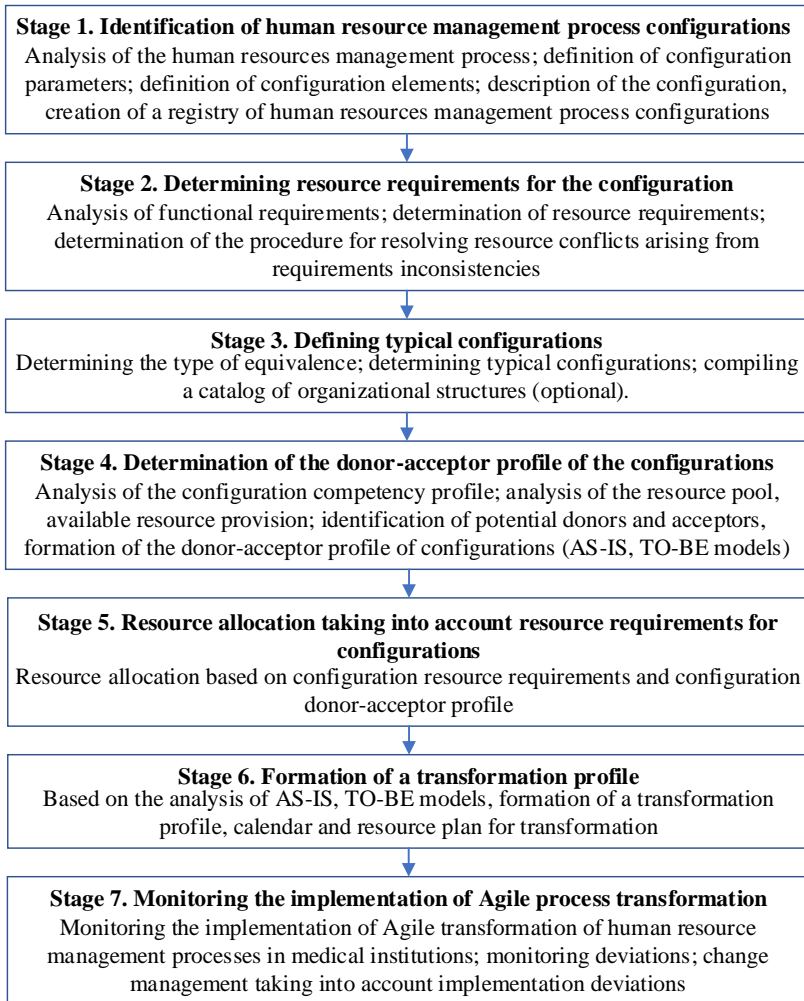


Figure 3.1 Contents of the work of Agile transformation of human resource management processes

The Agile HR concept prioritizes speed of response and adaptability within the HR function. One of the effective ways to solve this problem is to use unification and typification.

Unification is understood as a rational reduction of types of products or processes of the same functional purpose, and

typification is the development of typical solutions that reflect elements or characteristics common to a number of processes.

The usage of organizational modeling leads to the definition of a set of human resource configurations (project team options) capable of ensuring the fulfillment of assigned tasks under certain constraints.

The construction of the catalog of organizational models is based on the methods given in the work (Dotsenko, N., Chumachenko, I., Galkin, A., Kuchuk, H., Chumachenko, D., 2023). The selection of typical configurations is made based on the types of equivalence:

- ST-equivalence;
- STP-equivalence;
- F-equivalence;
- H-equivalence;
- ST-equivalence.

It is shown that as a result of identical transformations, we obtain a set of equivalent organizational structures, which in the general case have different characteristics.

This makes it possible to choose the optimal variant of building a project team. The given transformations of organizational structures allow to form a set of variants of building organizational structures and to choose from them those that satisfy the given criteria.

The use of configurable organizational transformations allows to form a set of organizational structures that meet certain characteristics:

- number of team members;
- team functionality;
- reservation coefficients;
- restrictions on combination;
- mandatory combination;
- cost characteristic of the configuration.

Applying organizational modeling during the distribution (redistribution) of project resources, a catalog of the functional capabilities of the project team is formed. The coefficient of the functional capabilities of the project team displays the number of configurations of resource provision that the project team is able to provide with a given composition of team members.

An element of the catalog of functional capabilities shows a

certain variant of resource distribution by tasks (the problem of managing a fixed composition is solved), the characteristic of this variant, the values of the coefficients of functional redundancy. The characteristic can be a priority parameter for management (cost, competence, level of adaptability and responsivity). Solving the problem of managing a fixed composition of a project team (applicants have already been selected, the problem of distributing functions is being solved), the number of team members is not an optimization parameter.

Solving the problem of redistributing functions in a project team for a standard model, which is defined by a competency matrix, a catalog of options for implementing functions in a project team is developed, which specifies the functions that an executor performs in each project. When changing the characteristics of team members, a project implementation option is selected that will have the optimal cost of implementing it.

Below is an example of solving this problem for a standard model (Table 3.2) and a catalog of project implementation options (Table 3.3).

Table 3.2

Typical model M

Q\A	a ₁	a ₂	a ₃	a ₄	a ₅	a ₆	a ₇	a ₈
q ₁	0	1	0	0	1	1	0	1
q ₂	1	0	0	1	0	1	0	0
q ₃	1	0	0	0	0	1	0	0
q ₄	1	0	0	0	0	0	0	1
q ₅	0	1	0	0	1	0	0	0
q ₆	0	0	0	1	0	0	1	1
q ₇	0	0	0	0	1	1	0	1
q ₈	1	0	1	0	0	1	0	0
q ₉	0	1	0	1	0	0	0	1
q ₁₀	1	1	0	0	0	1	0	0
q ₁₁	1	0	0	0	0	0	1	0
q ₁₂	0	0	1	0	0	1	0	0
q ₁₃	0	0	1	1	0	0	1	1
q ₁₄	0	1	1	0	1	0	0	0
q ₁₅	0	0	0	0	1	0	1	1

Designation: $Q = \{q_1, q_2, \dots, q_n\}$ is a set of executors; $A = \{a_1, a_2, \dots, a_m\}$ is a set of functions; C is the cost of implementing the project.

A catalog of project team implementation options was constructed, containing 1080 elements (a fragment of the catalog is given in Table 3).

Table 3.3

Catalog of project implementation options

q ₁	q ₂	q ₃	q ₄	q ₅	q ₆	q ₇	q ₈	q ₉	q ₁₀	q ₁₁	q ₁₂	q ₁₃	q ₁₄	q ₁₅
2	1	6	8	2	4	5	3	4	6	7	3	7	5	8
2	1	6	8	2	4	5	3	4	6	7	3	8	5	7
2	1	6	8	2	4	8	3	4	6	7	3	7	5	5
2	1	6	8	2	4	5	3	8	6	7	3	4	5	7
2	1	6	8	2	7	5	3	4	6	7	3	4	5	8
2	1	6	8	2	8	5	3	4	6	7	3	4	5	7
2	1	6	8	2	7	8	3	4	6	7	3	4	5	5
2	1	6	8	5	4	8	3	2	6	7	3	4	5	7
2	1	6	8	5	4	6	3	4	2	7	3	7	5	8
...
8	4	6	1	2	7	8	3	4	2	7	6	3	5	5
5	4	6	1	2	4	5	3	8	2	7	6	7	3	8
5	4	6	1	2	4	5	3	8	2	7	6	8	3	7
5	4	6	1	2	4	8	3	8	2	7	6	7	3	5
8	4	6	1	2	4	5	3	8	2	7	6	7	3	5
5	4	6	1	2	7	5	3	4	2	7	6	8	3	8
5	4	6	1	2	8	5	3	4	2	7	6	7	3	8
5	4	6	1	2	8	5	3	4	2	7	6	8	3	7
5	4	6	1	2	7	8	3	4	2	7	6	8	3	5
...
5	4	6	1	2	8	8	3	4	2	7	6	7	3	5
6	4	6	1	5	4	8	3	2	2	7	3	8	5	7
8	4	6	1	5	4	6	3	2	2	7	3	7	5	8
8	4	6	1	5	4	6	3	2	2	7	3	8	5	7
6	4	6	1	5	7	8	3	2	2	7	3	4	5	8
6	4	6	1	5	8	8	3	2	2	7	3	4	5	7
8	4	6	1	5	7	6	3	2	2	7	3	4	5	8

The resulting catalog made it possible to determine the distribution of resource provision configurations with a fixed

assignment of the performer (Table 3.4).

Table 3.4

Number of project team configurations

Q\A	a ₁	a ₂	a ₃	a ₄	a ₅	a ₆	a ₇	a ₈
q ₁	0	344	0	0	362	171	0	203
q ₂	109	0	0	771	0	200	0	0
q ₃	338	0	0	0	0	742	0	0
q ₄	258	0	0	0	0	0	0	822
q ₅	0	527	0	0	553	0	0	0
q ₆	0	0	0	474	0	0	404	202
q ₇	0	0	0	0	541	238	0	301
q ₈	115	0	715	0	0	250	0	0
q ₉	0	307	0	547	0	0	0	226
q ₁₀	144	638	0	0	0	298	0	0
q ₁₁	116	0	0	0	0	0	964	0
q ₁₂	0	0	819	0	0	261	0	0
q ₁₃	0	0	246	368	0	0	308	158
q ₁₄	0	344	380	0	356	0	0	0
q ₁₅	0	0	0	0	348	0	484	248

Based on the analysis of the project team configuration, we conclude that the greatest number of configurations (possibilities for redistribution) 964 will be when assigning q₁₁ to perform function a₇.

An important criterion on the basis of which a decision is made on the distribution of tasks is the configuration characteristic.

The characteristics matrix indicates the characteristics of performers (qualifications, cost, level of competence, etc.) when implementing the relevant functions. For the considered typical model M, a modified matrix of characteristics is presented in Table 3.5.

As a result of the analysis of the functional capabilities of the project team, variants of the distribution of work between project team members were formed with the given reservation coefficients {1, 2, 2, 2, 2, 2, 2, 2} (Table 3.6).

Determining the characteristics of the variant (C) of the distribution allows you to choose a variant that meets certain requirements.

Table 3.5

Modified feature matrix

Q\A	a ₁	a ₂	a ₃	a ₄	a ₅	a ₆	a ₇	a ₈
q ₁	0	3	0	0	8	5	0	9
q ₂	8	0	0	5	0	8	0	0
q ₃	6	0	0	0	0	6	0	0
q ₄	7	0	0	0	0	0	0	7
q ₅	0	4	0	0	4	0	0	0
q ₆	0	0	0	5	0	0	7	6
q ₇	0	0	0	0	6	5	0	5
q ₈	9	0	9	0	0	7	0	0
q ₉	0	5	0	6	0	0	0	4
q ₁₀	8	4	0	0	0	6	0	0
q ₁₁	4	0	0	0	0	0	6	0
q ₁₂	0	0	7	0	0	4	0	0
q ₁₃	0	0	6	5	0	0	7	6
q ₁₄	0	4	5	0	4	0	0	0
q ₁₅	0	0	0	0	6	0	6	7

Table 3.6

Variants of distribution of executors

N\Q	Distribution of performers {q ₁ , q ₂ , q ₃ , q ₄ , q ₅ , q ₆ , q ₇ , q ₈ , q ₉ , q ₁₀ , q ₁₁ , q ₁₂ , q ₁₃ , q ₁₄ , q ₁₅ }	C
1	{2, 1, 6, 8, 2, 4, 5, 3, 4, 6, 7, 3, 7, 5, 8}	91
2	{2, 1, 6, 8, 2, 4, 5, 3, 4, 6, 7, 3, 8, 5, 7}	89
3	{2, 1, 6, 8, 2, 4, 8, 3, 4, 6, 7, 3, 7, 5, 5}	89
4	{2, 1, 6, 8, 2, 4, 5, 3, 8, 6, 7, 3, 4, 5, 7}	86
8	{2, 1, 6, 8, 5, 4, 8, 3, 2, 6, 7, 3, 4, 5, 7}	86
10	{2, 1, 6, 8, 5, 4, 6, 3, 4, 2, 7, 3, 8, 5, 7}	86
11	{2, 1, 6, 8, 5, 4, 6, 3, 8, 2, 7, 3, 4, 5, 7}	83
14	{2, 1, 6, 8, 5, 4, 8, 3, 4, 2, 7, 6, 3, 5, 7}	83
18	{2, 1, 6, 8, 5, 4, 5, 3, 8, 2, 7, 6, 4, 3, 7}	82
121	{2, 4, 1, 8, 2, 4, 5, 3, 8, 6, 7, 6, 3, 5, 7}	81
142	{2, 4, 1, 8, 5, 4, 8, 3, 2, 6, 7, 6, 3, 5, 7}	81
161	{2, 4, 1, 8, 5, 4, 6, 3, 8, 2, 7, 6, 3, 5, 7}	78
191	{2, 4, 1, 8, 5, 4, 5, 6, 8, 2, 7, 6, 3, 3, 7}	78
475	{2, 4, 6, 1, 5, 4, 8, 3, 8, 2, 7, 6, 3, 5, 7}	78

Conclusion

The Agile HR concept prioritizes responsiveness and adaptability within the HR function. An effective way to solve the problem of selecting a project team with given constraints, redistributing functions in the project team using unification and typification is considered. To solve the problems of Agile transformation of human resource management processes, catalogs of typical organizational models have been developed. Their application to solve the problems of analyzing the functional capabilities of the project team and redistributing functions is considered.

Thanks to the use of catalogs, there is no need to perform complex calculations for project implementation. This reduces the time to solve the problem and improves the quality of the result.

Creating catalogs of organizational models will allow you to avoid additional modeling of resource redistribution, but to use already obtained standard solutions.

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Alenka Kavkler

ORCID: <https://orcid.org/0009-0002-3181-8131>

Ph. D., Full Professor, Faculty
of Economics and Business
University of Maribor;
EIPF – Economic Institute
(Maribor, Ljubljana, Slovenia)

**KAPLAN-MEIER
ESTIMATOR AND
SURVIVAL ANALYSIS OF
UNEMPLOYMENT SPELLS
IN SLOVENIA**

<https://doi.org/10.5281/zenodo.14539684>

Abstract

This paper analyses unemployment spells in Slovenia during the Great Recession. Descriptive statistics for several demographic variables are shown and discussed, namely for age group, gender, region, level of education, and work experience. Survival analysis is applied, and the cumulative survival function and the Kaplan-Meier survival function estimator for different levels of education are examined.

Keywords: *unemployment, survival analysis, Kaplan-Meier estimator.*

1 Introduction

This study aims to provide an overview of unemployment spells in Slovenia during the Great Recession. First, we present descriptive statistics and suitable graphs for the extensive database (obtained from the Employment Service of Slovenia) of all unemployment spells in Slovenia in the given time for several demographic variables, namely for age, gender, level of education, region, and work experience. Next, we briefly describe and then apply survival analysis, mainly cumulative hazard function and Kaplan-Meier survival function estimator. The results are discussed given different demographic variables.

The rest of this study is structured as follows. Section 2 describes the data and variables used in the study. It also provides descriptive statistics and graphical presentations of data. Section 3 summarizes the methodological approach of survival analysis and the Kaplan-Meier estimator. In Section 4, the empirical results of the survival analysis of unemployment spells in Slovenia are explained in detail. Section 5 provides a discussion of results, while section 6 gives conclusions of the study.

2 Data and descriptive statistics

We obtained the data from the “Records on Jobseekers in the Employment Service of Slovenia” from the Employment Service of Slovenia (2010). The database consists of all registered unemployment spells that ended between the 1st of January 2007 and the 31st of December 2010 and all ongoing unemployment spells as of the 31st of December 2010. For each of the unemployed persons in the database, we have data on gender, age, date of registration and eventual date of removal from the database, level of education, occupation, length of work experience, municipality and office of registration, and reason for registration. As the Employment Service is not allowed to disclose personal data on unemployed persons, an unemployment identification number has been added to the data from the register to identify recurrent unemployment occurrences.

From the initial database, after removing 132 unemployment occurrences where the start and end dates of unemployment do not match or where there is a duplicate entry, we obtained a base database with 411,206 occurrences, of which 104,026 (25.3%) are truncated or censored. In this case, the so-called right censoring is involved. Since the event we observe (the end of unemployment) has not yet occurred by the end of our study, we can only estimate a lower bound of the survival time. We have created new variables: length of unemployment, status, region, and age group. We expressed the length of unemployment in months, assuming that a month has 30 days. The status variable, which is relevant for the survival analysis, takes the value 1 for completed unemployment spells and 0 for spells that are still ongoing or are being cut. We have divided the unemployment spells into five age groups, each covering an age interval of about ten years. The variable region was defined based on data on the municipality of the unemployment spell.

The distribution of the unemployment length variable is asymmetric, with skewness of 5.22 and kurtosis of 39.88, indicating an asymmetric distribution with a very long right tail. The normal distribution (and, more generally, all symmetric distributions) has skewness equal to 0 and kurtosis equal to 3. The histogram for the unemployment length is shown in Figure 3.2 below.

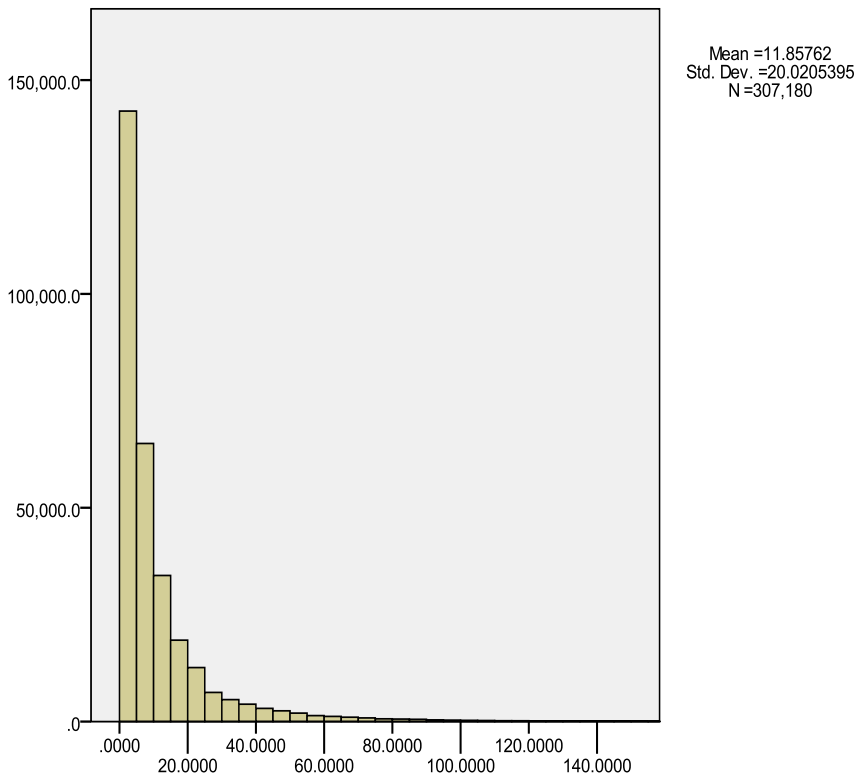


Figure 3.2 Histogram for the length of unemployment (in months)

Descriptive statistics were computed for 307,180 unemployment spells completed between 2007 and 2010. The empirical analysis was carried out using SPSS and R. Table 3.7 shows the arithmetic means, standard deviations and 95% confidence intervals for the arithmetic means for different categories of the variables: gender, region, level of education, age group, and work experience. The 95% confidence intervals already indicate statistically significant differences between the categories of all the observed variables.

Table 3.7

Descriptive statistics for the length of unemployment (in months)

	<i>N</i>	<i>Arithmetic mean</i>	<i>Standard deviation</i>	<i>95% confidence interval for the arithmetic mean</i>
All	307,180	11.86	20.02	(11.79; 11.93)
<i>Gender</i>				
Male	148,575	11.38	19.59	(11.28; 11.48)
Female	158,605	12.30	20.41	(12.20; 12.40)
<i>Region</i>				
Pomurska	28,438	12.92	24.83	(12.63; 13.21)
Podravska	63,579	12.12	20.53	(11.96; 12.28)
Koroška	12,456	11.18	18.11	(10.87; 11.50)
Savinjska	45,958	13.26	21.60	(13.07; 13.46)
Zasavska	8,427	12.57	18.74	(12.17; 12.97)
Spodnje-posavska	11,059	12.26	22.54	(11.84; 12.68)
Jugovzhodna Slovenija	18,052	12.92	24.17	(12.57; 13.28)
Osrednje-slovenska	56,522	12.19	18.73	(12.04; 12.34)
Gorenjska	27,070	8.88	13.21	(8.72; 9.04)
Notranjsko-Kraška	6,564	9.46	13.13	(9.14; 9.78)
Goriška	12,901	10.75	17.94	(10.44; 11.06)
Obalno-kraška	14,868	9.76	15.71	(9.50; 10.01)
no data	1,286	4.16	5.02	(3.89; 4.44)
<i>Education</i>				
Level I	83,501	15.39	27.09	(15.21; 15.58)
Level II	15,013	12.24	21.26	(11.90; 12.58)
Level III	2,241	15.72	25.69	(14.66; 16.79)
Level IV	72,837	11.29	18.36	(11.15; 11.42)
Level V	92,209	10.44	14.82	(10.35; 10.54)
Level VI	8,938	12.02	18.06	(11.64; 12.39)
Level VII	30,651	7.60	11.09	(7.48; 7.73)
Master's degree	818	8.41	15.42	(7.35; 9.47)
PhD	323	6.57	8.15	(5.68; 7.46)
Bologna 1st degree	271	4.74	4.03	(4.26; 5.22)

Bologna Level 2	81	4.79	4.19	(3.87; 5.72)
no data	297	5.62	6.36	(4.89; 6.35)
<i>Age group</i>				
up to 25 years	82,972	7.18	8.97	(7.11; 7.24)
26 to 35 years	103,481	8.85	14.19	(8.76; 8.93)
36 to 45 years	53,081	12.18	21.94	(11.99; 12.37)
46 to 55 years	49,957	20.53	28.83	(20.27; 20.78)
over 55 years	17,689	25.98	32.34	(25.50; 26.46)
<i>Work experience</i>				
up to 1 year	97,627	10.64	18.95	(10.52; 10.76)
1 to 5 years	62,721	7.94	14.59	(7.83; 8.06)
5 to 10 years	35,299	9.88	19.08	(9.68; 10.08)
10 to 20 years	43,776	13.01	24.12	(12.79; 13.24)
20 to 30 years	37,227	16.44	25.69	(16.18; 16.70)
over 30 years	30,530	18.85	16.43	(18.67; 19.03)

The average duration of unemployment was 11.86 months, while the maximum duration recorded was 415.13 months. The unemployment spells for women are, on average, 0.92 months or about 28 days (8%) longer than for men. Among the regions, Savinjska stands out with the longest average duration of unemployment of 13.26 months, and Gorenjska region with the shortest average duration of unemployment of 8.88 months. Persons with the first level of education are unemployed for an average of 15.39 months, 134% more than those with a PhD. For a better overview, we also provide a bar chart for the variables region and level of education (Figures 3.3 and 3.4).

In the Savinjska, Pomurska, Jugovzhodna Slovenija, Zasavska, Spodnjeposavska, Osrednjeslovenska and Podravska (regions), the average duration of unemployment was more than 1 year. At the

other end of the spectrum are Gorenjska, Notranjsko-Kraška, and Obalno-Kraška, where the average length of unemployment is less than 10 months.

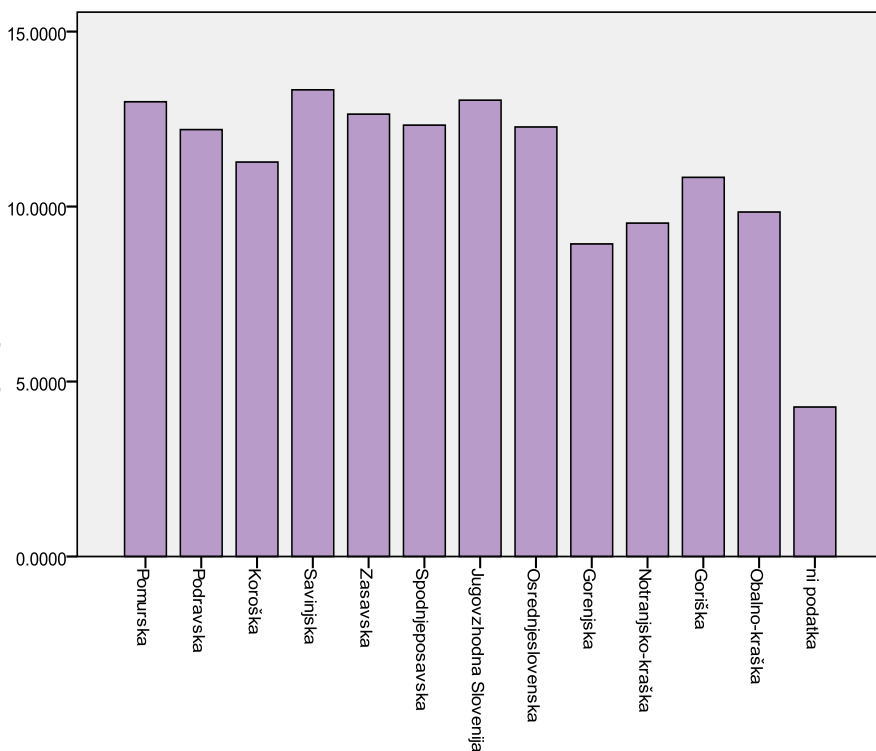


Figure 3.3 Bar chart for the average length of unemployment (in months) by region

Notes: region on the x-axis, the average length of unemployment (in months) on the y-axis.

Higher levels of education are supposed to lead to better labor market outcomes, but unfortunately, according to the data analyzed, this is not always the case. Unemployed people with level III education have the longest average duration of unemployment, at 15.72 months, almost 3.5 months longer than those with level II education. Also, level VI education is, on average, less favorable for

the unemployed than level V or even level IV. Another exception is a master's degree, which, on average, leads to longer unemployment than a university degree. Both Bologna degrees show a low average duration of unemployment. Still, given the small number of data and the short time since the first Bologna degrees were awarded, it is premature to speak of the success of the reform of the higher education system.

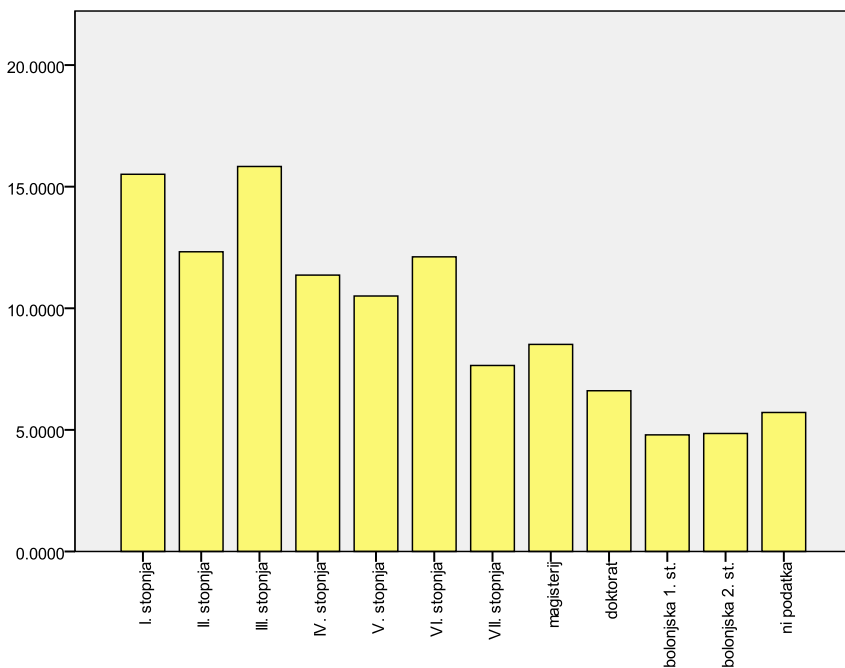


Figure 3.4 Bar chart for the average length of unemployment (in months) by level of education

Notes: level of education is on the x-axis, and the average length of unemployment (in months) is on the y-axis;

legend in English for levels of education (text below bars, left to right): Level I, Level II, Level III, Level IV, Level V, Level VI, Level VII, Master's degree, PhD, Bachelor's Degree (First Cycle of the Bologna Process), Master's Degree (Second Cycle of the Bologna Process), no data.

For the age group variable, the average duration of unemployment increases monotonically from 7.18 months (for the under 25 years of age) to 25.98 months (for the unemployed over 55 years of age). In terms of years of work experience, the length of unemployment is shortest for those with 1 to 5 years of work experience (7.94 months), followed by the group with 5 to 10 years of work experience (9.88 months), and the worst position on the labor market is occupied by the unemployed with more than 30 years of work experience, who have been unemployed for an average of 18.85 months. Figure 3.5 gives a graphical presentation.

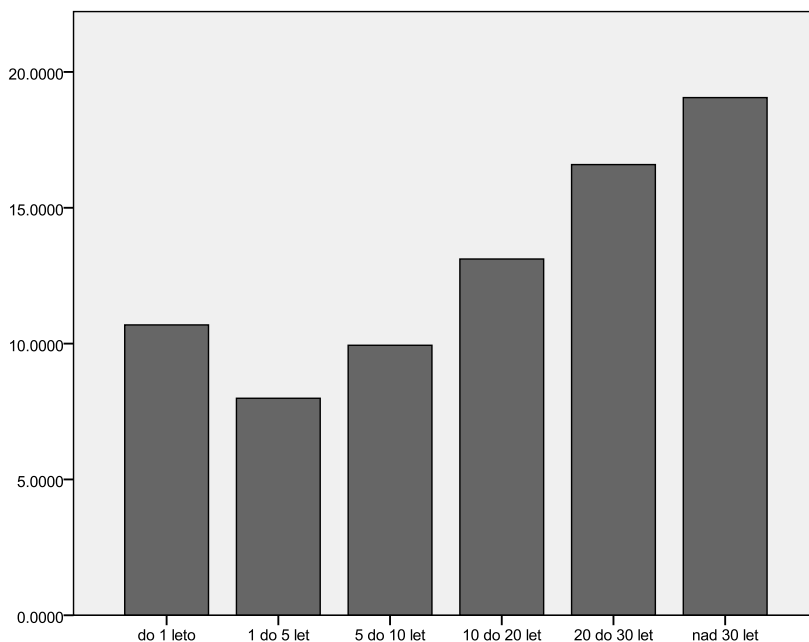


Figure 3.5 bar chart for the average length of unemployment (in months) by length of work experience

Notes: work experience on the x-axis, and average length of unemployment (in months) on the y-axis;

legend in English for intervals of work experience (text below bars, left to right): up to 1 year, 1 to 5 years, 5 to 10 years, 10 to 20 years, 20 to 30 years, and over 30 years.

Next, we analyze the average length of unemployment using two variables. From Figure 3.6 below, which shows a bar chart by gender and education, we can see that for lower levels of education, the average length of unemployment is much longer for women than for men. In comparison, for higher levels of education, the situation is reversed, although here, the gender differences are not as marked.

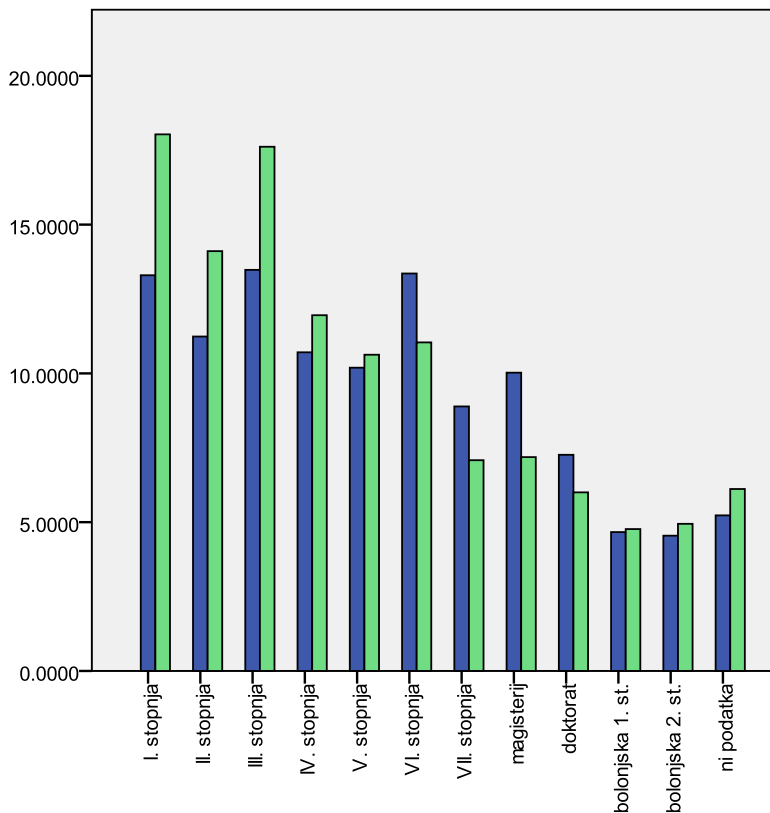


Figure 3.6 bar chart for average unemployment length (in months) by gender and education

Notes: level of education and gender on the x-axis, and average unemployment length (in months) on the y-axis;

legend in English for the level of education (text below bars, left to right): Level I, Level II, Level III, Level IV, Level V, Level VI, Level VII, Master's degree, PhD, Bachelor's Degree (First Cycle of the Bologna Process), Master's Degree (Second Cycle of the Bologna Process), no data;

bar color (for gender): male in blue, female in green.

3 Methodology

Duration models and survival analysis were developed for use in medicine, where survival time meant the time until the patient died, or the disease relapsed. Later, these models were also applied in other disciplines, e.g., economics, where they can be used to estimate the duration of unemployment. The length of unemployment thus gives survival time. In recent years, various survival analysis and duration techniques for modeling the length of unemployment spells and strike duration have gained popularity in the social sciences. New developments in econometric methods for labor market analysis are presented in Moffitt (1999). A comprehensive overview of the techniques and models used in survival analysis is given by Therneau and Grambsch (2001), Klein and Moeschberger (2005), and by Hosmer and Lemeshow (2003). Our methodology description is based on those three sources.

Let the random variable T represent the *survival time*. The distribution function of variable T is defined as:

$$F(t) = P(T < t) \quad (3.1)$$

and measures the probability that death occurs before time t . Since T is a continuous random variable, its probability density $f(t)$ can be calculated as the first derivative of the distribution function. The *survival function* $S(t)$ denotes the probability of survival at least up to time t and is given by the equation:

$$S(t) = P(T \geq t) = 1 - F(t) . \quad (3.2)$$

Limit:

$$\lambda(t) = \lim_{\delta \rightarrow 0} \frac{P(t \leq T < t + \delta | T \geq t)}{\delta} \quad (3.3)$$

represents the risk of death at time t . The (current) risk function $\lambda(t)$ measures the current mortality rate under the survival condition up to time t . Larger values of the risk function can be interpreted as a higher potential for the event to occur. If we integrate the risk

function on the interval $[0, t]$, we obtain the *cumulative risk function*:

$$\Lambda(t) = \int_0^t \lambda(u) du \quad (3.4)$$

It is easy to show that $-\log S(t) = \int_0^t \lambda(u) du$ and $S(t) = e^{-\int_0^t \lambda(u) du}$

holds, respectively. It can even be demonstrated that any of the functions $F(t)$, $S(t)$, $f(t)$ and $\lambda(t)$ can be expressed by any of the other three functions. Therefore, in the empirical analysis, only one of the functions can be estimated, while the others can be calculated from the inferred relationships between the functions.

Parametric duration models, such as the Cox proportional hazards model, are widely used in practice. It should be noted that parametric models assume a complex data structure, which may lead to biased estimates of risk levels under certain conditions. Non-parametric methods, with the Kaplan-Meier estimator at the forefront, are more robust, which can be an advantage over parametric methods.

The Kaplan-Meier survival function estimator is also called the *product limit estimator* for reasons that will become clear after derivation. Given n statistical units with p different survival times $t_1 < t_2 < \dots < t_p$ and d_i deaths at the time, let us also assume there are no censored observations at the outset. For time t in the interval $[t_s, t_{s+1})$, the survival function can be estimated as follows:

$$\hat{S}(t) = 1 - \hat{F}(t) = \frac{n - \sum_{j=1}^s d_j}{n}, \quad t_s \leq t < t_{s+1}. \quad (3.5)$$

Multiplying the numerator and denominator of the previous expression by the factors of the form $n - d_1 - d_2 - \dots - d_i$, $i = 1, 2, \dots, s - 1$, in sequence, gives:

$$\hat{S}(t) = \frac{n-d_1}{n} \cdot \frac{n-d_1-d_2}{n-d_1} \cdot \dots \cdot \frac{n-d_1-d_2-\dots-d_s}{n-d_1-\dots-d_{s-1}}$$

Let r_i , $i = 2, \dots, p$ denote the number of statistical units that have a survival time of at least t_{i-1} and let $r_1 = n$. In other words, the *number at risk* r_i takes into account all individuals alive in the time interval $[t_{i-1}, t_i)$. Assuming no censored observations, the equation $r_{i+1} = r_i - d_i$ holds, whereas, in the case of censoring, $r_{i+1} = r_i - d_i - c_i$, where c_i it denotes the number of censored observations in the interval $[t_{i-1}, t_i)$. Thus, the final version of Kaplan-Meier's estimator is of the form.

$$\hat{S}(t) = \left(1 - \frac{d_1}{r_1}\right) \cdot \dots \cdot \left(1 - \frac{d_s}{r_s}\right) = \prod_{j=1}^s \left(1 - \frac{d_j}{r_j}\right), \quad t_s \leq t < t_{s+1}. \quad (3.6)$$

Our description of the Kaplan-Meier estimator is based on the book by Kleinbaum and Klein (2012), where the reader can find extensive discussion on the topic.

4 Results and discussion

The term risk comes from biostatistics, where it usually refers to the risk that the patient being monitored will die. In our case, however, it is the “risk” that an unemployment spell will end since the risk function measures the current level of employability under the unemployment condition up to the present moment. In this case, a higher risk is preferable.

The differences in the impact of educational attainment on unemployment duration can also be seen in the cumulative risk function plot for the education variable (Figure 3.7). The crosses show the censored observations. The cumulative risk function increases most slowly for level III education (in purple), followed by level I education (in light green). The highest cumulative risk values

are obtained for Bologna Level I (in dark yellow), PhD (in dark green), and Level VII in grey.

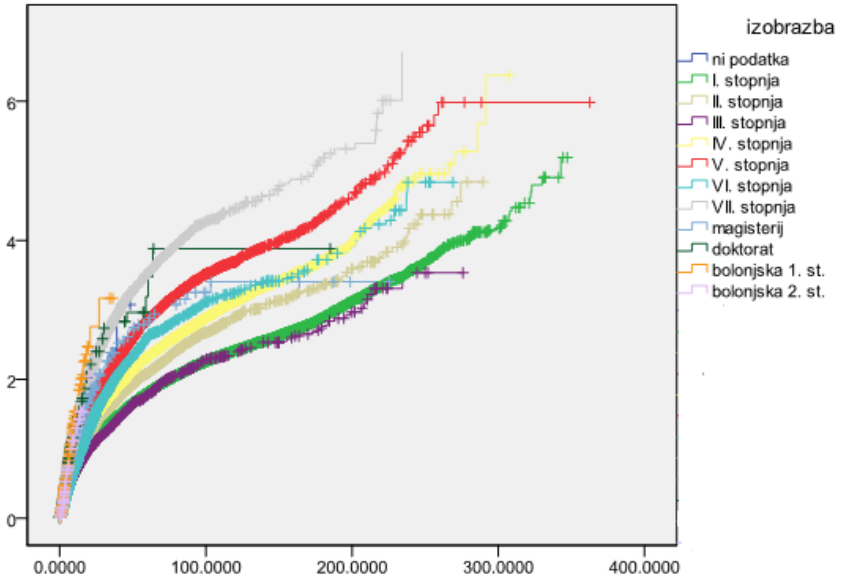


Figure 3.7 Cumulative hazard function for the length of unemployment for different levels of education

Notes: legend in English (top right corner, top to bottom levels of education): Education: no data, Level I, Level II, Level III, Level IV, Level V, Level VI, Level VII, Master's degree, PhD, Bachelor's Degree (First Cycle of the Bologna Process), Master's Degree (Second Cycle of the Bologna Process).

Figure 3.8 shows the Kaplan-Meier survival function estimator. Recall that the value of the survival function S at time t gives the probability that unemployment will persist at least until time t . Thus, the graph shows that the probability that unemployment will persist for at least 1 year is about 0.4, or 40%.

We have also plotted the Kaplan-Meier survival function by level of education (Figure 3.9). Differences in survival probabilities between education levels change over time. Differences increase until the unemployment length is about 1.5 years, after which they decline slowly. The maximum survival probability range at $t = 1.5$ years (i.e., the range of the probability of being unemployed for at

least 1.5 years) is about 30 percentage points.

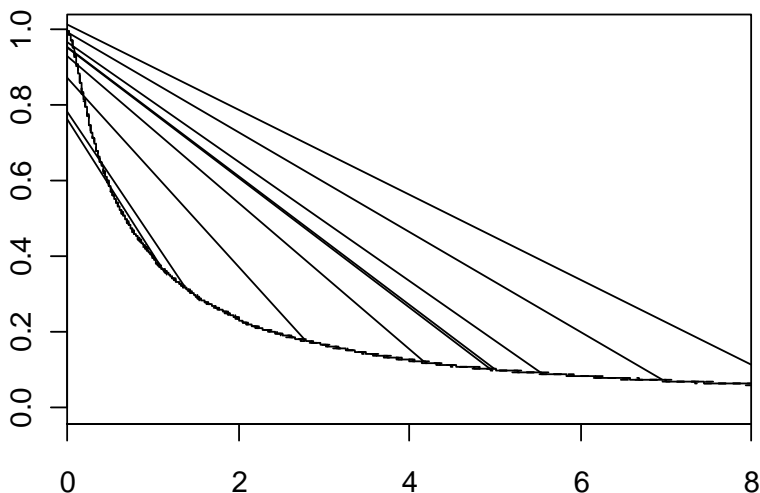


Figure 3.8 Kaplan-Meier survival function estimator

Notes: survival time (unemployment length) (in years) on the x-axis, and Kaplan-Meier survival function estimator (i.e., the probability that unemployment will persist at least until time t) on the y-axis.

5 Conclusion

The analysis reveals pronounced differences in the length of unemployment spells among different regions, as expected due to Slovenia's more developed western and central parts and the less developed eastern parts. Female unemployment spells are, on average, 8% longer than male spells. Average unemployment length increases monotonically with increasing age. Higher levels of education are supposed to lead to better labor market outcomes, but surprisingly, according to the data analyzed, this is not always the case for Slovenia. Differences in survival probabilities between levels of education in the Kaplan-Meier estimator change over time. Differences increase until the unemployment length is about 1.5 years, after which they decline slowly.

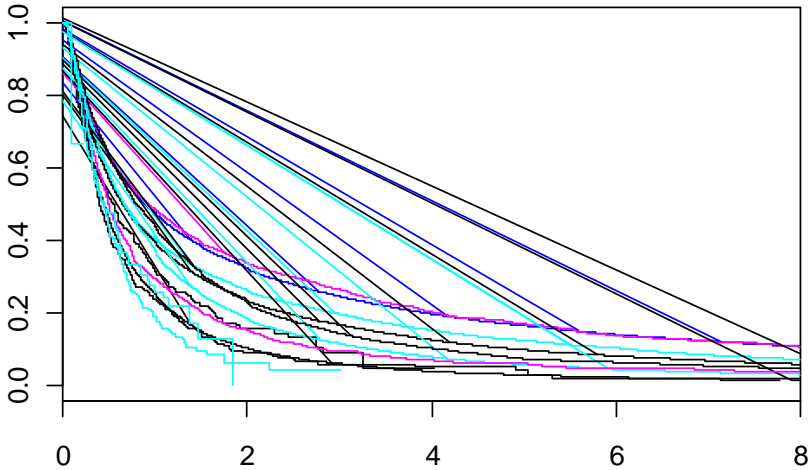


Figure 3.9 Kaplan-Meier survival function estimator for different education levels

Notes: survival time (unemployment length) (in years) on the x-axis, Kaplan-Meier survival function estimator (i.e., the probability that unemployment will persist at least until time t) for different levels of education on the y-axis.

Acknowledgment

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Mgr. Barbora Prauzkova
ORCID: <https://orcid.org/0009-0006-9657-7155>
PhD student at the Department of
Management
VSB – Technical University of Ostrava
(Ostrava, Czech Republic)

**STRATEGIC
MANAGEMENT AS A
DETERMINANT OF
SUSTAINABLE
DEVELOPMENT IN
SOCIAL SERVICES
FOR SENIORS**

<https://doi.org/10.5281/zenodo.14539711>

Abstract

Demographic changes and technological advancements present significant challenges to the sustainable development of socio-economic systems, particularly in the social services field for seniors. The ageing population increases the demand for comprehensive and individualised care, while technological innovations offer opportunities to enhance service quality and efficiency.

This article analyses how selected trends in strategic management – agile management, client-oriented approaches, digitalisation, implementation of assistive technologies, age management, and talent management – determine sustainable development within socio-economic systems. By examining these approaches, we explore their contributions to improving the quality and efficiency of social services for seniors, enhancing employee working conditions, and promoting organisational sustainability.

The analysis identifies practical benefits such as increased service flexibility, personalized care leading to higher client satisfaction, improved employee engagement through professional development opportunities, and enhanced efficiency via technological innovations. Recommendations include adopting flexible management practices that actively involve clients and their families, investing in digital tools and assistive technologies while ensuring data security and user-friendliness, implementing age management strategies to leverage the expertise of older employees, and focusing on talent management to attract and retain skilled staff. Addressing challenges like resistance to change, financial constraints, and legislative barriers is crucial. By highlighting these strategies and associated challenges, the article offers valuable insights into enhancing the quality and efficiency of social services for seniors, contributing to broader socio-economic development amidst structural transformations.

Keywords: *strategic management; agile management; client-oriented approach; digitalisation; assistive technologies; age management; talent management; social services for seniors.*

Introduction

Demographic changes and technological advancements bring new and unavoidable challenges to the social services field for seniors. The ageing population increases the number of seniors who require comprehensive and specialised care (Osareme, 2024). Technological innovations are simultaneously transforming how these services can be provided, opening new possibilities for improving the quality of care. Client expectations are also evolving, with an increasing demand for care tailored to individual needs and preferences. Additionally, employees are seeking better working conditions and opportunities for professional development.

Organisations providing social services must continually enhance their processes and performance in such a dynamic environment. They must respond swiftly to new stimuli while implementing strategies ensuring sustainability and high-quality care. Applying advanced strategic management approaches appears to solve these challenges, enabling organisations to manage available resources better, effectively integrate new technologies, and adapt to the changing requirements of clients and employees.

Strategic management is a process by which organisational leadership plans and implements the main goals and strategies, considering available resources and the internal and external situation of the organisation to achieve the set objectives (Alharbi, 2024).

This article aims to fill this gap by analyzing and discussing how selected trends in strategic management serve as determinants of sustainable development within socio-economic systems, specifically in the context of social services for seniors. By examining agile management and client-oriented approaches, digitalization and the implementation of assistive technologies, age management, and talent management, the article explores how these strategies can address the identified challenges.

The contribution of this work lies in providing valuable insights into how these strategic management practices can improve the quality and efficiency of social services, enhance employee working

conditions, and promote organizational sustainability. It also discusses the challenges and limitations associated with implementing these strategies, such as resistance to change and legislative barriers.

Materials and Methods

This article aims to analyse and discuss selected trends in strategic management, their implementation in the context of social services for seniors, and their impact on the quality and efficiency of provided services. The focus is mainly on agile management and client-oriented approaches, digitalisation and the implementation of assistive technologies, age management, and talent management, which can contribute to addressing these key challenges. These methods were selected based on their relevance and potential impact on improving service quality and efficiency in the context of demographic changes and technological advancements.

To better understand how strategic management approaches can contribute to enhancing social services for seniors and improving working conditions for employees, the following research questions were formulated:

1. How can selected trends in strategic management contribute to improving social services for seniors?
2. What strategic management processes can enhance working conditions and professional development for employees in social services?
3. What challenges and limitations arise from implementing strategic management for seniors in the social services field?

The contribution of this work is to expand knowledge about the application of modern trends in strategic management in the social services field for seniors. However, the methodology has certain limitations. The study relies primarily on secondary data and literature review, lacking empirical data from practical implementations. This limits the ability to validate the proposed strategies with real-world evidence and may affect the generalizability of the findings. Additionally, the absence of specific case studies or quantitative analyses means that the effectiveness of these approaches in different organizational contexts remains to be empirically tested. Future research involving empirical studies and

data collection is necessary to verify and refine the proposed strategies, ensuring their applicability and effectiveness in practice.

Results and Discussion

In the Results and Discussion section, the article emphasizes that combining agile management with a client-oriented approach enables organizations to flexibly adapt to changing needs and provide personalized, high-quality care by actively involving clients and their families. Digitalization and the implementation of assistive technologies are highlighted as crucial for improving efficiency and quality in social services, through means like electronic documentation and devices that support both clients' independence and employees' work. Additionally, the importance of age management and talent management is discussed in addressing workforce challenges due to demographic changes, by retaining experienced older workers, fostering intergenerational cooperation, and focusing on developing and retaining key employees. Together, these strategic management approaches contribute to enhanced service quality, better working conditions, and sustainable development in social services for seniors.

Agile Management and Client-Oriented Approach

Agile management is an approach that emphasises flexibility, rapid adaptation to changes, and continuous process improvement. According to Felipe, Roldán, and Leal-Rodríguez (2017), organisational agility enables effective responses to dynamic environments and supports innovation. In social services for seniors, agile management allows organisations to adapt services to changing client needs, implement new procedures and technologies, and effectively respond to unexpected situations.

A key element of agile management in social services is close collaboration with the client and their family. Families often play a crucial role in a senior's life, and their involvement can significantly enhance the quality of care provided. Collaboration includes sharing information, joint decision-making about care, and potentially active participation of family members in the care process if the client desires. Respecting the client's right to privacy and autonomy is essential, even within senior care facilities (Bauer, 2007).

The client-oriented approach places the client at the centre of all organisational activities. This approach emphasises individualising services based on each senior's needs and preferences. Clients are actively involved in decision-making processes concerning their care, increasing their satisfaction and sense of autonomy. Respecting clients' dignity, values, and rights is foundational to this approach (Edvardsson et al., 2008).

Combining agile management with a client-oriented approach creates a synergistic effect, enabling organisations to provide care that is both flexible and deeply respectful of individual client needs. Agile methodologies offer the organisational framework and tools for rapid adaptation, while the client-oriented approach ensures that the seniors' interests and needs drive all changes.

In practice, organisations actively collaborate with clients and their families. Family involvement is crucial for understanding the complex needs of seniors, as family members can provide valuable information and support, contributing to better care outcomes. Regular reassessment and adjustment of care plans allow teams to quickly respond to changes in a client's health status or preferences, ensuring care is always current and relevant. Open, transparent, and empathetic communication among employees, clients, and families builds trust and facilitates effective collaboration. Clients are encouraged to express their wishes and concerns, allowing for better service adaptation (Men, 2015).

Utilising multidisciplinary teams, including social work, healthcare, and psychology experts, enables a comprehensive approach to client care, considering all life aspects. Implementing an agile and client-oriented approach brings numerous benefits. Flexible care adaptation increases service quality and efficiency, leading to better outcomes and more efficient resource use. Personalised care and client involvement enhance satisfaction, while employees appreciate the meaningfulness of their work and the ability to influence processes (Bauer, 2007). Organisations that respond quickly to changes and provide high-quality, individualised services strengthen their competitiveness in the social services market.

Challenges associated with this combined approach include changing organisational culture, training employees in new methodologies, and ensuring sufficient resources to support flexible

processes. Careful change management is crucial to avoid overloading employees or compromising service quality.

Digitalisation and Implementation of Assistive Technologies

Digitalisation and the implementation of assistive technologies play a key role in improving the efficiency and quality of social services. Electronic documentation enables efficient client information management, facilitates data sharing among service providers, and enhances care continuity (Smith et al., 2005). Digitalising records reduces administrative burdens on employees and minimises errors associated with paper documentation.

Electronic systems provide quick access to important information, allowing for effective real-time decision-making and increasing care quality. In daily client care, these technologies become invaluable, providing employees with immediate data on clients' health status or needs. Modern digital tools enable clients to schedule services, view upcoming visits, track payments, and manage other care aspects (Merkel, 2020). Successful implementation requires thorough planning, active stakeholder involvement, and addressing challenges like financial costs, employee training, client privacy protection, and seniors' digital literacy.

Assistive technologies are becoming indispensable in modern social services. These devices, systems, and software applications support and enhance the functional abilities of individuals with limitations or disabilities. In senior care, they facilitate daily activities, increase client independence, and significantly contribute to care efficiency and quality.

Monitoring devices allow rapid responses in emergencies, while communication tools improve interactions with clients with speech or hearing difficulties. Personalised technologies tailored to individual needs can enhance clients' quality of life and satisfaction. These technologies also assist employees in caring for immobile clients. Lifting systems and automated positioning minimise physical effort when handling clients, reducing work injury risks and improving client safety. They increase care efficiency, potentially leading to higher job satisfaction.

Challenges in implementing assistive technologies include financial costs, user-friendliness, privacy protection, and technical reliability. Sustainable use requires strategic planning, stakeholder

involvement, and careful risk management. Organisations should focus on selecting appropriate technologies, providing employee training, and ensuring data security. Successful implementation links technological innovations with caregivers' human approach and expertise, respecting clients' dignity and privacy.

Age Management

The ageing population has resulted in a substantial increase in the proportion of mature workers (aged 55-64) in the labour force across OECD countries, growing from 10% in 1990 to 17% by 2022 (OECD, 2024). Considering the demographic ageing projected for the next 30 years, this proportion is expected to rise even further.

Age management is a strategic approach that considers employees' age in organisational policies and processes. It aims to address demographic changes in the workplace by combating age barriers and discrimination while promoting diversity (Urbancová & Vrabcová, 2023). This approach leverages the valuable knowledge and skills of experienced older workers, significantly enhancing the quality of care provided to seniors. Organisations can improve social services by retaining and supporting older employees through flexible working conditions, such as part-time options, adjusted work hours, or modifications to job roles to make them less physically demanding, and by recognising their contributions.

Implementing age management involves creating policies that ensure equal opportunities for all age groups and addressing the needs of younger, middle-aged, and older employees to prevent age-related discrimination. This approach fosters intergenerational cooperation, facilitating knowledge sharing and strengthening team cohesion. Providing professional development opportunities for all employees, regardless of age, increases competencies and motivation, ensuring a fair and inclusive work environment. These strategic management processes enhance working conditions and promote professional growth among staff in social services.

However, challenges and limitations may arise, such as overcoming age-related biases within the organisation, allocating resources for training and development, and adjusting existing policies to accommodate diverse age-related needs. Additionally, there may be resistance to change or difficulties in modifying established organisational cultures. Addressing these challenges

requires commitment from leadership and a cultural shift toward valuing diversity and inclusivity in the workplace.

By adopting age management practices, organisations can improve the quality and efficiency of social services for seniors and create a more supportive and productive work environment for employees of all ages.

Talent management

Talent management is a strategic approach that focuses on identifying, developing, and retaining key employees, essential in social services for seniors, where qualified and motivated staff are crucial for quality care and organisational stability. According to Horváthová (2011), managing key positions and employees is a significant tool in human resource management, as these positions and employees are decisive factors in organisational performance and stability. By effectively implementing talent management, organisations can introduce new ideas, innovations, and expertise, leading to a higher quality of care for seniors.

This strategic management trend improves social services by ensuring that the most capable and dedicated individuals are in key roles, directly enhancing service delivery. Talent management processes such as performance evaluations, competence assessments, and motivation analyses help identify essential roles and high-potential employees. Offering professional growth opportunities like training, mentoring, and specialised projects prepares employees for future roles and enhances their working conditions and professional development. Retaining talented staff through motivational programs, competitive salaries, benefits, and a positive work environment ensures continuity and stability within the organisation.

However, challenges and limitations arise in implementing talent management in social services for seniors. A significant issue is the lack of qualified workers, making recruiting and retaining skilled employees challenging and heightening the importance of internal talent development. Financial constraints, particularly in non-profit organisations, limit investments in training and benefits necessary for effective talent management. Organisational culture plays a pivotal role; talent management initiatives may fail without leadership support and a culture that values employee development. Additionally, there is a need to prevent discrimination and ensure

fairness so that all employees have equal development opportunities, which is crucial for maintaining morale and reducing turnover.

Addressing these challenges requires innovative recruitment strategies to attract qualified professionals and efficient resource allocation to maximise limited budgets. Leadership must foster a supportive culture that values employee growth and development. Implementing transparent and fair talent management practices is essential to build trust and ensure all staff members are engaged in the organisation's mission. By overcoming these obstacles, organisations can enhance their strategic management processes, leading to improved social services for seniors through a dedicated and proficient workforce.

Conclusions

This work aimed to analyse and discuss selected trends in strategic management, their implementation in the context of social services for seniors, and their impact on the quality and efficiency of provided services. This was achieved through a detailed analysis of agile management, client-oriented approaches, digitalisation, assistive technologies, age management, and talent management. The work answered the research questions, highlighted the benefits and challenges associated with implementing these trends, and offered practical recommendations. It contributed to a better understanding of how strategic management can positively influence social services for seniors.

However, applying these strategic management methods may encounter traditional challenges associated with introducing innovations. Resistance to change among employees can hinder the adoption of new practices, especially if there is a lack of willingness to accept changes or insufficient training provided. Inadequate support from company leadership can further impede the implementation process, as strong leadership commitment is crucial for driving organisational change. Additionally, clients may have limited ability or willingness to cooperate and accept changes, affecting the effectiveness of client-oriented approaches and the utilisation of assistive technologies. Legislative constraints may pose limitations, as existing regulations might not fully support or may even restrict certain innovative practices. Financial constraints are another significant barrier; for example, the increased costs

associated with employing more staff on part-time contracts instead of fewer full-time employees may not be feasible within tight budgets. Other limitations include technological barriers, such as the lack of infrastructure for digitalisation, and cultural factors that resist changes in traditional care practices. Ensuring adequate training and managing the transition period effectively are essential to mitigate potential disruptions during implementation.

Further research could focus on empirical studies of successful strategic management implementations in specific organisations to identify practical procedures and proven methods for effective application.

Another area for future research is an in-depth analysis of the impact of assistive technologies. This research could focus on their effect on the quality of senior care and employee working conditions, including evaluations of the technologies' effectiveness and acceptance. By understanding these factors, organizations can better assess the benefits and challenges of implementing assistive technologies, leading to more informed decisions that enhance care quality and staff well-being.

Another possibility for future research is the analysis of legislative constraints that hinder the adoption of innovative strategic management practices in social services for seniors. Since existing regulations might not fully support or may even restrict certain innovative practices, this research would examine how laws and policies impact the implementation of approaches like agile management, digitalization, and assistive technologies. By identifying these legal barriers, organizations can better understand legislative limitations and potentially find ways to implement innovative practices within the existing legal framework, directly addressing the limitations identified in this work where legislative constraints challenge the application of strategic management methods.

Another area for future research is the development of financial models for sustainable implementation of strategic management. It could explore opportunities such as obtaining government grants, collaborating with companies developing technologies for seniors, and partnering with non-profit organizations and senior clubs. By identifying funding sources and innovative financing mechanisms,

organizations can overcome financial barriers to adopting practices like digitalization, assistive technologies, and talent management. Such research could help organizations understand the long-term economic benefits of strategic management approaches through cost-benefit analyses and collaborative funding models. Partnerships with technology firms and community groups can provide resources and support, reducing the financial burden and enabling the adoption of innovative practices that enhance the quality and efficiency of social services for seniors despite existing financial constraints.

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Rita Virbaliene

ORCID: <https://orcid.org/0000-0002-3541-1614>

Master of Law, Lecturer

Social Wellbeing Department at the Faculty of Pedagogy

Janina Čižikienė

ORCID: <https://orcid.org/0000-0002-5590-5398>

PhD in Management, Lecturer

Social Wellbeing Department at the Faculty of Pedagogy

Danutė Trukšiniene

Master of Social Work, an Expert, Lecturer

Social Wellbeing Department at the Faculty of Pedagogy

Vilniaus Kolegija/ Higher Education Institution (Vilnius, Lithuania)

BRIDGING THE GAP: THE ROLE OF SOCIAL WORKERS IN FACILITATING SUCCESSFUL INTEGRATION OF PEOPLE WITH DISABILITIES INTO SOCIETY

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Abstract

This article examines the factors that determine the successful integration of people with disabilities into society. It takes into account the growing number of people of working age who are diagnosed with a disability and the impact this has on their quality of life. It analyses the main social barriers, such as unemployment, inadequate vocational rehabilitation, lack of motivation and social stigma, which hinder the participation of people with disabilities in the labour market. The impact of infrastructure adaptation, improving access to social services and promoting social inclusion, and infrastructure development on the integration process is discussed. The paper highlights the importance of

the social services system, the advantages of decentralisation and the need to focus on the individual needs of people with disabilities. The paper concludes that successful integration of people with disabilities requires complex solutions and cooperation between all sectors of society to ensure their equal participation in society and the opportunity to realise their potential.

Keywords: *labour market, integration of people with disabilities, social service, social worker.*

Introduction

The integration of people with disabilities into society is a multi-stage and complex process, the success of which depends on many social, economic and political factors. The integration of persons with disabilities still faces serious challenges, including limited access to education, inadequate vocational rehabilitation systems, high unemployment rates and social stigma (Pocius, Neverauskienė, 2015; Bredgaard, Salado-Rasmussen, 2021). These factors not only limit the ability of people with disabilities to participate in public life, but also increase their economic dependence and social isolation. The integration of people with disabilities into society is a major social, economic and political challenge that requires comprehensive attention and solutions. The increasing number of people of working age who are diagnosed with a disability for the first time highlights the urgency of this issue and the need to analyse the factors that affect their quality of life and their ability to participate actively in society.

Social workers play an important role in helping to overcome these barriers. In addition to providing personalised services, they promote changes in the attitudes of employers and society, contribute to the development of social infrastructure and reduce stigma (Chumo et al., 2023). Nevertheless, the success of integration depends not only on the activities of social workers, but also on the broader social context, such as the appropriate legal framework, policy decisions and economic conditions (Rimmerman, 2013; Porter, 2019).

The aim of this paper is to show how social, economic and political factors contribute to the successful integration of people with disabilities, and what measures could help to reduce social

exclusion. The aim of the paper is to analyse the various factors that determine the integration process and to identify effective strategies to enhance social inclusion. The objectives of the study are: 1) to assess the social barriers that hinder the integration of people with disabilities, with a focus on unemployment, gaps in vocational rehabilitation and lack of motivation; 2) to define the role of the social services system in improving the quality of life of people with disabilities and strengthening their integration; 3) to identify factors that would help to overcome social barriers and improve the social services system more effectively in order to ensure the active integration of people with disabilities. The analysis of the paper is based on a qualitative research methodology, including analysis of scientific literature, legal documents and social policy guidelines. This method aims to delve deeper into the factors analysed and to identify the most effective measures to reduce social exclusion and to enhance the opportunities for people with disabilities to become active participants in society.

Factors determining the successful integration of people with disabilities into society

Successful integration of people with disabilities into society requires analysing not only the person's health status, but also the broader social context that determines their social integration or makes it more difficult (Neverauskienė, 2012; Pocius, Neverauskienė, 2015; McKinney, Swartz, 2021). Social workers working with people with disabilities have to take into account a variety of factors that influence not only the onset of disability, but also their ability to ensure their full participation in society. Unemployment is one of the most significant barriers to integration for people with disabilities (Halid et al., 2020, Chui et al., 2023). The majority of disabled people of working age face difficulties in gaining employment due to the reluctance of employers to hire people with disabilities (Bredgaard, Salado-Rasmussen, 2021; Chui et al., 2023). This reluctance is often due to the lack of professional qualifications experienced by people with disabilities or the inadequacy of jobs to meet their specific needs. This situation not only reduces the employment opportunities of people with disabilities, but also leads to their social exclusion and economic disempowerment (Chumo et al., 2023; Nagtegaal et al., 2023). Gaps

in vocational rehabilitation also constitute a significant barrier to integration (Porter, 2019). An underdeveloped vocational rehabilitation system limits the ability of persons with disabilities to re-enter the labour market or to acquire new skills needed for competitive employment (Chumo et al., 2023). Without adequate rehabilitation, persons with disabilities often remain isolated from vocational activities and financial independence (Saunders, Nedelec, 2014). Lack of motivation due to a lack of adaptability of the environment to the needs of persons with disabilities, social stigma and often minimal financial incentives further reduce the individual's willingness to integrate into the labour market (Chui et al., 2023). For some people, unemployment benefits become their only source of livelihood, which not only discourages them from entering employment but also creates dependency on social assistance (Saunders, Nedelec, 2014; Bredgaard, Salado- Rasmussen, 2021; Chumo et al., 2023).

The employment of people with disabilities remains a particularly pressing issue that requires cross-cutting solutions (Porter, 2019; Khayatzadeh-Mahani et al., 2020). People with visual, mental or hearing impairments often face particular challenges in securing not only employment but also a stable income (Bredgaard, Salado-Rasmussen, 2021). Even when employment is achieved, minimum wages often do not provide the financial independence that is necessary to live a fulfilling life. This situation not only demotivates people with disabilities, but also hinders their ability to become active members of society (Porter, 2019). In order to reduce these barriers, it is necessary to develop social infrastructure, strengthen vocational rehabilitation services, reduce social stigma, and encourage employers to recruit people with disabilities by adapting workplaces to their needs. This would not only increase the employment rate of people with disabilities, but also enable them to become independent, equal members of society (Oertle, O'Leary, 2017; Porter, 2019; Khayatzadeh-Mahani et al., 2020).

The role of policy factors in the integration of people with disabilities into society is crucial, as they ensure not only the legal but also the practical implementation of inclusion (Rimmerman, 2013). In Lithuania, this process is closely linked to European Union (EU) policy guidelines, which help to create an inclusive

environment and strengthen the protection of the rights of persons with disabilities. EU legislation and strategies have provided a significant boost to Lithuania, allowing not only for a more intensive approach to integration, but also for the application of best practices that reduce social exclusion and enhance the participation of persons with disabilities in society (Waltz, Schippers, 2021; Cabauatan, 2024).

There are three main strands of public policy to ensure the rights of people with disabilities. The first is the development of social benefits, which aims to provide disabled people with financial support and other assistance measures to facilitate their daily lives and enhance their independence (Waltz, Schippers, 2021). The second strand is the implementation of legislation to ensure that disabled people have access to environments, facilities and services that meet their needs. This includes not only the adaptation of physical infrastructure, but also of digital and information infrastructure. The third strand is improving access to rehabilitation and social services, which involves the development of an effective rehabilitation system and the strengthening of the social services network, covering both medical and social assistance (Rimmerman, 2013; Waltz, Schippers, 2021; Cabauatan, 2024).

These measures require systematic and consistent implementation. Public authorities must ensure that these processes involve multidisciplinary expertise and that services are tailored to the individual needs of people with disabilities (Porter, 2019; Bezyak et al., 2020; Waltz, Schippers, 2021; Babik, Gardner, 2021). A particularly important challenge is to decentralise support systems so that services are not only available in specialised centres, but also in the individual's own living environment (Mansell, Ericsson, 2013; Bezyak et al., 2020). Such an approach promotes the connection of persons with disabilities to the community and strengthens their social integration. Thus, policy solutions should include long-term strategies that raise public awareness of the needs of persons with disabilities, motivate employers to adapt workplaces and provide training for professionals working in the field (Porter, 2019; Khayat-zadeh-Mahani et al., 2020; Cabauatan, 2024). It is only through effective enforcement of legislation, sustainable social policies and ongoing cooperation with the EU institutions that the rights of people with disabilities can be realised, rather than merely

declared (Waltz, Schippers, 2021; Cabauatan, 2024).

In summary, the policy and legal environment is the cornerstone of the integration process for people with disabilities. These factors not only create the necessary conditions for persons with disabilities to become equal members of society, but also enable them to participate actively in society and realise their potential. A sustainable political and legal framework is a prerequisite for building a socially responsible and inclusive society.

Economic factors are one of the key aspects of the integration of people with disabilities into society, as the stability of a country's economy has a direct impact on their quality of life, their ability to participate in the labour market and their access to social services (Calderón-Milán et al., 2020; Babik and Gardner, 2021). The economic environment determines not only the social situation of people with disabilities, but also their motivation and their ability to participate in active society (Bezyak et al., 2020; Schwartz, Kelly, 2021).

One of the main barriers faced by people with disabilities is the high unemployment rate, especially in rural areas (Calderón-Milán et al., 2020; Morwane et al., 2021). In such areas, the lack of jobs encourages some individuals to seek disability status as an alternative to social protection. This not only discourages people from returning to the labour market, but also slows down rehabilitation processes. As a result, people with disabilities remain isolated from the labour market, contributing to their economic and social exclusion (Chumo et al., 2023). Another important economic factor is financial insufficiency, which limits the state's ability to allocate funds for social programmes, employment support and educational services. Underfunded social programmes have a direct impact on disabled people's ability to acquire the skills they need, to find suitable employment or to access rehabilitation services (Waltz, Schippers, 2021; Babik, Gardner, 2021; Cabauatan, 2024). This situation makes it difficult for them to become independent and active members of society. In addition to economic stability, societal attitudes and the adaptation of social infrastructure are important. Investment in adapting the physical, informational and social environment is essential to reduce social exclusion and ensure that people with disabilities can participate in society (Khayatzadeh-

Mahani et al., 2020; Calderón-Milán et al., 2020; Cabauatan, 2024. Well-adapted infrastructure, including public spaces, transport systems and access to information, builds the self-confidence of people with disabilities and increases their participation in social and economic life. Effective integration of people with disabilities requires a sustainable economic framework that not only increases funding for social services but also encourages employers to adapt workplaces to the needs of people with disabilities (Kostetska et al., 2020; Calderón-Milán et al., 2020; Morwane, et al., 2021). This includes tax incentives, subsidies for job creation and the development of vocational rehabilitation programmes. Such a comprehensive approach would not only strengthen the economic empowerment of people with disabilities but also contribute to their successful integration into society (Schwartz, Kelly, 2021; Hariram et al., 2023).

In summary, economic factors are an essential part of the integration of people with disabilities. Only by ensuring economic stability, increasing investment in social infrastructure and ensuring equal opportunities in the labour market can conditions be created to enable people with disabilities to become equal members of society and realise their potential.

Quality of life for people with disabilities is a multilevel and complex category, encompassing physical, emotional and social well-being. One of the main indicators of quality of life is physical and mental health, which directly influences not only daily activities, but also a person's overall well-being (Kostetska et al., 2020; Shevchuk et al., 2022). In line with Maslow's hierarchy of needs, every person, regardless of health status, strives to meet both basic needs, such as physiological and safety aspects, and higher needs, including recognition and self-expression (El-Ganainy et al., 2021; Redko, 2024). However, the needs of people with disabilities are often more complex and related to specific problems caused by their health condition or environmental inadequacies (Chordiya, Sabharwal, 2024). Ensuring quality of life for this social group therefore requires an integrated and personalised approach.

Improving quality of life requires a comprehensive range of services that are tailored to individual needs. This includes medical and social services, vocational rehabilitation, and assistance related

to specific needs, such as adapted transport or technical aids (Kostetska et al., 2020; Shevchuk et al., 2022; Cabauatan, 2024). Furthermore, it is important that these services are not only accessible, but also provided in the immediate environment in order to reduce the social isolation of people with disabilities.

Adapting the living environment is another important strategy for improving quality of life. Accessible physical and informational environments, including adapted housing, public spaces and transport systems, enable people with disabilities to live independently and participate actively in the community (Schwartz, Kelly, 2021; Chordiya, Sabharwal, 2024). It is also important to ensure access to information technology, which is becoming an important part of daily activities and communication (Calderón-Milán et al., 2020; El-Ganainy et al., 2021; Hariram et al., 2023).

Promoting social inclusion through cultural, sporting and social activities is also vital (Puce et al., 2023). Such activities not only provide emotional satisfaction, but also contribute to strengthening social ties and increasing personal motivation. This strategy also helps to reduce social stigma and promotes social solidarity (Puce et al., 2023; Chordiya and Sabharwal, 2024). It is also important to tailor long-term and systemic solutions to improve quality of life strategies, involving all stakeholders, such as public institutions, NGOs, employers and society itself (Bezyak et al., 2020; Schwartz, Kelly, 2021). Investing in social infrastructure, education and public awareness of the needs of people with disabilities not only improves the living conditions of this group, but also lays the foundations for an inclusive and aware society (El-Ganainy et al., 2021; Hariram et al., 2023).

Researchers agree that improving the quality of life of people with disabilities requires an integrated effort focused on enhancing physical, emotional and social well-being (Kostetska et al., 2020; Shevchuk et al., 2022; Cabauatan, 2024). Well-organised social services, adapted environments and access to social life provide the basis for the self-realisation and full integration of people with disabilities. Only a holistic approach and long-term strategies can ensure that people with disabilities have equal opportunities to live a dignified and meaningful life (Bezyak et al., 2020; Schwartz, Kelly, 2021). The integration of people with disabilities into society is a

complex and multifaceted process that is strongly influenced by social, economic and political factors (Redko, 2024). The main axis of the theoretical part of the analysis is the interplay between these factors and their impact on the quality of life and the opportunities for disabled people to participate in society. The social aspects reveal barriers to integration, such as unemployment, gaps in the vocational rehabilitation system, social stigmas and lack of motivation, which hinder disabled people's attempts to participate in the labour market and community activities. This situation calls for comprehensive solutions that focus not only on addressing individual needs, but also on changing societal attitudes and adapting infrastructure (El-Ganainy et al., 2021; Hariram et al., 2023). Economic factors, such as unemployment rates and gaps in financial support, are also key determinants of the independence and social inclusion of persons with disabilities. The stability of a country's economy has a direct impact on access to social services, participation in the labour market and the reduction of social exclusion of persons with disabilities (Khayatzadeh-Mahani et al., 2020; Calderón-Milán et al., 2020). Investments in social infrastructure, workplace adaptations and the development of rehabilitation programmes are necessary not only to improve the living conditions of people with disabilities, but also to strengthen their participation in society (Cabauatan, 2024). Policy factors and the legal environment form the basis of integration processes, as it is through policy decisions and legislation that the rights of people with disabilities are shaped, favourable social policies are developed and infrastructure adaptations are provided. In Lithuania, the European Union guidelines and standards have become a key impetus not only to improve legislation but also to promote solidarity and inclusion in society. The importance of the social services system is highlighted as the basis for integration, ensuring that the basic and specific needs of people with disabilities are met (Waltz, Schippers, 2021; Cabauatan, 2024). Tailored medical, social and vocational rehabilitation services, as well as employment promotion programmes, enable people with disabilities to become active members of society. Decentralisation, which allows services to be provided as close as possible to a person's place of residence, promotes their connection to the community and reduces social exclusion. In summary, successful integration of

people with disabilities requires a systemic approach that focuses on holistic problem solving. Social, economic and political measures need to work synergistically, not only to reduce social exclusion, but also to ensure that people with disabilities have equal opportunities to become full members of society and to realise their full potential.

Assistance provided by a social worker in the integration process

Social workers are one of the most important providers of social services, helping the most vulnerable groups in society, including people with intellectual disabilities. According to the Law on Social Services of the Republic of Lithuania (2006, No. 17-589), the aim of social services is to enable a person or a family to strengthen their capacity to solve social problems independently, to maintain relations with society and to reduce social exclusion. Social services are divided into general services (information, counselling, mediation, organisation of transport, provision of basic necessities, etc.) and special services, which include social care and guardianship.

A social worker's role involves not only direct contact with clients, but also complex problem solving. According to the Catalogue of Social Services (Valstybės žinios, 20 April 2006, No 43-1570), social workers provide a range of services, from information and counselling to social care and crisis support (Oliver et al., 2012). In addition, the worker contributes to the integration of individuals into the labour market, promotes their autonomy and strengthens their social skills. The functions of a social worker cover a wide range of activities including diagnosis, counselling, information, mediation, service planning, prevention, education and management (Alston, 2020). These functions are carried out on the basis of individual social work methods, which are focused on the client's needs and lifestyle. The social worker plays a key role in the integration of people with disabilities into society (Payne, 2020). Their work involves not only direct assistance to the individual, but also a systemic approach that allows them to assess the social, economic and psychological factors that may hinder the participation of a person with disabilities in society (Oliver et al., 2012; Coulshed, Orme, 2018). The social worker's support is based on the identification of individual needs, the coordination of complex

services and the empowerment of people with disabilities to become independent and active members of society. One of the most important tasks of a social worker is the analysis of individual needs (Allan, Briskman, 2020). Each person with disabilities faces different problems, which may be related to health conditions, social barriers or environmental inadequacies. The social worker must assess these circumstances and develop an individual support plan that includes both immediate assistance (e.g. technical aids, transport arrangements) and longer-term strategies to enable the person to integrate into the labour market or community activities (Coulshed, Orme, 2018; Milner et al. 2020). The social worker also plays an important role in coordinating the various services necessary to improve the quality of life of people with disabilities (Allan, Briskman, 2020; Maidment et al., 2022). These services include medical and social rehabilitation, vocational training, psychological support and the provision of social benefits. Proper coordination of these services not only enables people with disabilities to get the help they need, but also ensures their more effective participation in society (Payne, 2020).

Promoting social inclusion is another important aspect of a social worker's work (Maidment et al., 2022). Social workers help to reduce the social isolation of people with disabilities by encouraging their participation in cultural, sporting and social activities (Maidment et al., 2022). These initiatives not only help to strengthen disabled people's links with the community, but also reduce the social stigma that often accompanies the topic of disability (Coulshed, Orme, 2018; Maidment et al., 2022). An important mission of the social worker is to help people with disabilities to understand their rights and opportunities, but also to represent their interests at different levels, from local communities to public institutions. Such activities promote the improvement of social policies and contribute to an inclusive environment.

In summary, the role of the social worker in the integration process of people with disabilities is multi-level and of great importance. It helps to ensure that people with disabilities receive not only direct assistance but also long-term support to enable them to become independent and full members of society. The systematic approach of the social worker, focusing on individual needs,

integrated support and the promotion of social inclusion, is the cornerstone of a successful integration process.

Materials and Methods

The study is based on a qualitative methodology (Bao, 2024), which allows for a deeper analysis of the specificity of social workers' activities and the impact of their functions on the integration processes of people with disabilities. The qualitative research methodology was chosen due to its suitability for exploring subjective experiences (Creswell, Creswell, 2017), social meanings and personal experiences related to social work practice.

The aim of the study is to highlight the importance of the role of social workers in the recruitment and retention of disabled people in the labour market, and to identify the challenges and effectiveness factors of this work. The main method of data collection was semi-structured interviews with social workers. The interview questions were formulated to shed light on social work processes, challenges and outcomes. The following were taken into account: outreach activities; strategies to promote motivation; the role of mediation and job coach services; and the maintenance of service users' emotional well-being in the workplace of choice.

The study involved five social workers who work with people with disabilities and are actively involved in their integration into the labour market. The participants were selected on the basis of their work experience, competence and their ability to reflect on their work. The data collected during the research were analysed using thematic analysis, which allowed to identify the main areas of social workers' activities, their functions and forms of assistance. Several main themes were identified: job support services, counselling, motivation and support. The study was conducted in an ethical manner, ensuring the anonymity and confidentiality of the participants and their right to withdraw from the study at any time. Informed consent was obtained from the participants prior to the interviews.

Results and Discussion

The study shows the importance of the role of social workers in successfully integrating people with intellectual disabilities into the labour market. Participants' responses underline that social workers'

activities are multifaceted and include case management, information, training, counselling, motivation and mediation. These functions are essential to ensure that the employment process not only meets the individual needs of the clients, but also helps them to gain independence and ensures long-term integration. All the social workers in the study identified case management as a core function. This includes planning individual work with the client, coordinating resources and continuously assessing needs. One participant emphasised: “*Case management allows me to coordinate the whole placement process, to make sure that the client feels supported and knows what to do*” (SW1). This function ensures that each client receives a personalised support plan that is tailored to his/her abilities, desires and challenges.

Information and counselling were identified as particularly important functions of a social worker. Social workers help clients to understand their employment options, provide information on various programmes and answer their questions. One participant noted, “*It is my job to provide all the necessary information about the future job and to answer every question the client has so that they can make informed decisions*” (SW4). Counselling helps clients to understand the realities of the labour market, to understand their rights and to find out what steps are needed for a successful placement. Three out of four participants in the study indicated that they actively train clients on how to prepare for the recruitment process – writing CVs, preparing for job interviews and dealing with formalities. One participant noted: “*Most of the clients have no experience, so I teach them how to behave in a job interview, what information to give to the employer*” (SW3). Such training helps people with intellectual disabilities to acquire the necessary skills and to overcome their fears of the recruitment process. Motivation and mediation are important functions to help clients overcome their doubts and succeed in employment. One participant stated: “*My job is to motivate clients to believe in their possibilities and not to be afraid to try*” (SW5). The mediation function, which involves working with employers and representing clients’ interests, is essential to ensure a smooth process. Another participant stressed: “*I mediate between the client and the employer, helping to find a joint solution that satisfies both parties*” (SW2). This activity not only

facilitates the integration of clients but also builds trust with employers. The diversity of social workers' roles reflects their ability to adapt to clients' individual needs and complex situations. Information, counselling and training provide clients with knowledge and skills, motivation promotes self-confidence and mediation ensures effective cooperation between employers and clients. One participant summarised: *"These functions are complementary and allow for the best outcome for both client and employer"* (SW2). Social workers' activities in the recruitment process are multifaceted and require different competences. The results of the study show that their work includes case management, information, training, counselling, motivation and mediation. These activities not only help people with intellectual disabilities to improve their employability, but also promote their social integration and independence. According to one participant, *"each person is unique and we aim to tailor the support plan to individual needs"* (SW5). Another participant noted that *"the training is important not only to develop work skills but also to develop social communication"* (SW2). A participant highlighted the importance of emotional support, stating, *"Often they need to be encouraged and shown that they can overcome their fears – this is a big part of our work"* (SW3). A fourth participant highlighted the importance of mediation, stating, *"We are the bridge between the person and the employer – it is our job to make sure that both sides understand and support each other"* (SW4), and *"it is important to help people to discover their strengths and to show them how they can apply them to the labour market"* (SW2). Implementing these functions not only increases the employability of people with intellectual disabilities, but also contributes to their social integration and empowerment. Such a systematic and personalised approach ensures that the employment process is not only effective but also sustainable, creating sustainable opportunities for integration into the labour market.

The social worker's activity in the process of vocational choice is inextricably linked to the analysis of clients' needs and opportunities, their familiarisation with the realities of the labour market, and vocational guidance. The study shows that social workers play a key role not only in providing information, but also in designing personalised support methods to help clients find the right career.

Participants' responses reveal a wide range of support, from practical skills training to long-term support in the workplace. Participants emphasise that social workers help clients to develop practical skills through specially organised group and individual activities. One participant shared: "*What kind of help... Well, like with me... Well, the cooking group... And through individual, vocational interviews, guidance... We were looking, we were clarifying*" (SW1). This quote shows that vocational guidance is not only a theoretical but also a practical process that allows clients to try out different activities and find out their strengths.

Social workers also introduce clients to possible careers and labour market requirements. One participant in the study noted, "*Well, it was, when you were choosing a profession, it was also to be introduced to... Clients were introduced to the professions on offer in the labour market through individual and group vocational guidance sessions*" (SW5). These sessions provide clients with knowledge about possible career paths and help them to assess which ones match their skills and interests.

Psychological support is another important form of help from a social worker. Workers try to give clients a sense of security, ensuring that they are not left alone when it comes to choosing a career or finding a job. One participant noted: "*Another thing is that first of all, when I called them myself, I used to talk and tell them that they will never be alone, that they will be together, that they will be accompanied by a job coach at the beginning of the placement*" (SW2). This statement shows that social workers not only provide information, but also moral support that makes clients feel confident about their options.

The process of choosing a career goes hand in hand with individual interviews in which social workers help clients to identify their interests and assess their options. This personalised approach allows clients to create a clear career path. One participant highlighted: "*We talked about their interests, their wishes, what they would like. And this helped them to make a clear decision about which profession suited them best*" (SW4). Such discussions encourage self-reflection and motivate clients to achieve their professional goals. Social workers actively contribute not only to career choices but also to the labour market. They help clients to

prepare for job interviews, to develop a professional image and to organise documentation. One of the participants in the study mentioned: *“Employers needed to show that clients can be responsible employees and we proved it together with the client through several practices”* (S5). This mediating role ensures that clients and employers can achieve mutual trust and cooperation. The social worker’s support in the process of vocational choice is multifaceted and includes practical skills training, psychological support, career guidance and placement in the labour market. The responses of the participants in the study show that this process is based on the principle of individualisation, which results in the development of a unique vocational guidance plan for each client. In addition to providing information, social workers provide moral support and practical solutions that enable clients to gain confidence and confidently pursue their professional goals. This approach contributes to the successful integration of clients into the labour market and their self-fulfilment.

The support of a social worker is crucial not only in the recruitment process, but also once you are employed, when new challenges arise in the workplace or in adapting to a new environment. The survey participants’ responses reveal three main areas of social worker support needed by people with disabilities: job assistance, emotional support and counselling.

People with disabilities often face difficulties adjusting to their new routine once they start working, which is why a job coach is one of the most important forms of support. Participants in the study stressed that physical accompaniment to the workplace is essential for many clients. One participant noted: *“What they need most is an escort to accompany them to and from the workplace”* (SW1). This service not only helps clients to reach the workplace, but also ensures their well-being by reducing the fear of the unknown. Other participants added that the role of the social worker is to show clients how to reach the workplace independently. As one participant stated, *“They really need someone to walk them to the workplace, to show them how to get there”* (SW2). Another participant added: *“I think they need someone to walk them to the workplace at the beginning”* (SW5). Such a start not only facilitates the adjustment of individuals but also promotes their independence.

Emotional support is another important function of a social worker, ensuring that clients feel listened to and understood. Participants in the study highlighted the importance of giving people with disabilities the opportunity to express themselves and receive moral support. One participant said: *“They really need support from us. They come in the evenings to talk, we have to reassure them”* (SW4). Another participant confirmed the importance of support: *“The most important thing for them is support, for us to listen, to reassure, to encourage them”* (SW3). Emotional support gives clients confidence and encourages them to face challenges in the workplace. Social worker support also helps clients to maintain stability in emotionally difficult situations. Counselling services for people with disabilities who have entered employment include advice and practical support in the workplace when problems arise. Participants in the study noted that clients often turn to counselling. One participant shared: *“I would come to consult, to ask for advice”* (SW1). Another participant added: *“They will want advice, advice from us on how to deal with different situations in the workplace”* (SW4). These consultations are mostly related to specific work challenges that clients experience in a new team or in their tasks. One participant highlighted: *“We will also need counselling so that we can advise someone on work issues”* (SW3). Such counselling provides clients with the necessary knowledge to solve problems on their own.

Conclusions

The support of a social worker is not only desirable, but also essential for the successful integration of people with disabilities into the labour market. The job coach service helps clients to reach the workplace independently and reduces their fear of the new routine. Emotional support ensures that clients feel listened to, understood and emotionally stable, while counselling provides them with practical knowledge and confidence to deal with workplace challenges. The participants in the study made it clear that these three areas of support are essential to ensure that people with disabilities can not only survive in the labour market, but also participate fully in it.

The results of the study show that social workers play an essential role in the integration of people with disabilities, especially in the context of their employment and social inclusion. Social workers' activities are complex, involving individual needs assessment,

vocational guidance, emotional support and long-term counselling in the workplace. These functions address the main challenges faced by people with disabilities in the labour market: social stigma, job maladjustment, lack of self-confidence and need for social support.

One of the key findings of the study is the value of the job coach service. This service ensures that people with disabilities feel supported and safe during their first weeks of work and provides the necessary support to adapt to a new working environment. The escort service also helps to reduce social isolation, builds the confidence of disabled people and contributes to their long-term motivation to keep their job.

Emotional support, highlighted in the survey responses, is also vital for the well-being of people with disabilities. Support from social workers not only builds clients' self-confidence, but also helps them to deal with day-to-day problems in the workplace, promotes their involvement in collective work and builds more sustainable relationships with colleagues.

Social workers play an important role in mediating between people with disabilities and employers, ensuring that workplaces are accessible and that the expectations of both sides are balanced. They also advise clients on the challenges they face in their day-to-day work activities, providing advice and practical solutions to help people with disabilities solve problems independently.

Vocational guidance sessions, including practical skills training and information provision, strengthen clients' labour market readiness and increase their motivation to achieve their career goals. These activities not only improve the skills of people with disabilities, but also increase their self-confidence and their ability to deal with challenges independently.

However, key integration challenges such as social stigma, job insecurity and gaps in vocational rehabilitation remain crucial factors that require a systemic solution. Decentralisation of social services, increasing accessibility and investment in infrastructure are essential to strengthen the socio-economic integration of people with disabilities.

The effectiveness of social workers depends directly on public policy, which must ensure the right conditions for the provision of social services and the strengthening of the vocational rehabilitation system. Only a holistic approach, encompassing social, economic

and political dimensions, can ensure the sustainable social inclusion of people with disabilities and the improvement of their quality of life. Such a comprehensive framework not only enables the successful employment of people with disabilities, but also enables them to become full participants in society.

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**SUSTAINABLE DEVELOPMENT OF
INNOVATION-ORIENTED SOCIO-
ECONOMIC AND ECOLOGICAL
SYSTEMS**

Miglė Černikováitė

ORCID: <https://orcid.org/0000-0002-8307-3242>

PhD in Economics, Associate Professor

Daiva Lunienė

ORCID: <https://orcid.org/0009-0004-9913-0530>

SMK Colledge of Applied Sciences
(Vilnius, Lithuania)

**ANALYSIS OF
START-UP
ECOSYSTEMS:
CHALLENGES AND
OPPORTUNITIES IN
LITHUANIA**

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Abstract

Lithuania's start-up sector has been growing dynamically in recent years, with more than 800 start-ups in operation, mostly focused on financial technology, information technology and biotechnology. Startups contribute to economic growth and to solving social problems, but face serious challenges. Difficulties in attracting venture capital, barriers to the development of technological innovation and an insufficient regulatory environment hamper their growth. Researchers note that innovation policies often do not provide the long-term strategy needed for a sustainable start-up ecosystem. (Sävbrandt, 2018). Limited sources of funding, especially in the early stages of development, make international expansion even more difficult. While the growth of Lithuanian start-ups has been positive, there is a need to strengthen the infrastructure to foster innovation and attract talent. The aim of the study is to analyse the main challenges and opportunities facing the startup ecosystem in Lithuania using scientific literature analysis. This topic is relevant at both national and international level to improve the success and competitiveness of startups.

Keywords: *startups; innovation, startup ecosystem; challenges; funding.*

Introduction

Relevance. The start-up ecosystem plays an important role in today's economy, stimulating innovation, creating new jobs and increasing economic competitiveness. Startups not only contribute to the country's economic growth, but also to solving social and technological problems. Lithuania's start-up sector has been growing rapidly in recent years. According to the Startup Lithuania (2023) report, there are already more than 800 startups operating in the country, most of which are concentrated in areas such as financial technology (fintech), information and communication technology (ICT), biotechnology and other high-tech sectors.

Jakubavičius and Gaidelytė (2021) point out that although the start-up sector in Lithuania is active and innovative, there are still problems related to attracting venture capital, developing technological innovations, and creating the right regulatory environment. These challenges are exacerbated by intensifying international competition and rising investor expectations. Studies show that start-ups often face insufficient funding and access to venture capital. Mockevičius (2021) observes that current innovation policy in Lithuania is focused on stimulating certain sectors, but often lacks a long-term strategy to create a sustainable start-up ecosystem. Meanwhile, Vaitkūnaitė and Petrauskienė (2022) point out that Lithuanian start-ups face limited sources of funding, especially at an early stage of development, which limits their ability to grow and expand in international markets. According to the Global Startup Ecosystem Report (2023), the growth of Lithuanian startups is positive, but the success of the ecosystem requires a stronger infrastructure to foster innovation, attract talent and ensure an efficient business environment. This makes this topic of particular importance at both national and international level.

Research problem. The growth of the Lithuanian start-up ecosystem raises a number of questions for both researchers and policy makers. Although the ecosystem is developing rapidly, it is not entirely clear what factors contribute most to the success of startups in Lithuania. What are the main challenges and opportunities facing the Lithuanian start-up ecosystem?

The aim of this paper is to analyse the main challenges and opportunities for the development of Lithuanian start-up ecosystems.

Research methods: analysis, systematisation and structuring of scientific literature.

Literature review

1. Theoretical foundations of start-up ecosystems

While industries such as oil, metallurgy and machinery manufacturing played a crucial role in the economy in the 19th and 20th centuries, today business success increasingly depends on knowledge and innovation. Startups are innovative companies that seek to grow rapidly and establish themselves in the market by relying on new business models and technologies.

The success of start-ups is inextricably linked to the ecosystem in which they operate. The startup ecosystem includes a wide range of actors, from government institutions and universities to venture capital funds and business incubators, which create the right conditions for innovation, funding and growth. This ecosystem acts as a complex mechanism of interaction, ensuring resource sharing, collaboration and diffusion of innovation (Menshikov and Volkova, 2016).

Startups are becoming an increasingly important part of the market infrastructure, and smaller companies can compete with larger ones by using intellectual property. It is essential to analyse the development processes of start-ups and their transformation into successful businesses in order to develop practical recommendations for start-up initiatives (Sävbrandt, 2018).

The various organisations and individuals that interact with each other and influence a start-up's activities form the start-up ecosystem. The startup ecosystem is a complex and multifaceted mechanism of interactions between structures, organisations and people that create the conditions for the creation, development and success of startups (Table 4.1).

Entrepreneurs are key players in the ecosystem, generating innovation and seeking to bring new ideas to market. Successful entrepreneurs need to be able to adapt quickly to market needs, apply innovative business models and effectively leverage resources through networking. Investors, in particular business angels and

Table 4.1

Elements of a start-up ecosystem

Item	Function	Examples
Funding	Funding is an essential resource for startups, providing capital to develop ideas, build products and grow. This is may include investments from venture capital funds, business angels or government programmes.	Practica Capital, Nextury Ventures, EU structural funds, Invega programmes.
Human capital	Highly skilled workers - from software developers to marketers - are essential for the success of start-ups. Human capital gives start-ups the competences they need to innovate.	IT specialists, data scientists, marketers, technical engineers.
Support system	Support systems - business incubators, accelerators, mentoring programmes - provide initial support to help start-ups grow and develop their business and find partners and funding.	Startup Lithuania, TechHub, accelerators (e.g. Startup Wise Guys), “Swarm”.
Availability of markets	Startups need access to local and international markets to test and sell their products, expand their consumer base and connect with international partners.	European Union market, international exhibitions and conferences (e.g. Web Summit).
Universities	Universities act as centres of innovation and research, nurturing talent and contributing to the development of new technologies. They also work closely with business, promoting research.	Vilnius University, Kaunas University of Technology, MITA.
Education and qualifications	The education system and professional development programmes help to develop professionals who can innovate in start-ups. Skills development also ensures the competence of employees.	Marketing, technology and business schools such as ISM, LSMU training, technology programmes.
Legal environment	A supportive legal environment, including business regulation, intellectual property protection and tax issues, giving start-ups the flexibility and security they need to develop their business.	LRCK, tax incentives for startups, Startup Visa.
Culture	An entrepreneurial culture that fosters innovation, risk-taking and creativity is essential to the success of start-ups. This includes community events and platforms that foster entrepreneurial spirit.	Startup Week Vilnius, TechHub community initiatives.

Source: compiled by the author based on Kotch, 2017; Brown, Mason, 2017

venture capital funds, provide financial support in the early stages of a start-up's development (Jakubavičius, Gaidelytė, 2021).

Government initiatives and support mechanisms, such as Startup Lithuania and other innovation hubs, are essential for startups to grow and implement their ideas. These institutions provide advice, guidance and funding to encourage business development. Research and innovation play an important role in providing start-ups with new technologies and innovations (Mockevičius, 2021). Universities and researchers often collaborate with start-ups to conduct joint research and develop new products. Academia is an essential component of the startup ecosystem as it provides the necessary knowledge and resources (Kvedaravičius, Urbonavičius, 2023).

2. Legal environment and funding for start-ups

The creation and operation of Lithuanian start-ups is regulated by both international and national legislation, as well as by strategic documents that define the conditions for business start-ups, their operation, financing and innovation promotion. These documents provide a legal framework that ensures a favourable environment for start-ups, innovation.



Figure 4.1 Documents regulating start-ups

European Union legislation is one of the most important international regulatory instruments affecting start-ups in Lithuania. For example, the European Union's Single Market gives Lithuanian startups the opportunity to operate freely throughout the EU, to benefit from the Common Market Area and the free movement of services. In addition, intellectual property protection directives, such as the 2004/48/EC Intellectual Property Rights Enforcement Directive, regulate the protection of intellectual property, protecting technologies, ideas and trademarks developed by startups. This is particularly important for technology companies working in innovative fields and developing original solutions. The availability of investment enables start-ups to innovate and develop, compete in markets and expand internationally. Nevertheless, lack of investment can be a barrier, which is why the development of venture capital funds in Lithuania is crucial for the success of start-ups. Also, technology development is one of the key drivers of startup growth. In Lithuania, the fintech sector is one of the fastest growing technology areas. Kriščiūnas and Jucevičius (2015) note that the fintech sector in Lithuania attracts a lot of investor attention due to its innovative financial technology solutions that are ahead of the global market needs. Startups operating in the fintech, AI and biotechnology sectors can compete not only in local but also in international markets. Mockevičius (2021) points out that the deployment of artificial intelligence (AI) technologies helps to optimise processes, reduce costs and create new, innovative products. This gives start-ups a competitive advantage and allows them to grow faster and expand into new markets.

Jakubavičius and Gaidelytė (2021) point out that government support for innovation is essential. Startups have access to tax incentives, EU funding and other support measures to encourage business development. In addition, the Lithuanian government is continuously improving the regulatory environment to make it more business and innovation friendly. Startups can obtain funding for their activities at different stages of their development from different sources (Figure 4.2).

In the idea phase, start-ups rely on a few key sources of funding, especially in the early stages. Once they have reached the point of creating a minimum viable product (MVP), startups can turn to

accelerators such as Startup Wise Guys. These accelerators offer funding of up to €100,000 in exchange for an equity stake, usually ranging between 3% and 8%. The benefits of accelerators go beyond financial support; they also provide training, mentoring and access to investor networks, which allow startups to grow and develop.

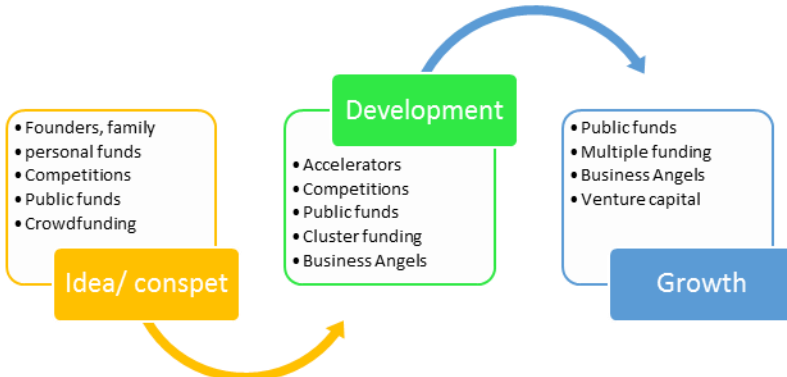


Figure 4.2 Startup funding at different stages of development

Source: compiled by the author, based on Startup Lithuania website data, 2024

In addition to accelerators, business angels, such as the Lithuanian Business Angel Network (LitBAN), also play an important role in the early-stage financing process. They invest in the early stages of a startup’s development, offering funding between €25,000 and €100,000 in exchange for an equity stake. In addition, business angels often provide valuable advice and contacts, which allows startups to get not only financial but also strategic support, especially when traditional funding sources such as banks are not available (Kuodis, 2019).

Once they reach a stage of growth and maturity, venture capital (VC) funds become essential investors. Funds such as Practica Capital can invest between €200,000 and €2 million, depending on the startup’s growth potential and scope. VC funds aim to finance high-growth companies, especially in the technology sector. Although the venture capital market in Lithuania is still nascent, it is growing rapidly, attracting more attention from international and local investors. Vaitkūnaitė and Petrauskienė (2022) note that although VC funds are not as widely available in Lithuania as in Silicon Valley or other startup hubs, initiatives such as Nextury

Ventures, Practica Capital and BaltCap are already providing significant support to startups, contributing to the development of the ecosystem.

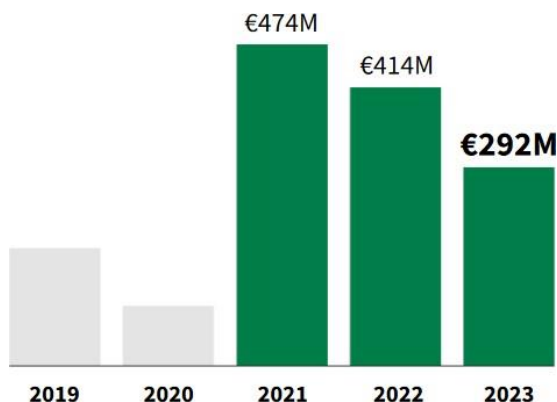


Figure 4.3 Venture capital fund investments in Lithuanian startups 2019-2023

Source: Startup Lithuania Lithuanian Startup Ecosystem Report, 2023

The figure shows the venture capital (VC) investments raised by Lithuanian startups in the period 2019-2023. In 2021, Lithuanian startups raised a record amount of EUR 474 million, but this dropped to EUR 414 million in 2022 and to EUR 292 million in 2023. In 2023, Lithuania ranked the second largest country in terms of VC investments in Central and Eastern Europe (CEE), as well as the second largest country in terms of per capita VC investments. The sectors with the highest share of VC funding were enterprise software, security and energy (Invest Lithuania, 2024).

3. Global and regional trends in start-up ecosystems

Startup ecosystems are constantly evolving in response to technological and economic changes. Jakubavičius and Gaidelytė (2021) identify the following key global and regional aspects of the development of startup ecosystems: the promotion of technological innovation, with the development of technological innovations such as artificial intelligence (AI), blockchain and fintech as one of the main trends. Kriščiūnas and Jucevičius (2015) note that these sectors

are growing rapidly not only globally, but also in Lithuania, where fintech start-ups are particularly active. Innovations in these sectors allow start-ups to expand in international markets (Figure 4.4).



Figure 4.4 Number of fintech companies operating in Lithuania 2014-2023

Source: compiled by the author, based on Invest Lithuania report, 2024

In 2023, there were more than 276 fintech companies operating in Lithuania, collectively employing more than 7 400 people. The sector specialises mainly in payments, blockchain technology, digital banking and regulatory technology (RegTech). Despite the global economic challenges, the sector has attracted significant investment and key players such as Payhawk and Hokodo, which are contributing to the sector’s continued growth. The growth reflects the sector’s ability to attract talent, especially technology and finance professionals who contribute to the development and improvement of innovative solutions (Invest Lithuania, 2024). With globalisation and internationalisation, more and more start-ups are looking to expand into international markets in the early stages of development. According to Startup Lithuania (2024), there were over 870 startups operating in Lithuania in 2023, the largest of which were Nord Security, PV Case, Vinted, Baltic Classifieds Group, Cast AI. In Lithuania, universities and research centres work closely with start-ups to attract and nurture talent. Kvedaravičius and Urbonavičius (2023) argue that Vilnius University and Kaunas University of Technology play an important role in nurturing technology talent,

which then joins startups. Startups compete for the best talent that can help innovate and develop new products. International talent attraction initiatives, such as the Startup Visa programme, allow Lithuanian startups to attract professionals from abroad.

However, Lithuanian start-ups face various challenges. One of the most important factors hindering the growth of startups is limited funding. While the above-mentioned sources of funding can be a good incentive for start-ups, there are different challenges in accessing support from each source (Table 4.2).

Table 4.2

Startup funding challenges

Source of funding	Examples	Challenges
Venture capital funds	Nextury Ventures, Practica Capital	Limited access, competition for capital
Business angels	LitBAN (Lithuanian Business Angel Network)	Limited amount of investment
State support	Invega, Startup Lithuania	Bureaucracy, lengthy approval procedures
EU structural funds	European Investment Fund	Complex application procedures

Source: compiled by author

Government support, such as loans and guarantees from Invega, is essential for start-ups seeking funding, but support processes are often long and complex. The EU Structural Funds provide financial support for innovation, but smaller start-ups often do not have the resources to complete complex application processes (Mockeviius, 2021).

Lack of funding limits the implementation of new ideas, especially in the early stages of a business when large investments are required (Menshikov, Belugina, 2017). Startups depend on skilled workers to grow and innovate, but lack of talent leads to slower growth and lower competitiveness. While incubators and accelerators exist in Vilnius, the lack of such infrastructure in the regions limits development (Bivainis, Šinkūnaitė, 2020).

Lithuanian start-ups should aim for international expansion, but there is a lack of financial and strategic partners (Vaitkūnaitė, Petrauskienė, 2022). Building international relationships and

partnerships with foreign accelerators would help to enter markets faster. Regulatory mechanisms need to be clearer and faster to facilitate innovation (Kriščiūnas, Jucevičius, 2015).

Lithuanian start-ups face challenges such as lack of funding, talent shortage and bureaucratic processes. Public-private cooperation is essential to foster innovation and increase competitiveness. Encouraging the development of venture capital, improving infrastructure and improving the regulatory environment are needed to strengthen the startup ecosystem. Such an approach would help Lithuanian start-ups to become globally competitive and innovative.

Conclusions

Lithuania's start-up sector is showing rapid growth and dynamism, with more than 800 start-ups in operation, mainly concentrated in financial technology, information technology and biotechnology. This ecosystem not only contributes to economic growth, but also helps to address social and technological challenges, strengthening the country's competitiveness in the international market.

Despite the positive growth, Lithuanian start-ups face significant challenges such as limited availability of venture capital, bureaucratic processes and lack of skilled staff. These factors limit the ability of startups to expand and compete internationally. In order to build a sustainable and successful start-up ecosystem, it is essential to address these challenges and to ensure the right funding, infrastructure and regulatory environment.

Support measures initiated by the Lithuanian government and institutions, such as tax incentives and EU funding, are essential for the growth of start-ups and innovation. Only intensive public-private cooperation can ensure the long-term development of the start-up ecosystem and its competitiveness in the global market.

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Janina Čižikienė
ORCID: <https://orcid.org/0000-0002-5590-5398>
PhD in Management
Kaunas University of Technology
(Kaunas, Lithuania)

**THE IMPACT OF
SOCIAL INNOVATIONS
ON HUMAN RESOURCE
MANAGEMENT IN AN
ORGANIZATION**

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Abstract

Modern organizations operate in a constantly changing and dynamic environment, where it is necessary not only to manage resources effectively but also to promote innovation and adapt to the needs of society. Human resource management is inseparable from social innovation, which is becoming an essential aspect of the activities of modern organizations. Management includes the organization of both social groups and processes. Social innovation is an innovation that solves social challenges and, at the same time, promotes organizational efficiency. The importance of social innovation is particularly evident in human resource management, which includes not only optimizing the organization's activities but also strengthening the well-being of employees and social responsibility. An organization that implements changes to improve the well-being of employees contributes to creating a sustainable community. The management concept allows managers to form sustainable relationships with employees, considering their values and personal needs. This reflects the essence of modern social innovation – to involve employees in the decision-making process and promote their involvement in achieving organizational goals while ensuring social impact in the organization and the community.

The article aims to analyze how social innovations can contribute to human resource management in organizations, increasing employee motivation, improving the work environment, and promoting the organization's long-term competitiveness.

Keywords: *innovation; social innovation; human resources; human resource management.*

Introduction

Social innovation has become one of the most important areas of organizational improvement in recent years, aiming to address internal and external challenges related to employee motivation, organizational culture, and societal well-being (Borzaga, Bodini, 2014; Aksoy et al., 2019; Bertello et al., 2024). Human resource management is a strategic organizational function responsible not only for employee selection, training, and productivity, but also for ensuring their engagement, job satisfaction, and long-term well-being (Boxall, Purcell, 2022). Social innovation can become an essential tool allowing human resource management to understand and address contemporary challenges while creating value for the organization and society (Aksoy et al., 2019; Oeij et al., 2019; Klimovskikh et al., 2023). The concept of social innovation encompasses new solutions and practices that promote social change and improve the overall employee experience in an organization (Klimovskikh et al., 2023). These innovations range from flexible work models to employee involvement in sustainable projects (Khosravi et al., 2019). The importance of such initiatives stems not only from their impact on labor productivity, but also from their potential to create added value, reduce social exclusion, and strengthen the organization's connection with society (Castellacci, 2023).

This article aims to analyze the impact of social innovations on human resource management in organizations and to reveal how these innovations can contribute to increasing employee engagement, motivation, and organizational sustainability. Social innovations are a strategic choice that can significantly affect the competitiveness, culture, and long-term effectiveness of an organization (Bertello et al., 2024). This article aims to discuss the impact of social innovations on modern human resource management, which can help organizations respond more effectively to the changing needs of employees and society.

Human resource management in organizations

Human resource management is an essential part of an organization's operations, which has a direct impact on its competitiveness and sustainability (Saks, 2022). A strategic and

innovative approach to employees helps not only optimize operations but also create long-term advantages. By integrating employee competencies and motivation into the organization's strategy, human resource management becomes a main success factor in a constantly changing labor market. Human resource management is a systematic and coordinated process, the purpose of which is to integrate and harmonize various employee management functions in an organization (Boxall, Purcell, 2022; Margherrita, 2022). Although many researchers analyze the elements of the human resource management system, it is essential to distinguish between the processes of human resource management and their interaction. The main components of the HRM system include: planning, selection, and recruitment of employees, formalization and management of employment relations, employee performance evaluation, development, motivation, remuneration system, career planning, and termination of employment relations (Mathis et al., 2017; Mone et al., 2018). These elements are closely interconnected and must be planned and coordinated in an integrated manner. Their common goal is to ensure that employees, as the main link of the organization, can effectively perform their functions, which are defined in job descriptions and organizational structure (Storey et al., 2019; Lee, 2021). When examining the systemic approach to HRM, researchers emphasize that all activities have a common connecting link - the employee. Employees are the main asset of the organization (Sun, Bunchapattanasakda, 2019). Therefore, their management activities must be integrated into a unified system that would cover all aspects of human resource management – from employee selection and development to motivation and performance evaluation. A properly structured system ensures transparency of activities and maintains employee productivity, loyalty, and engagement (Truss et al., 2013). An integrated approach to employee management promotes the organization's ability to adapt to changing market conditions, increases organizational flexibility, and helps to implement strategic goals. In addition, an integrated system creates opportunities for effective planning of the organization's human resource needs, ensures consistent communication, and supports a strong organizational culture (Mone et al., 2018). This process is crucial for creating shared value, where employees' competencies and

commitments become a sustainable competitive advantage (Boxall, Purcell, 2022). To maximize this benefit, it is necessary to regularly review and adapt the system, taking into account technological innovations, labor market changes, and internal organizational needs. Such an integrated approach allows the creation of a work environment in which employees feel meaningful, motivated, and involved in the implementation of organizational goals (Margherita, 2022). The result is a more effective organization, able not only to exploit the potential of its employees but also to ensure long-term sustainability. In addition, the impact of technology and globalization requires that the functions of the HRM are carried out not only efficiently, but also dynamically, taking into account the changing needs of the organization (Saks, 2022). A strategic approach to HRM allows you to combine these aspects to maximize the potential of employees and the capabilities of the organization (Boudreau, Cascio, 2017; Margherita, 2022).

It is necessary to emphasize that Human Resource Management is one of the main functions of the organization, as it directly influences the organization's ability to achieve strategic goals, increase operational efficiency, and maintain competitiveness. In modern management literature, HRM is viewed not only as an administrative activity but also as a strategic tool that aligns organizational goals with employee motivation, competencies, and potential (Ulrich et al., 2017; Storey et al., 2019). Successfully implemented HRM helps efficiently use the organization's human resources and creates a sustainable competitive advantage based on employee engagement, creativity, and loyalty. It involves a strategic and systematic approach to employee management that seeks to maximize their contribution to the organization's activities. HRM is a comprehensive set of policies, projects, and practices focused on shaping employee behavior, developing competencies, and strengthening their commitment (Khosravi et al., 2019; Lee, 2021). These activities include attracting, developing, motivating, evaluating, and retaining employees. A properly designed HRM strategy allows employees to align their activities with the organization's mission and vision, strengthening the organization's competitive position (Boxall & Purcell, 2022). Strategic HRM ensures that employees are properly prepared and motivated to

achieve organizational goals. According to Becker and Huselid (2006), strategic HRM, combined with the organization's vision and goals, helps create long-term competitive advantage (Kaliannan et al., 2023). This approach emphasizes talent management, which includes attracting, developing, and retaining talented employees so that they can adapt to constant market changes; developing competencies through continuous training and development programs that strengthen employees' ability to contribute to organizational goals; improving work performance using properly constructed reward systems and performance appraisal methods. Employees who feel a strong connection with the organization are more likely to participate in decision-making processes and actively contribute to organizational goals. Saks (2006) states that employee engagement is closely related to job satisfaction, productivity, and loyalty to the organization. HRM plays an important role in creating motivational systems that promote intrinsic motivation through meaningful work and support open communication that allows employees to feel their contribution to the overall success of the organization (Blanka et al., 2022). Researchers argue that an organization's employees are the main source of competitive advantage because their competencies, creativity, and commitment are difficult to copy. Resource-based theory emphasizes that employees become strategic assets when their personal and professional knowledge and skills are unique (Kaliannan et al., 2023; Klimovskikh et al., 2023). Their contribution creates organizational differentiation in the market. Their potential is constantly developed and strengthened, so organizations that invest in creativity and innovation can create new ideas and respond faster to market changes (Acar et al., 2019). Employee well-being is an important dimension of HRM because healthy and motivated employees are more productive and loyal to the organization. Obschonka et al. (2022) emphasizes that employee well-being programs focus on improving physical, emotional, and social health, improving at the work atmosphere, and reducing burnout and employee turnover. Employee well-being and inclusion are among the most important aspects of modern organizational management, which directly impact employee productivity, loyalty, and organizational success. Well-being encompasses the components of physical, psychological, and

social health that help to ensure work-life balance, while inclusion focuses on the active participation of all employees in the organization's activities, regardless of their background, beliefs, or social status. These dimensions are integral to creating a strong organizational culture and a supportive work environment, in which employees feel valued and empowered to contribute to the organization's goals. Employee well-being is a complex concept that includes meeting employees' needs and strategies that ensure their physical health, emotional stability, and social inclusion. Sonnentag et al. (2022) argues that healthy and motivated employees are more productive and engaged at work.

Elements of employee well-being include physical health, which organizations promote through safe working conditions, wellness programs, and employee health care; psychological well-being, which is enhanced through emotional health counseling and work-related stress management strategies; and social well-being, which is promoted through collaborative culture and strengthening employee relationships. These initiatives increase employee productivity, reduce the risk of burnout, and strengthen their loyalty to the organization (Mone et al., 2018; Saks, 2022). Employee engagement, in turn, is closely related to employees' active participation in the organization's activities, decision-making, and value creation. Inclusion ensures that all employees, regardless of their social or demographic differences, feel valued and have the opportunity to contribute to the achievement of the organization's goals. The main dimensions of inclusion include equal opportunities, diversity appreciation, and a culture of collaboration. These initiatives not only strengthen employees' connection to the organization but also encourage creativity, innovation, and enable complex problem-solving (blanka et al., 2022). Organizations seek to strengthen employee well-being and inclusion through various strategies, such as wellness programs that promote physical health through sports activities, seminars, flexible work schedules, and psychological support initiatives that include employee counseling and stress management training. Inclusion programs, such as mentoring and leadership development initiatives, and social responsibility projects, also help strengthen employees' connection to the organization and create a meaningful work environment. Research shows that these

initiatives impact organizational performance by increasing productivity, reducing employee turnover, fostering innovation, and improving organizational reputation (Storey et al., 2019; Sun, Bunchapattanasakda, 2019). Despite these benefits, organizations face challenges when implementing employee well-being and engagement initiatives, such as cultural barriers, lack of resources, and lack of leadership support. These challenges can be addressed through appropriate strategies that include leadership training, ongoing employee engagement assessments, and transparent communication. In summary, employee well-being and engagement are essential for modern organizations seeking to achieve sustainable growth, productivity, and competitiveness. By focusing on these aspects, organizations can improve employee satisfaction and ensure long-term success in a dynamic market environment.

Innovativeness of human resource management from the perspective of social innovation

Innovative human resource management is a strategic management direction of modern organizations that focuses on developing employee potential, optimizing work processes, and increasing organizational flexibility. This concept includes the application of new technologies, implementing creative management solutions, and involving employees in the organization's strategic processes. Such practices allow organizations to adapt to rapidly changing challenges and create a competitive advantage based on increasing employee competencies, engagement, and creativity (Ulrich et al., 2017; Mathis et al., 2017). Innovation in human resource management can be defined as the implementation of new or significantly improved personnel management practices, processes, or forms of work organization that lead to a qualitative change in the organization's activities. These innovations require strategic thinking, as they aim not only to meet the current needs of the organization but also to create sustainable long-term competitive advantage (Boudreau, Cascio, 2017).

Innovation in human resource management encompasses several essential dimensions. New practices or solutions are considered innovations only if they are significant and bring about fundamental changes in the activities of the organization. However, continuous

but minor process improvements are usually not classified as innovations due to their lack of uniqueness (Stone et al., 2015). The implementation of innovations in organizations is also an important criterion because creative ideas must be implemented in practice to become real benefits for the organization. Only innovations that have been applied in practice and have affected organizational activities can be considered true innovations. In addition, innovations must create added value for both the organization and its employees. They can improve human resource management processes, for example, by increasing operational efficiency or reducing employee turnover, and contribute to the implementation of the organization's strategic goals (Saks, 2020). It is important to note that innovation management often faces the challenge of fragmentation. This fragmentation manifests itself in the fact that individual human resource management decisions may not be aligned with the overall organizational strategy, which can lead to a lack of operational integrity and reduce innovation efficiency. To continuously improve operations, the effectiveness of innovation management directly depends on the organization's ability to integrate new practices into the overall operational strategy, ensuring learning processes and systematic error analysis (Amabile, 2018; Green et al., 2024; Sawyer, Henriksen, 2024).

Innovations in human resource management can be divided into several categories based on their purpose and objectives. One category is mission-oriented innovations, which pursue long-term strategic goals even when there is uncertainty about the means to achieve them. These innovations often use design thinking principles, collaborative networks, and innovation portfolio management. Another category is adaptive innovations, which focus on the organization's ability to respond quickly to changes and operate effectively during them. Such innovations are often based on consumer behavior research, insights from behavioral science, or participatory design principles (Truss et al., 2013).

For effective implementation of innovations in human resource management, it is necessary to apply innovation management principles, such as innovation portfolio management, which allows for strategic alignment of different innovations according to their objectives and ensures compatibility with the strategic priorities of

the organization. It is also important to ensure the consistent integration of innovations into the organization's activities, avoid fragmentation, and create a strong learning culture in which mistakes become a source of new knowledge and processes are constantly improved (Bakker, Demerouti, 2008). Innovative human resource management is a powerful tool that allows organizations to achieve not only operational efficiency but also distinctiveness in the market, ensuring long-term competitive success.

Innovations in human resource management can be classified into several categories, depending on their goals and purpose in organizations. One of the main categories includes mission-oriented innovations, the main goal of which is the achievement of long-term strategic results, even in the face of uncertainty about the means of their implementation. This type of innovation is characterized by the application of design thinking methods, collaborative networks, and innovation portfolio management principles, which allow for strategic focus and flexibility (Brown, 2009; Birkinshaw et al., 2008; Khosravi et al., 2019). Another significant category is adaptive innovations, focused on the ability of organizations to respond quickly to changes and effectively adapt to new environmental conditions. These innovations are usually based on consumer behavior analyses, insights from behavioral sciences, and participatory design principles, which strengthen the organization's flexibility and ability to make decisions in complex situations (Mone et al., 2018; Blanka et al., 2022).

Effective implementation of innovations in human resource management requires consistent application of innovation management principles. One such principle is innovation portfolio management, which allows for a structured combination of different types of innovations, ensuring their compatibility with the organization's strategic priorities and optimizing the allocation of available resources. This approach promotes not only the efficiency of innovations but also their impact on the overall results of the organization (Martinsuo, Geraldi, 2020). It is also crucial to ensure the integration of innovations into the overall system of the organization's activities, avoiding fragmentation and isolation between different areas of innovation. Promoting a learning culture, in which mistakes are viewed as opportunities for improvement,

creates conditions for systematic improvement of processes and increases the efficiency of innovations (Bakker, Demerouti, 2008; Sun, Bunchapattanasakda, 2019).

Innovative human resource management is particularly important for achieving organizational efficiency and competitive advantage in the market. This management approach not only allows organizations to flexibly adapt to changing external conditions but also helps to distinguish themselves in the market through employee creativity, involvement, and effective resource management. Systematic innovation management, which includes both strategic planning and effective process improvement, ensures that organizations will be able to adapt to changes and actively shape them, ensuring long-term success in the global market (Tidd, Bessant, 2020; Christensen et al., 2015).

Social innovations, as new and significant social practices, processes, or methods, are an important direction of modern organizational management, focused on solving societal and organizational challenges based on the principles of sustainability, inclusiveness, and social responsibility. They are becoming increasingly significant in the field of human resource management, as they allow solving issues of employee well-being, motivation, inclusion, and efficiency. Phills, Deiglmeier, and Miller (2008) define social innovations as new practices or solutions that create added value both within the organization and in the wider social context. They are often associated with promoting diversity, improving employee health, and organizational social responsibility. These innovations also enable organizations to become more attractive in the labor market and enhance employee engagement (Phillips et al., 2015; Oeij et al., 2019). According to Howaldt and Schwarz (2010), social innovations help improve working conditions by implementing flexible work schedules, psychological well-being programs, and digital solutions such as staff well-being monitoring tools that increase employee satisfaction, productivity, and loyalty. Social innovations also play an important role in promoting diversity and inclusion in organizations, ensuring that all employees are given equal opportunities, and implementing training to reduce bias or implement community projects (Aksoy et al., 2019). In addition, these innovations help to create a strong organizational culture based

on collaboration, employee participation, and community ties, increasing employee satisfaction and engagement in the organization. Despite the obvious advantages, the implementation of social innovations in the field of human resource management faces certain challenges. One of the main challenges is the lack of resources, as the implementation of social innovations requires additional financial and human resources. Cultural barriers are also often encountered when traditional organizational cultures slow down the implementation of innovations due to the need to switch to a more flexible and employee-oriented approach. In addition, the complexity of measuring the results of social innovations arises from the fact that their impact is often long-term and not easily assessed by traditional performance indicators (Murray, et al., 2010; Bertello, 2024). Despite these challenges, social innovation offers organizations the opportunity to create a sustainable and socially responsible environment. When implementing such innovations, organizations can use various tools, such as social responsibility programs, employee engagement surveys, and flexible working solutions. Social innovation is an important instrument that allows organizations not only to solve social and organizational challenges but also to create a long-term competitive advantage. According to Borzaga and Bodini (2014), organizations that actively apply social innovation in the field of human resource management contribute to improving employee well-being, strengthen inclusion, and help organizations become more attractive in the labor market. Although the implementation of social innovation faces certain challenges, its potential to strengthen organizational performance and promote social responsibility is undeniable. Organizations that include social innovation in their strategies not only improve their performance but also actively contribute to the well-being of society.

Materials and Methods

A qualitative research strategy was chosen to reveal the impact of innovations on human resource management in an organization. This methodological approach is applied to analyze topics that are still poorly researched and aims to discover new ideas and perspectives that can contribute to more effective organization of activities and the implementation of set goals. The data collected during the qualitative research is analyzed through the experiences and

meanings of the subjects. The latter makes it possible to identify essential categories, subcategories, and their mutual relationships. This type of analysis allows you to delve deeper into the object of research, revealing subtle trends and specific features that often remain unnoticed in quantitative research. This method helps to form a more detailed and structured understanding of the research results. Based on the conclusions of the qualitative research, it is possible to provide reasonable and implementable recommendations that meet the needs of the organization and the goals of human resource management innovations.

The qualitative study was conducted using a semi-structured interview method, interviewing employees of social service organizations responsible for human resources. This method allowed for a deeper analysis of the research topic, revealing its essence and identifying unexpected, previously unidentified aspects. During the semi-structured interview, detailed information about the problem under study was collected using the opinions, knowledge, and practical experience of the research participants. The aim was to obtain diverse insights into the same phenomenon, thus ensuring the content and reliability of the data interpretation (Creswell, Creswell, 2017). Employees of the human resource management process were selected as informants due to their expert knowledge and long-term experience in the field of human resource management. This target group allowed for the disclosure of deep insights into the specifics of the application of innovations and challenges in human resource management processes in organizations. The semi-structured interview form ensured scientific objectivity, creating conditions for a detailed analysis of the opinions and assessments of specialists. In this way, detailed data was collected on the characteristics of the application of innovations in the organization, their impact, and related factors.

The object of the study is the application of innovations in the human resource management process.

The purpose of the study is to determine and assess the impact of innovations on successful human resource management in an organization. The tasks of the empirical study are 1) to survey the opinions of employees responsible for human resource management in an organization, which would help determine the possibilities of

applying innovations when working with human resource management in organizations; 2) to assess the assumptions determining innovations in human resource management in an organization. Problem Questions:

What are the characteristics of innovation provision in the human resource management process? What is the impact of innovation on an organization? What challenges are encountered in implementing human resource innovations in an organization?

The study was conducted using a semi-structured interview method, interviewing five employees responsible for personnel management. The criteria for selecting informants were work experience in the field of human resources management for at least three years. Respondents were informed about the course of the study, its objectives, and ethical aspects. The importance of data confidentiality was emphasized, and it was ensured that the presented results would not reveal the identity of the respondents. The data obtained in the study was analyzed following the ethical principles of scientific research. It is important to note that the study was conducted in only one county of the Republic of Lithuania. Therefore, results may not fully reflect the situation in other regions or organizations. In addition, the data provided are preliminary – to obtain a more detailed and reliable assessment of the situation, additional, larger-scale quantitative studies should be conducted. Despite these limitations, the study provides important insights that may be valuable for further scientific and practical research.

Results and Discussion

The assumptions of human resource management (HRM) innovation that emerged during the study emphasize that modern organizations that focus on implementing innovations view employees not only as a workforce but as individual personalities with specific needs and unique abilities. This approach marks a paradigm shift in HRM practice. Organizations not only pursue business goals but also include employee well-being and interests in strategic management processes. This reveals a new approach in which an employee's professional and personal life are closely linked, and the organization seeks to ensure harmony between these spheres. The first highlighted direction is the blurring of boundaries

between an employee's professional and personal activities. Modern organizations increasingly take responsibility not only for the work environment but also for the well-being of the employees at home, including family well-being, quality of personal life, and general well-being. Informant [SW_3] observes that this change in organizations *"disappears the boundary between the employee at work and the employee at home"*, and employers care about employees as complete individuals who contribute their emotional and physical well-being to work efficiency. The second direction emphasizes the organization's responsibility for the employee's emotional and physical health and the resolution of personal challenges. Organizations strive to create an environment where employees feel needed not only for the work they do but also for their contributions. Informant [SW_2] notes that *"investments in the emotional aspects of employees, their well-being and personal well-being are important to ensure a long-term relationship between the organization and the employee"*. In this context, innovative HRM includes measures that not only increase productivity but also strengthen employee satisfaction with the organization. In summary, it can be stated that the prerequisites for innovation in the field of HRM emphasize a holistic approach to the employee, in which professional efficiency is combined with ensuring the employee's well-being. This practice not only strengthens employee loyalty and engagement but also helps organizations stand out in the market as socially responsible and innovative systems.

The qualitative research analysis revealed that innovativeness in human resource management (HRM) is closely linked to the principles of non-discrimination, reducing employee turnover, and integrating career planning practices. The insights provided by the informants show that innovative HRM practices not only promote diversity but also shape organizations focused on long-term employee development and sustainable performance. Non-discrimination was singled out as one of the principles of HRM formation. Informants emphasized that equal opportunities in the selection process, remuneration, and promotion of inclusion are essential factors that allow for the formation of diverse and innovative teams: *"It is very interesting when employees with diverse experiences can offer innovative solutions"* [SW_1]. This is

especially important for ensuring long-term employee retention and reducing turnover. Research participant [SW4] noted that *“by involving employees from different age groups, it is possible to ensure the generation of new ideas”* and *“combining various competencies allows avoiding the rapid exit of young employees”* [SW_2]. This approach shows that innovation in the HRM process allows for employees to be considered not only for their existing abilities but also for their potential in the organization.

Reducing employee turnover was also identified as an important element of innovative HRM. Informants emphasized that hiring cheap labor or quick selections without a long-term perspective often causes high employee turnover, which increases organizational costs and reduces efficiency. Research participant [SW_2] emphasized that *“repeated hiring of new employees only creates financial losses, because the costs of recruitment, training, and introduction to processes do not bring returns”* and *“employees quickly leave the organization, what are the new ideas then”*. Therefore, HRM innovativeness trends must already be reflected in the long-term strategy of the organization’s management, assessing the candidate’s abilities and compliance with the organization’s values and accurately informing about the significance of innovative ideas. Research participant [SW_3] emphasized: *“reducing employee turnover contributes to organizational innovativeness”* and *“employees who work longer strive for higher results, and their training helps creativity and the implementation of new ideas”*.

Career planning was identified as another aspect of innovation in HRM practice. Participants emphasized that candidate selection should be based not only on meeting current needs but also on a prospective approach to the employee’s potential in the future. Respondent [SW_5] noted that *“when assessing a candidate’s qualifications, it is necessary to take into account the long-term goals of the organization, as well as the organization’s ability to meet employee expectations”*. In summary, the study revealed that innovative human resource management requires strategic, future-oriented solutions that include adhering to the principles of non-discrimination, reducing employee turnover, and integrating career planning into the selection process. These practices not only reduce organizational costs and increase operational efficiency but also

contribute to employee loyalty and strengthen the organization as an innovative organization. The qualitative research analysis revealed that when implementing innovations in human resource management, organizations face various challenges related to lack of resources, organizational cultural barriers, and lack of employee engagement. The study participants provided insights that highlighted the complexity of these challenges and the need to address them. The study participant [SW_1] noted that *“implementing innovations often require additional financial and human resources that organizations may lack”* because *“implementing new technologies or processes is an expensive process, and for smaller companies, it becomes an insurmountable task, as they often do not have the opportunity to invest in training or technology”*. This shows that the lack of financial resources is one of the main obstacles limiting the potential for innovation in the field of human resource management. An employee [SW_4] highlighted the barriers of organizational culture, which often slow down the processes of innovation implementation: *“Our organization has a deeply rooted traditional work culture, which is very difficult to change because employees are often skeptical about changes, so any new initiative is met with resistance”*. It can be argued that the reluctance of employees to change established practices can be a significant obstacle to achieving innovation in the field of human resource management. Participants emphasized the importance of employee involvement in implementing innovations: *“Innovations fail when employees do not feel their contribution or see personal benefits”* [SW_4]... *“If employees are not involved in the development or implementation of innovations, their motivation to contribute is very low”* [SW_3]. This reveals that employee involvement in the innovation process is a key success factor, and its lack can lead to the unsuccessful implementation of innovations. The analysis of the qualitative study revealed aspects of implementing social innovations in human resource management. A participant [SW_2] highlighted the barriers of organizational culture that often slow down the implementation of social innovation. He observed: *“Social innovation often challenges traditional hierarchical structures, especially when it comes to more transparent decision-making processes or involving employees from all levels. This*

creates resistance among managers who feel they are losing control". This comment reveals that traditional organizational culture and control mechanisms may be incompatible with social innovation, which requires more flexibility and participation. All participants emphasized the importance of employee engagement but also mentioned the complexity of this process. [SW_1] states: *"Employee engagement in social innovation processes requires a lot of time and effort, and some employees do not feel motivated to participate"*. [SW_4] confirms: *"People often do not see direct benefits from such initiatives or consider it an additional burden"*. This view emphasizes that while employee engagement is a crucial factor for the success of social innovation, ensuring it requires targeted communication and additional incentives.

In summary, the research suggests that the main challenges in implementing innovations in human resource management include a lack of financial resources, a rigid organizational culture, and a lack of employee engagement. Addressing these challenges requires a systemic approach that includes long-term funding strategies, educating employees about the benefits of innovation, and fostering cultural change through clear communication and leadership. When implementing social innovations in human resource management, it is necessary to foster cultural change through leadership and transparent communication, as well as create meaningful incentives for employees to participate in innovation processes. In this way, organizations can more effectively overcome barriers and ensure the success of innovative HRM practices.

Conclusions

Social innovations in human resource management are a strategic tool that allows organizations to effectively respond to a rapidly changing environment and create sustainable competitive advantage. These innovations also contribute to strengthening the well-being of employees, increasing their motivation, and promoting engagement. Research reveals that a holistic approach to employees emphasizes their value as individuals, which changes the traditional principles of HRM, which were previously dominated only by the pursuit of work productivity. This approach strengthens the relationship between the organization and employees, enabling mutual benefits for both the

organization and its team.

The application of innovative practices, including flexible working hours, psychological well-being programs, and the creation of an inclusive culture, not only improves employee productivity but also reduces turnover, which is often associated with traditional management methods. Despite these advantages, involving employees in social innovation processes remains a challenge, as some employees do not feel direct benefits or view innovation as an additional workload. Effective communication and encouraging participation become essential tools to address this challenge. Lack of financial resources is a significant obstacle to the implementation of social innovation, especially in smaller organizations, which often do not have sufficient funds to invest in new technologies, training, or employee well-being programs. Transforming organizational culture also requires effort, as traditional hierarchical models often limit the implementation of more flexible and employee-oriented management solutions. Resistance from managers and skepticism from employees are common challenges that hinder the innovation process. The integration of the principles of non-discrimination and diversity promotion in human resource management ensures a sustainable and socially responsible organizational environment. Equal opportunities, especially in the selection process, help to form diverse teams that increase creativity and allow the organization to operate more efficiently. Career planning, based on a long-term perspective, ensures sustainable integration of employees in the organization while contributing to the implementation of strategic goals. Promoting a learning culture, where mistakes are seen as opportunities for improvement, strengthens an organization's ability to adapt to changing conditions and maintain the continuity of innovation. Innovative human resource management increases an organization's competitiveness, strengthening its reputation as a socially responsible, employee-friendly, and long-term sustainable institution. Such organizations become more attractive in the labor market, attract talent, and ensure sustainable operational efficiency.

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Marta Danylovych-Kropyvnytska

ORCID: <https://orcid.org/0000-0003-3963-5524>

Ph.D., Associated Professor

Lviv Polytechnic National

University

(Lviv, Ukraine)

**PROBLEMS OF
MANAGING
COMPETITIVE
DEVELOPMENT OF THE
PHARMACEUTICAL
MARKET**

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Abstract

The relevance of the topic lies in the fact that the pharmaceutical industry of Ukraine is one of the fastest growing and most crisis-resistant consumer industries in the economy. The main driver of growth is import substitution, which creates convincing arguments for international pharmaceutical companies to increase investments by acquiring existing players or setting up their own production facilities in Ukraine. The pharmaceutical industry development strategy envisages further harmonisation with European legislation, encouragement of investments in the development of local production of medicines and the development of new technologies, clinical trials, and digitalisation in Ukraine. After obtaining the candidate status to the European Union, the country expects to win, receive a large number of investments, and become part of the integrated supply and production chains of medicines.

Keywords: *competitive development, pharmaceutical market, medicinal product, wholesale, retail, pharmacy chains, generics, digitalisation.*

Competitive development is understood as the ability to possess competitive potential and its realization in the existing market conditions (Poplavska et al., 2019). Enterprises that have competitive potential acquire this ability by carrying out their activities in accordance with the formed model of the enterprise's potential. The competitive potential of an enterprise arises simultaneously with the emergence of competition in the market and the formation of competitive relations, which, together with compliance with competition law, constitutes the prerequisites for the competitive development of enterprises.

The pharmaceutical market is one of the most strategic and innovative industries in Ukraine. Demand for products is growing regardless of economic and political factors. This makes the industry attractive for both domestic producers and foreign companies. To ensure the sustainability of the competitive development management system of pharmaceutical companies, the availability and efficient use of resources by both the company and partners that form the raw material base are key. An important feature of the successful implementation of an effective competitive development management system is the identification of the characteristics of medicines to be offered on the market and their adaptation to the needs of specific consumers. The balance between the quality of medicines and the price can be defined as system-forming. It is the quality of pharmaceutical products that is considered to be one of the key factors in the competitiveness of pharmaceutical companies.

The pharmaceutical industry, as an industry sector with a high value added, is characterized by high productivity (on average, the industry accounts for almost UAH 1.4 million of GDP per employee) and high investment attractiveness: for every UAH 100 of value added, there are UAH 19 of investments. Investments in the Ukrainian pharmaceutical industry are becoming increasingly attractive to foreign investors, but numerous macroeconomic and political factors hinder the development of the industry and its entry into the European market as an exporter (Mashchenko et al., 2022).

A significant contribution to the development of the pharmaceutical industry is made by Ukrainian manufacturers who invest a significant share of their profits in R&D (Shandrivska & Tsvetkovska, 2022). The market is highly competitive, with the three most profitable companies (Farmak JSC, Arterium Corporation, and Darnitsa PrJSC) forming a 'rigid' oligopoly, and there is little income differentiation among Ukrainian pharmaceutical companies. Other large Ukrainian producers include Zdorovye LLC, Kyiv Vitamin Plant, Biopharma, JSC Galichpharm and others (Shandrivska & Tsvetkovska, 2022).

The industry continues to operate stably even during the war. In August 2024, pharmacy sales of 'pharmacy basket' goods increased both in monetary and physical terms. In monetary terms, the growth rate was 24% compared to August 2023. In physical terms,

consumption increased by 4%. The growth in dollar terms was 10%.

The pharmaceutical market is one of the most challenging in terms of antitrust enforcement. In my opinion, there are two main factors here: an imperfect state regulatory system and grey areas in the activities of pharmaceutical companies. Table 4.3 shows the main links between the components of the pharmaceutical market, its participants and the state of competition in it.

Table 4.3

Pharmaceutical market characteristics

Commodity markets	Participants	Characteristics, competition
Medicines markets	Domestic manufacturers, representative offices of foreign manufacturers, importers	Markets are national. Product boundaries of the market - international non-proprietary name (public procurement procedures, prescription drugs) Markets are competitive if there are several generics. If the number of generics is limited or the medicinal product is under patent protection, the level of competition is low or there is no competition at all.
Wholesale pharmaceuticals market	Domestic distributors	The market is nationwide. The two largest domestic distributors have significant market power in the market for the supply of wholesale batches of medicinal products in a wide range of assortments and are not subject to significant competition due to the relatively small size of the shares owned by competitors.
Pharma-ceutical retail markets	Business entities engaged in retail trade through pharmacies and pharmacy outlets	The markets are regional, usually limited to the territory of the respective administrative unit. They are mostly competitive. In some territorial areas, they may have structural signs of dominance.

Source: compiled by the author

The pharmaceutical market continues to be one of the priority areas of the AMCU’s research. The Committee, within its powers

and competence, tries to consistently and logically submit proposals and initiatives to draft regulatory documents in order to make a real change in the system in which the pharmaceutical industry currently operates.

When analyzing the AMCU's report for 2023 (Richnyi zvit AMKU 2023), it was found that medical equipment and pharmaceutical products are among the top three areas of economic activity where violations in the form of unfair competition were detected in 2023. In total, 11.6% of all violations occurred in the market under study. As for anticompetitive concerted actions, in 2023, the Committee's bodies recorded a 7% share of violations in this market, and the share of fines imposed was also 7%, which amounts to approximately UAH 181 million. Of course, this share is not as high as in construction, telecommunications, industry, agriculture or transport, but the regular occurrence of such cases in the AMCU's reports indicates systemic problems in this market.

There are many unresolved issues in the pharmaceutical industry that require further advocacy and enforcement, and the FEAO has been constantly sending requests to pharmaceutical market participants to analyze their pricing behavior, with a number of recommendations issued to more than 60 participants over the past two years.

Competition in the pharmaceutical markets is affected not only by the non-competitive behavior of market participants themselves, but also by the actions of the authorities that are legally responsible for regulating these markets. We are talking about issues related to the exercise of powers by the Ministry of Health of Ukraine, the State Administration on Medicines and State Enterprises established under these authorities in relation to:

- a) registration (re-registration) of medicinal products;
- b) inclusion of medicinal products in the State Formulary;
- c) declaration of wholesale prices;
- d) forming and approving the nomenclature of medicinal products to be procured for the implementation of state targeted programmes and complex programme activities for public funds;
- e) quality control of medicinal products imported into the territory of Ukraine;
- f) determination of licensing conditions for pharmaceutical

market participants.

The Ukrainian legislation does not provide for any regulatory documents that would determine the scope of application of methods/techniques/rules for the promotion of medicinal products. If foreign currency exchange rates rise against the hryvnia, the price of all medicinal products, both foreign and domestic (through the use of imported raw materials), increases. The activities of manufacturers (domestic and foreign) in terms of pricing of medicinal products are not subject to government regulation. The factors influencing the competitive development of the pharmaceutical industry are presented in Table 4.4.

In order to establish transparent rules for doing business and developing competition in the pharmaceutical markets, measures should be taken immediately to introduce effective mechanisms for self-regulation of this market with the introduction of rules of professional ethics common to all participants.

The first measure is to introduce changes in legislation to simplify licensing, quality control and importation of medicines. Ukraine is trying to flexibly adapt its regulatory framework to the war scenario; in the first month of the war, the government adopted 29 orders concerning various aspects of medical and pharmaceutical services for all categories of the population in the context of Russian military aggression (Khanyk et al., 2022). In July 2022, the Ukrainian government recognised the pharmaceutical industry as a strategically import-dependent segment of the national economy.

According to the recommendations of the Antimonopoly Committee, changes should be made to simplify licensing, quality control and importation procedures for medicines in Ukraine, which includes the possibility of emergency state registration of medicines by simplifying labelling requirements and shelf life of imported medicines. It is also necessary to reduce the administrative burden on the pharmaceutical industry and abandon some excessive rules governing the registration and re-registration of medicines in the country. It is also necessary to reduce the administrative burden on the pharmaceutical industry, to abandon some excessive rules governing the registration and re-registration of medicines in the country.

Table 4.4

Factors influencing the competitive development of the pharmaceutical industry

No.	Influencing factors	Brief description of the problem
1	Military operations on the territory of the state	In the areas controlled by the Government of Ukraine, the acute shortage of medicines that was observed at the beginning of the war has been eliminated. Not all medicines are now available in full, even in areas where there are no hostilities.
2	The growth of in the cost of medicines	The Government of Ukraine is trying to minimise the impact of these challenges by adopting new legislation. This includes simplifying the licensing, quality control and importation of medicines into Ukraine, allowing displaced persons to use the services of local healthcare facilities, expanding the scope of the electronic prescription system, allowing primary care physicians to issue prescriptions to refugees, and increasing the number of reimbursable drugs for long-term therapy.
3	Anti-competitive concerted actions of business entities and other antitrust risks	Real abuses include anti-competitive concerted actions of the global insulin manufacturer Novo Nordisk and the Medfarcom, Bioton, BaDM, Apteka 3I, and Ganza groups. Non-transparent pricing was used during imports, which subsequently led to unreasonable price increases during sales through public procurement.
4	Logistics complications	Due to the current blockade of air and sea transport routes, as well as the destruction of many warehouses where medicines and raw materials were stored by the Russian occupiers. The delivery of raw materials now takes months, and domestically produced medicines are mostly made from foreign substances, which significantly increases the import dependence of the Ukrainian pharmaceutical market.
5	Market fluctuations, falling sales	Since March 2022, sales in the Ukrainian pharmaceutical market have fallen significantly due to mass migration from the country, the occupation of certain regions, and a drop in

		incomes of the population, which has started to choose cheaper analogues of drugs to save money on medicines.
6	Staff shortage in the pharmaceutical sector	This is due to the high migration of the population, as well as their active participation in the defence of Ukraine from the Russian army. To solve this problem, students and graduates of medical institutions who have not yet completed their internships were allowed to work in pharmacies.
7	Amendments to the state programme for reimbursement of medicines	In contrast to the pre-war conditions, medicines subject to reimbursement can be prescribed and dispensed on electronic or traditional paper prescriptions by any general practitioner, regardless of the patient's place of residence. Not all brand names of reimbursable medicines are currently available and not all pharmacies that participated in the programme before the war continue to dispense reimbursable medicines.
8	Falsification of medicines	There is virtually no statistical data on the falsification of medicines in Ukraine. The inability to determine the volume of counterfeiting is due to the lack of a unified system for monitoring the circulation of medicines.
9	Suspension of investment activity in the industry	The main threats to investment in the industry are: a sharp rise in raw material prices due to the industry's high dependence on imports; high competition with foreign companies within the country; increased imports of higher quality and innovative drugs from other countries.

Source: compiled by the author

The second measure in the regulation of the pharmaceutical sector, which will have a significant impact on its competitive development, is to bring Ukrainian legislation on medicinal products in line with the requirements of the European Union. Ukraine has officially become a candidate for EU membership, and at the same time received a number of reform requirements. Both the healthcare system in general and the pharmaceutical sector in particular will be viewed through the prism of these reforms.

The American Chamber of Commerce in Ukraine and the European Business Association have been working hard to harmonise Ukrainian legislation with the European one. In recent years, the assessment of medical technologies has been introduced, digitisation processes have been launched, and certain changes in regulations have taken place. The success of harmonisation between Ukraine and EU member states will depend on how fast we move and how we implement certain processes.

It is also necessary to understand the place of the Ukrainian pharmaceutical industry within the EU's common market, in particular, in the Pharmaceutical Strategy for Europe. This would provide direction for the development of the domestic pharmaceutical industry and enhance its investment attractiveness. I consider the signing of the Agreement on Conformity Assessment and Acceptance of Industrial Products for Medical Devices and mutual recognition of Good Manufacturing Practice certificates for medicinal products to be the highest priority.

The third measure is digitalization, which is an important area of our country's development. Ukraine has already shown that it can be ahead of many countries in this area. The digitalization of the healthcare system includes the introduction of backbone systems, patient registries, patient-level information and data from patient-level costing systems or genomics and biobanking. Patient access to innovative medicines and the elimination of their shortages, as well as improving security in the supply chain, are among the top priorities.

According to the industry's development strategy until 2030, the healthcare sector will be influenced by digital technologies, and innovations will become the main drivers of growth in the pharmaceutical market. The boundaries between devices, diagnostics and treatment are blurring, potentially leading to a revolution in data generation. Specialised applications and technologies support and complement innovative medicines. Key technology platforms enable innovations that reach patients directly, blurring the lines between prevention and treatment. The development of advanced therapeutic technologies – RNA, cellular, and genetic engineering – will require new competencies, technologies, and cooperation between different countries. The digital maturity of the Ukrainian healthcare system is

already at a fairly high level and the situation is likely to improve.

The fourth measure is to increase the strength and resilience of the healthcare system and the pharmaceutical industry, including the competitive development of the industry's leading companies. The National Council for the Reconstruction of Ukraine from the Consequences of the War proposes a draft recovery plan for Ukraine, which includes planning to ensure the financial stability of the healthcare system, as well as the restoration and transformation of the healthcare network. Particular attention is paid to strengthening emergency preparedness in the healthcare sector, reducing the dependence of the pharmaceutical sector on active pharmaceutical substances produced abroad, and improving access to medicines and their proper use.

As for the impact of the first measure, manufacturers want the state to implement a strategy for the development of the Ukrainian pharmaceutical industry as an integral part of the healthcare system, especially in terms of legislative support. It is important for business to understand the long-term plans for the development of the healthcare system, drug reimbursement programmes, and public procurement schemes. For several years now, Ukrainian pharmaceutical companies have been demanding that the government reform the national healthcare system. The problem is that Ukrainians buy 99% of their medicines out of their own pockets, while in Western countries a large share of the cost of medicines is covered by insurance and special government programmes, which is why the introduction of such a system will give a powerful impetus to the growth of the domestic pharmaceutical market and provide the industry with money.

As for the impact of the second project measure, in previous years, the Ukrainian pharmaceutical industry has discussed plans to join forces with foreign colleagues in various projects, as it has a high potential for cooperation with international pharmaceutical companies, in particular, in the framework of contract manufacturing of medicines. That is why the implementation of the legislation will give our country a unique chance to take a leading position in the global pharmaceutical market. European integration in this case means that the state should harmonise its legislation with the European one to facilitate access of medicines of Ukrainian origin to

the European market.

The Ukrainian pharmaceutical industry believes that in the next few years, Ukraine could attract billions of euros of investment from global market players planning to produce not only in Ukraine but also in the European market. The pandemic has exposed the vulnerability of the existing system, and global manufacturers are now considering various opportunities to bring all stages of drug production closer to the EU. Ukraine has everything it needs to become a powerful hub that can partially mitigate the EU healthcare system's deep dependence on supplies from China and India. Ukraine has a favorable geographical location, a relatively cheap but highly skilled labour force, and low taxation. In addition, its pharmaceutical industry is already strong enough to meet the demanding requirements of Western partners. As part of the third project activity, Ukraine should lay the groundwork for encouraging global market leaders to invest in R&D centers, create export hubs, and sign contracts with Ukrainian partners for contract manufacturing, localization and technology transfer.

Let's summarise the factors driving competition in the pharmaceutical market.

- Increasing prevalence of non-communicable and chronic diseases, accelerated by urbanisation and lifestyle changes.
- Ageing of the population.
- New medicines.
- Opportunities for generics, which are projected to grow by 7.4% over the next seven years as patents on branded drugs expire.
- Manufacturing improvements: robotic technologies and artificial intelligence (AI) control systems that reduce production downtime and product waste.
- Shift from open-loop manufacturing to single-use products: reorganising the production process from large batches to smaller batches of complex personalised medicines made to individual orders.
- Improved technology: transition to paperless, intelligent production control and documentation technologies based on big data and documentation procedures.
- Increased investment: investment in drug discovery and development with a focus on personalised medicines.

– Increased acquisition of smaller innovative companies by recognised industry leaders.

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Serhii Dolynskyi

ORCID: <https://orcid.org/0000-0002-6565-1264>

PhD in Economics, Associated Professor, Associate Professor of the Department of Economics and Management

Nadiia Voloshchuk

ORCID: <https://orcid.org/0000-0002-0783-0205>

PhD in Economics, Associated Professor, Associate Professor of the Department of Economics and Management

Carpathian Institute of Entrepreneurship

Open International University of Human Development “UKRAINE” (Khust, Ukraine)

METHODOLOGICAL PRINCIPLES AND TECHNOLOGIES FOR MANAGING INNOVATIVE DEVELOPMENT OF AN ENTERPRISE

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Abstract

In today's conditions of globalization and dynamic changes in the market environment, innovative development of enterprises is becoming one of the key components of their competitiveness. Innovations allow enterprises to adapt to rapid changes in technology, economy, social and environmental requirements, ensuring stable functioning and development. However, managing innovation processes is a complex task that requires a comprehensive approach, a combination of methodological principles and modern management technologies.

This study highlights the issues of methodological principles and technologies for managing the innovative development of an enterprise as a key factor in ensuring its competitiveness in a dynamic market environment. The main concepts of innovative development and approaches to innovation management are analyzed. Special attention is paid to the methods and technologies used to form innovative development strategies, as well as tools for monitoring and assessing the effectiveness of innovative activity.

The essence of innovative development as a multifaceted process that includes technical, economic, social and organizational aspects is revealed. The key technologies for managing innovations are characterized, in particular, the analysis of innovative potential, the development of innovative strategies, the management of innovative development risks, as well as mechanisms for stimulating personnel to innovative activity.

Keywords: *innovative development, innovation management, innovation strategy, management technologies, innovation potential, efficiency.*

Introduction

Innovative development of an enterprise involves not only the creation of new products or the introduction of advanced technologies, but also ensuring effective change management that covers all aspects of activity – from organizational structure to work with personnel. Important components of this process are determining the innovative potential of the enterprise, developing innovative development strategies, monitoring the results of innovative activity and risk management.

Innovative development management also requires the integration of modern information technologies that contribute to the optimization of processes, acceleration of decision-making and increasing the efficiency of the enterprise. That is why the study of methodological principles and technologies of innovative development management is relevant and timely for enterprises that seek to ensure their stability and adaptability in a rapidly changing environment.

The purpose of this study is to analyze and develop approaches to the formation of a methodology and the implementation of innovative development management technologies of an enterprise, which allow to increase its efficiency and competitiveness.

Materials and Methods

Leading researchers who have paid important attention in their works to issues related to methodological principles and technology for managing the innovative development of an enterprise are: E. Antonenko, O. Harafonova, O. Honchar, N. Kashchena, Ya. Koval, S. Makarenko, S. Ilyashenko, A. Zahorodnia.

The process of managing the innovative development of an enterprise is aimed at achieving key goals, including expanding sales markets, ensuring sustainable economic development and income growth in the long term. Management is carried out at three levels: state, regional (macro level) and the level of individual enterprises (micro level). The effectiveness of such management is achieved through adherence to principles, implementation of functions and implementation of modern management methods. To assess the effectiveness of the innovative development of an enterprise, economic and mathematical methods are used that allow modeling processes and evaluating results. This includes: PEST analysis and SWOT analysis for studying the external and internal environment; active search methods (brainstorming, expert methods) for goal formation; simulation models, scenario planning for developing strategies; sensitivity and break-even analysis methods for project evaluation.

Management technologies include building a mechanism that combines legal, economic, organizational and socio-psychological aspects. The effectiveness of such a mechanism is assessed through technical, economic, resource and social effects.

The management algorithm consists of four phases of the life cycle of innovative development, which provides a clear sequence of actions aimed at minimizing costs and maximizing results. Analysis and implementation of these methods allow enterprises to adapt to changes in the market environment, ensure sustainable development and achieve high competitiveness.

Results and Discussion

The process of managing the innovative development of an enterprise is aimed at achieving the desired goals by the company. The main goals of the enterprise are (Voloshchuk et al., 2018):

- expansion of the sales market and conquest of new segments;
- ensuring high rates of economic development;
- increase of income in the long term.

In general, the management of innovative development of an enterprise takes place at the following levels: state, regional and specific enterprise. The first two are responsible for the macro-level of management, and the third is the micro-level. The management of

the enterprise's innovative development is carried out in compliance with the principles and realization of functions as a result of specific management methods. The use of a clear sequence and implementation of methods contributes to the formation of the enterprise management mechanism. So, the main methods of managing the innovative development of an enterprise are grouped into four categories. Let's discuss each of them in more detail:

1. Legal – legislative, enforcement of rights, administrative sanctions, system of standards, legal regulation.

2. Organizational and administrative – organizational actions, disciplinary actions, administrative actions.

3. Economic – finance and economic planning, taxation, economic stimulation, crediting and pricing, financing: budgeting.

4. Socio-psychological – creating a favorable climate in the team, stimulating the formation of the team, creating favorable working conditions, social planning (Kashchena, 2020).

Legal management methods are characterized by legal regulation, legislative compliance with state standards and administrative sanctions.

Organizational and administrative methods consist in managing all stages of STP in the process of enterprise functioning and combining them into a single system.

Economic methods regulate the relationship between the participants of the innovation process, as well as between the enterprise and the state. By using economic methods, an enterprise can create favorable conditions for the formation and realization of an innovative product with minimal time and costs (Yurchuk, 2019).

Socio-psychological methods are responsible for regulating subjective factors influencing employees' activities. An important prerequisite for the effective implementation of innovations is the creation of a favorable microclimate and the formation of loyal social and production relations.

In addition, the management of innovative development of an enterprise due to the complexity of innovation processes, a significant number of factors and criteria in innovation management requires an integrated approach using economic and mathematical methods. The use of such methods allows the enterprise to reflect real economic processes as accurately as possible, to conduct an

assessment by building mathematical models. Figure 4.5 shows the main list of methods used in modeling the progress of enterprise development management at different stages of the life cycle.

Stages of Management	Models and Methods of Management
Analysis of the external and internal environment of the enterprise	PEST analysis, SWOT analysis, segmentation method, statistical evaluation methods, comparative analysis methods, method of constructing opportunity matrices.
Formation of tasks and goals for the innovative development of the enterprise	Methods of active search, brainstorming, analogy methods, expert methods; methods of passive search (realization of consumer proposals, marketing research).
Development of innovation management strategies	Scenario development method, simulation models, expert evaluation methods, dynamic programming methods.
Determination of innovative potential	Methods of cost analysis, break-even method, queuing theory, brainstorming.
Calculation of the efficiency of innovative projects	Sensitivity analysis methods, investment project efficiency evaluation, and project break-even analysis.
Development and adoption of management decisions on innovative development	System analysis methods, regression analysis, expert methods, variance analysis, operational-calendar management.

Figure 4.5 Methods of managing the innovative development of an enterprise

Source: compiled by the author based on (Kashchena, 2020)

Analyzing Figure 4.5, we can distinguish six main stages, where at each stage the enterprise uses different methods and management models to solve current problems.

Thus, the main functions of innovation development management are realized through the use of a set of economic, organizational, administrative, legal, social and psychological methods. The auxiliary use of mathematical modeling methods makes it possible to carry out a reliable assessment of the enterprise under the influence of internal and external factors.

The analyzed methods and models of managing the innovative development of enterprise provide the enterprise with the opportunity to analyze the innovative potential, select promising innovative solutions and predict the results of their implementation.

The innovative potential of an enterprise is an important factor in the innovation process, which is an organic component of the processes of individual and social reproduction. However, this potential will not be preserved, effective in use and reproduction unless appropriate technologies for managing innovation development are formed at all levels of management, namely: macro-, meso- and micro-levels (Pilyavoz & Glushchenko, 2018).

The technology of managing the innovative development of an enterprise consists in determining the mechanism for carrying out management actions and functions. At the same time, functions and management are carried out by means of methods. A clearly defined toolkit for implementing methods of managing innovation development forms a management technology. This technology forms a certain mechanism, which consists of legal, organizational and administrative, economic and socio-psychological mechanisms (Figure 4.6).

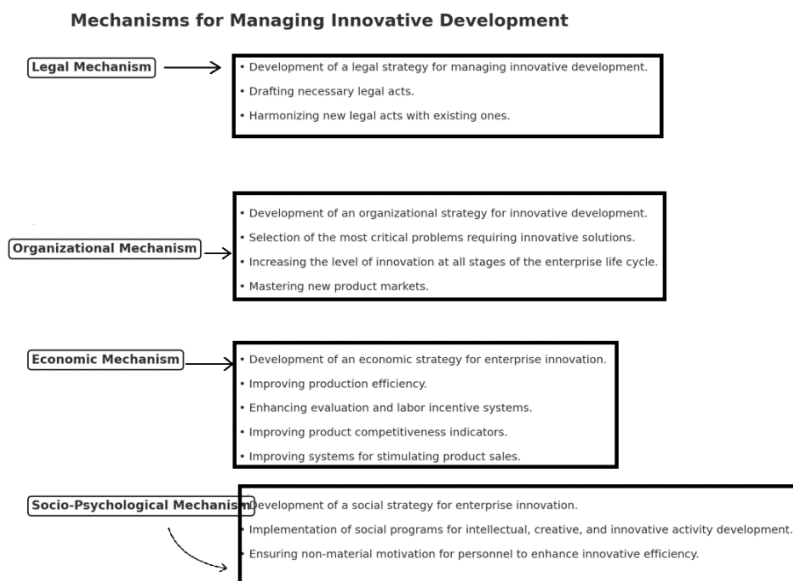


Figure 4.6 Technology of management of innovative development of an enterprise

Source: compiled by the author based on (Honchar, 2017)

For the effective use of the above technology, consisting of four mechanisms, it is necessary to take into account the sequence of introduction of innovations, composition and ability to manage them.

The management of innovative development of enterprises in the established order of interrelated methods, mechanisms and tools turns into a mechanical implementation, which is an economic management mechanism (Makarenko, 2020).

The effectiveness of the implementation of the state of technology for managing the innovation development of an enterprise is determined by a system of tools designed to analyze the effectiveness and efficiency of innovation management (Figure 4.7).

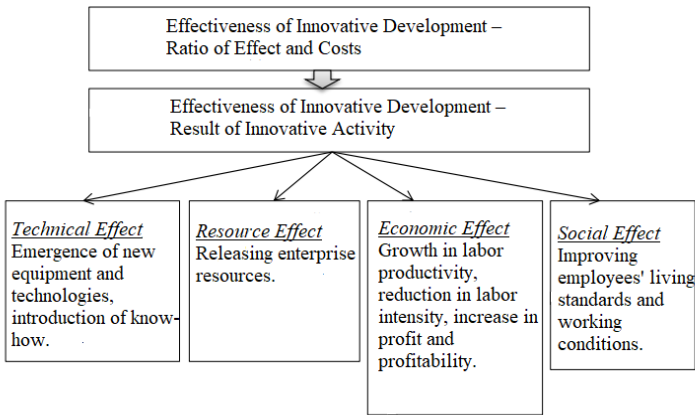


Figure 4.7 Main types of efficiency of innovation development management technology of the enterprise

Source: compiled by the author based on (Ovsyanyuk-Berdadina, 2015)

Analyzing Figure 4.7, we can conclude that the indicators of this mechanism are conditionally divided into primary (analysis of weaknesses and strengths, opportunities and threats, assessment of the enterprise's readiness for innovative changes and its innovative potential) and secondary (analysis of the results of the efficiency of the existing economic mechanism and its components).

Thus, the technology of managing the innovative development of an enterprise is a rather complex process that covers the performance

of various management functions and operations at the enterprise, which, in turn, are implemented using methods that are constantly being improved (Tyuhtenko et al., 2019).

It has also been found that the management of the enterprise's innovative development turns into a mechanical introduction, which is put into operation in the established order of interrelated tools, methods and technologies that form a management algorithm that occurs during the four phases of the life cycle (Koval & Zahorodnia, 2023).

The algorithm of the process of innovative development of an enterprise is shown in Figure 4.8.

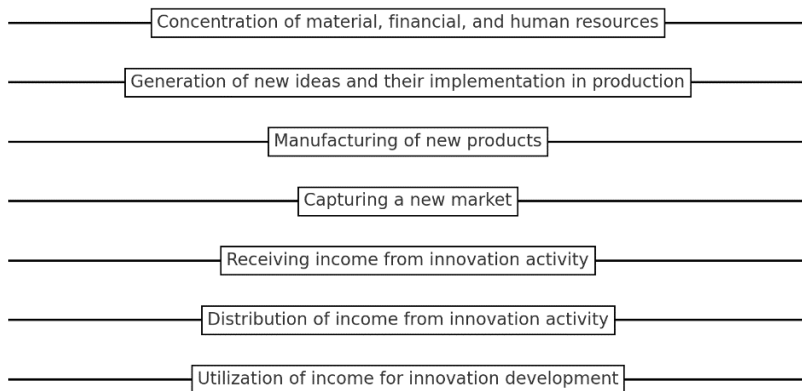


Figure 4.8 Algorithm of the process of managing the innovative development of an enterprise

Source: compiled by the author based on (Ilyashenko, 2021)

The effectiveness of the enterprise's innovative development is determined depending on the ratio of the effect and its costs. The criterion of efficiency is minimizing costs and maximizing profits (Harafonova & Antonenko, 2019).

Conclusions

Methodical principles of innovative development of an enterprise, including the main economic categories, features, subjects, objects, organizational structures, processes, factors, conditions and results.

The study and systematization of these methodological foundations of innovative development of an enterprise represents the initial stage of the research. They are the basis for further, deeper analysis of the processes of innovative development of an enterprise.

The study of methods and technologies of the process of innovative development of enterprises allows us to conclude that innovative development is a rather complex and lengthy process of transformation, which includes goals, actions, factors, organizational structures, methods of motivation and sources of financing. A prerequisite for innovation development is the existence of an innovative environment, demand for investment, development of innovation infrastructure, and availability of highly qualified personnel.

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Bożena Gajdzik

ORCID: <https://orcid.org/0000-0002-0408-1691>

PhD in Economics and hab. in

Production Engineering,

Associate Professor

Silesian University of Technology

(Gliwice, Poland)

**APPROACH TO
FRAMEWORK OF
INDUSTRIAL DEEP
DECARBONIZING IN
SUSTAINABLE
INDUSTRY 4.0**

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Abstract

This chapter presents the framework for a deep decarbonization model of industry within the context of the Fourth Industrial Revolution. In alignment with European industrial policy, the sector is progressing toward profound sustainability. Advanced technologies are expected to achieve significant breakthroughs in optimizing production and transforming it into a ‘smart’ process. However, technological advancement must be accompanied by efforts to minimize the environmental impact of industries. Sustainable Industry 4.0 (SI4.0), as this transformation can be termed within socio-economic and ecological systems, encompasses a set of technologies that reshape enterprises and value chains in the context of increasing emphasis on sustainability. Based on a brief literature review, this publication develops a framework for Deep Decarbonization in SI4.0.

Keywords: *sustainability, Industry 4.0 (I4.0), deep decarbonization, model framework.*

Introduction

The current Fourth Industrial Revolution, referred to as Industry 4.0, can be understood as the full digitalisation and integration of business processes. This encompasses the development of new product offerings, customer orders, production processes, product delivery to the point of consumption, and after-sales and support services (Wilkesmann et al., 2018). In Industry 4.0, factories are being transformed into digital factories, where the physical world merges with the digital. The transition to Industry 4.0 involves changes not only within individual enterprises but also across entire

value chains (Kagermann, 2015). Organizations leverage ICTs to enable interactions between systems, processes, activities, and physical objects within the digital space, aiming to: minimize resource usage and improve operational efficiency, achieve real-time process visibility, and enhance the flexibility and resilience of value chains (Queiroz et al., 2019; Gajdzik et al., 2025). Industry 4.0 technologies have laid the foundation for a Clean Industrial Transformation (or Revolution), yet the relationship between Industry 4.0 and sustainability remains underexplored. In the current era, following the adoption of the Paris Agreement, European industry is advancing toward Net Zero (The Net-Zero Industry Act, 13 March 2023). Climate Action 2050 (EC, Long-Term Strategy), the European Green Deal (COM/2010/640), and the Circular Economy Action Plan (EC, 2023) set new directions for industrial development, collectively referred to as the Clean Industrial Revolution (EC, 2021). This revolution represents radical technological changes across production, transportation, energy, infrastructure, services, cities (smart cities), and other areas of human activity.

The aim of this publication is to develop the foundational framework for a deep decarbonisation model within Sustainable Industry 4.0. Two overlapping trends are at the core of this framework: the Fourth Industrial Revolution and the Clean Industrial Revolution combined with Deep Decarbonization. The increasingly stronger impact of sustainability on Industry 4.0, as well as the need for Industry 4.0 to impact sustainability, has been called Sustainable Industry 4.0 (SI4.0).

Materials and Methods

The study was realized based on a literature review. The methodology consisted of three stages:

Stage 1: A systematic literature review (SLR) using the keywords Industry 4.0 AND Sustainability AND (Decarbonisation OR Decarbonization). This search query was entered into the Web of Science database under the “Topic” category for the last five years. The “Topic” category in WoS includes searches in titles, abstracts, and keywords.

Stage 2: Analysis of research areas based on the retrieved publications, including meso- and micro-level indexing, and

referencing the publications to the Sustainable Development Goals (SDGs) outlined in the UN’s Agenda 2030.

Stage 3: Integration of the Fourth Industrial Revolution and the Clean Industrial Revolution into a framework for Sustainable Industry 4.0

In the first stage of the study, due to variations in the spelling of the term ‘decarbonisation’ (UK vs. US English), a two-step filtering process was conducted using the Web of Science (WoS) database. First, the search was performed for Industry 4.0* AND Sustainability* AND Decarbonisation*, yielding 7 publications. Next, the search was repeated for Industry 4.0* AND Sustainability* AND Decarbonization*, resulting in 24 publications.

The retrieved publications were organized by citation count, from highest to lowest. The research areas of all 31 publications (7 + 24) were then filtered to focus on the ‘industry’ domain, excluding publications unrelated to industrial topics, such as agriculture. Finally, the publications were ranked into a Top 5 based on the highest citation counts. The results are summarized in Table 4.5.

Table 4.5

Analysis of papers in the segment: Industry 4.0*AND Sustainability*AND Decarbonisation* or Decarbonization*

Source	Description of research fields	Index
Kurniawan et al. (2023)	This work is about digitalization in waste recycling industry. The key research question is: How digitalization could strengthen waste recycling industry?	52
Lau,et al. (2022)	This paper presents decarbonization roadmaps. In this transformation, the important role have the digital technologies and sustainable innovations.	29
Kumar et al. (2024)	This paper presents the role Big Data Analytics (BDA) in decarbonizing the supply chain (SC). This paper presents the main research fields of SC in the strategic requirement in the era of a net-zero economy.	20
Beier et al. (2022)	This paper explores sustainable production and consumption within the context of modern industrial transformation. This transformation is driven by two primary objectives:	17

	decarbonisation and dematerialization. Digital technologies play a central role in achieving more efficient, innovative, and sustainable industrial processes.	
Bag (2024)	This study is about resources (e.g. tangible resources, human skills and intangible resources) in industrial transformation. Sustainable net zero economy needs common practices, including sustainability culture, employee training and knowledge management.	19
Li et al. (2023)	This paper examines the ongoing evolutions and revolutions in the transportation industry across various contexts, particularly concerning carbon neutrality and sustainability goals.	13
Ashari et al. (2024)	This study is about technological innovation systems (TISs) for hydrogen technologies (comparative analysis).	11
Dhayal, K.S; et al. (2023)	This paper is about decarbonization and the climate change discussion is Industry 5.0 (I5.0) including: Green Innovations (GI), Green Manufacturing Practices (GMP), Circular Economy (CE), Green Supply Chain Management (GSCM), Emerging Economies (EE), and Net Zero Economy (NZE).	11
Brinken et al. (2022)	This paper is about sustainable food supply chains with sustainability measures process digitalization and Logistics 4.0.	11
Roberts et al. (2023)	The primary focus of this research is on process-based life cycle assessment (LCA), with an emphasis on design-for-disassembly (DfD).	11
Orosnjak, et al. (2021)	This paper focuses on Maintenance 4.0 and its place in the Green Deal targets, particularly in advancing the decarbonisation of asset-intensive industries.	11
Mishra et al. (2023)	The study aims to identify, assess, and priorities barriers to adopting Industry 4.0 technology for decarbonisation in the steel industry.	4

Source: on study (data of analysis: 1 Nov. 2024)

Results and Discussion

The results of the analysis, enriched by conceptual inference, based on the literature review, were used to establish the framework of the model deep decarbonization in Sustainable Industry 4.0. Three key words were placed in the center of the model: Industry 4.0*AND Sustainability*AND Decarbonization, which were used for SRL. Changes are implemented in accordance with the 17 SDGs. In the segment of publications about Deep Decarbonization, the strategic reference is “Net Zero” by 2050. Many countries and regions across the world have been actively implementing their commitments to achieve carbon neutrality in response to the 2030 Agenda for Sustainable Development and the Paris Agreement on Climate Change (United Nations, 2021).

Based on WoS data, the analyzed publications were compared with the SDGs. Of the 17 goals, the most publications were related to Goal 09: Industry Innovation And Infrastructure (17 papers), followed by Goal 12: Responsible Consumption And Production (16 papers), then Goal 13: Climate Action (9 papers), Goal 11: Sustainable Cities And Communities (6 papers), Goal 06: Clean Water And Sanitation (3 papers), Goal 15: Life on Land (4 papers), Goal 14: Life Below Water (2 papers), Goal 02: Zero Hunger (1 paper). The list of papers given in parentheses refers to the performed literature search in the WoS database for a period of 5 years for the keyword: Industry 4.0*AND Sustainability*AND Decarbonization OR Decarbonisation.

The SDGs are therefore the highest (strategic) level in the model “Deep Decarbonization in Sustainable Industry 4.0”. Three of the 17 SD goals formed the Top goals of the model: 09 Goal Industry Innovation and Infrastructure (most assignments), 12 Goal: Responsible Consumption and Production and 13 Goal: Climate Action.

The structure of the model is based on Industry 4.0 technologies, which are linked to industry sustainability strategies. Sustainability in Industry 4.0 (SI4.0) is a collection of environmentally friendly technologies, so they are not seen as just individual technologies, but are total systems that include know-how, activities, procedures, goods, services, equipment, and even organizational and management techniques and standards. Included in the collection of

Industry 4.0 technologies are modern environmental technologies, that is, technologies (activities) that are relatively “less burdensome” to the environment relative to other competing technologies (activities). At this point it is necessary to concretize the term “less burdensome to the environment” (Santhi and Muthuswamy, 2023). By this term is meant generating less pollution, using fewer resources in a more rational manner, ensuring the reuse of products and wastes generated, ensuring the disposal of waste generated (Felsberger and Reiner, 2020; Bonilla et al., 2020; Machado Gonçalves et al., 2020). This paper assumes that sustainable Industry 4.0, as a new type of activity, or a change in existing activities resulting from the use of digital technologies, data and linkages between them, refers to environmental and socioeconomic systems, in the industries’ pursuit of sustainability. At the operational level, two key tools are used in decarbonization: LCA and carbon footprint. According to Roberts et al. (2023), targets for carbon emissions and energy use are key in the built environment to drive change and reach net-zero by 2050. Reporting at the enterprise level must be part of the supply chain (value chain) (Kumar et al., 2024).

The SI area.40, in the proposed model, was created by combining Industry 4.0 with sustainability requirements. This area is quite deep, as the author writes in a publication (Gajdzik et al., 2020). This area includes the key technologies that formed the pillars of Industry 4.0 (nine pillars) (Erboz, 2017), and in each of them there are tools and solutions that can be used to build sustainability. Especially useful are solutions, at the stage of optimizing processes, collecting and transforming operational data, blockchain technologies, machine learning and autonomous robots, computerized process support systems, as well as collaboration networks and communication systems (Gajdzik et al., 2025). Digital technologies are used to monitor the environmental impact of processes, as well as to model the environmental impact of processes, facilities and products. In addition, Smart technologies equipped with learning functions are incorporated into process optimization and autonomous systems replace humans in decision-making. Industry 4.0 technologies are fused with engineering tools, especially at the level of production and logistics processes.

Based on realized analysis of papers from WoS, under the category: Research Areas, for the keyword: Industry 4.0*AND Sustainability*AND Decarbonization OR Decarbonisation, in the last 5 years, these areas were: Environmental Science and Ecology (12 papers) and Engineering (10 papers).

Papers in the WoS database that were retrieved for the keyword: Industry 4.0*AND Sustainability*AND Decarbonization* OR Decarbonisation* were collated by meso and macro indexing. At the meso level, the categories of research were: Design & Manufacturing (10 papers), Sustainability Science (6 papers), Management (2 papers), Safety& Maintenance (2 papers) and others. Topic Micro Citation consisted of: Industry 4.0 (10 papers), LCA (3 papers), Corporate Social Responsibility (2 papers), Preventive Maintenance (1paper) and others.

Figure 4.9 illustrates the framework of the model, based on the completed literature review and conceptual inference. The presented model has limitations due to the short time of analysis (last 5 years). Deep decarbonization, is a new direction of industry transformation, so far no small term “deep”. which was introduced with the popularization of the Net Zero 2050 Strategy. Another limitation is the single-step analysis. To get more information, a multi-criteria analysis of publications could have been applied by using the PRISMA protocol. Another limitation is that the model did not include equally important categories such as: HF (workforce skills, staff training, organization culture, etc.) and Sustainable Responsibility and Global Reporting Initiative (GRI). The presented model can initiate a discussion on the industrial transformation framework for the Net-Zero 2050 Strategy in the era of Industry 4.0. The potential of Industry 4.0 has not yet been fully exploited in the Net Zero Strategy. According to Mishra et al. (2023), a lack of real-time control system and longer learning time due to poor knowledge transfer are the significant barriers to the adoption of Industry 4.0 technologies for decarbonisation in the steel industry. Moreover, the absence of sustainability indicators in decision-making is a strong argument for the lack of maintenance impact in Industry 4.0. Most industrial practitioners expect an improvement of the environmental sustainability of their respective company due to the application of Industry 4.0 technologies (Beier et al., 2022).

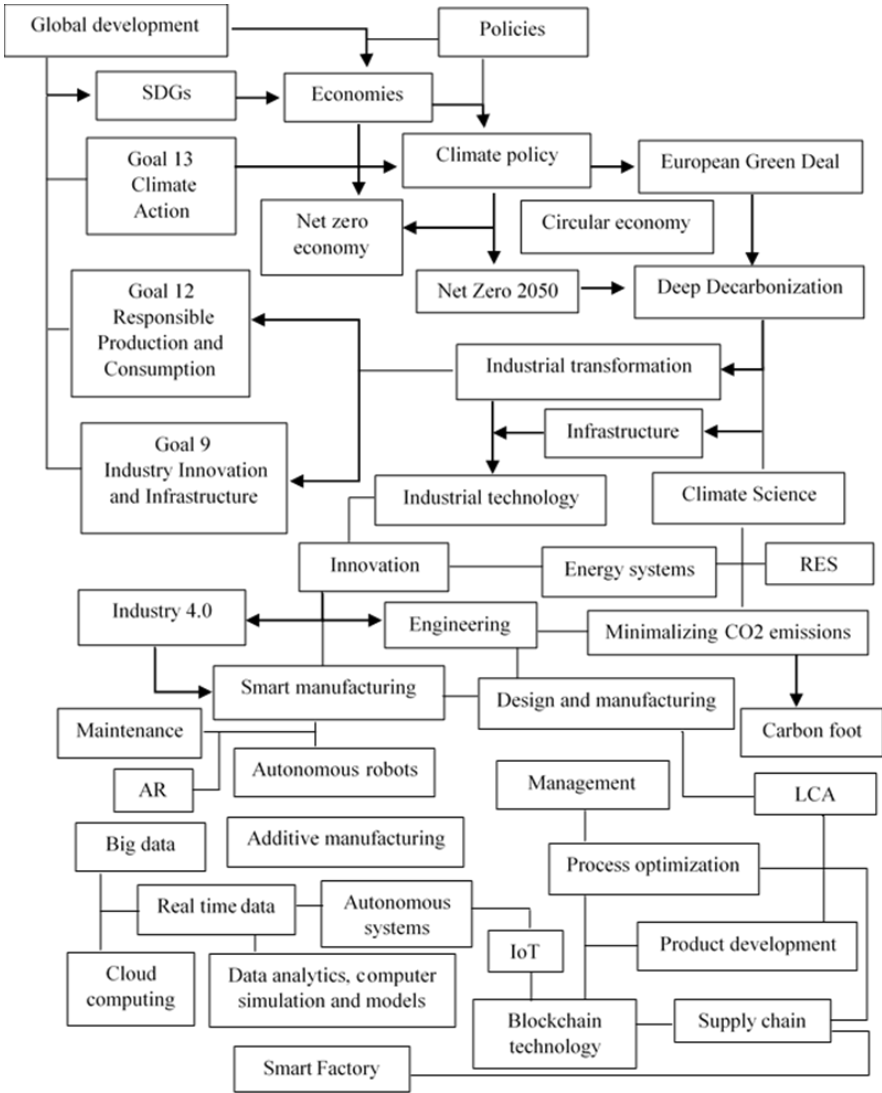


Figure 4.9 Framework of Decarbonization in Sustainable Industry 4.0

Source: own elaboration

In future studies, the existing scope of analysis needs to be expanded to include Industry 5.0. For several years, there has been a technological metamorphosis of the transition from Industry 4.0 (I4.0) to I5.0, which will affect humans and their society. I5.0 forms a symbiotic relationship with various aspects of Society 5.0 (S5.0), such as social (human-machine centricity), ecological (zero emissions) and technological (green innovation). The I5.0 transition prioritizes greening the economies in pursuit of achieving sustainability. In the paper (Dhayal et al., 2023), six major themes are fixed based on literature review for green economy: Green Innovations (GI), Green Manufacturing Practices (GMP), Circular Economy (CE), Green Supply Chain Management (GSCM), Emerging Economies (EE), and Net Zero Economy (NZE).

Conclusions

Most of the world's growing carbon emissions are due to industrial activity. Previous industrial revolutions have paid little attention to protecting the natural world. Governments around the world are constantly implementing laws and policies to mitigate climate change in order to promote sustainable development. The implementation of the Sustainable Industry 4.0 concept should be evaluated against the Sustainable Development Goals. In recent years, the emphasis of governments around the world has been on the deep decarbonization of industries. Thus, it was reasonable to undertake research about the interconnectedness of Industry 4.0, sustainability and decarbonization. The presented model can be the beginning of a discussion on the possibilities of I 4.0 technologies in deep decarbonization. We need a holistic view to understand development trends and the key roles of digitization in sustainability.

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Yuliia Havryliuk

ORCID: <https://orcid.org/0000-0002-0774-3494>

Assistant Professor of Marketing and
International Trade Department

Anatolii Yarmoliuk

ORCID: <https://orcid.org/0000-0003-1326-0779>

Postgraduate of Department of
Management named after Professor
Yosyp S. Zavadsky
National University of Life and
Environmental Science of Ukraine
(Kyiv, Ukraine)

PECULIARITIES OF STRATEGIC RISK MANAGEMENT

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Abstract

Today, enterprises are under increased pressure in business transformations that were due to digitalization, globalization and quick market changes. Strategic risk management for anticipation and mitigation of possible threats that are expected to affect important business processes significantly, is one of the most vital elements in implementing such a transformation successfully. The paper analyses the methods of risk assessment, and its inclusion in business planning to increase the efficiency and precision of project management.

This paper aims to investigate contemporary risk management methodologies in the context of vast transformative projects, and will consider impact these methodologies bear on generation of business plans. This way, you learn what strategic risk management entails in terms of cost reduction and better resource planning, all of which can lead to improved project performance as a whole. For example, successful transformation processes with a risk management methodology have taken place in the largest companies – Roshen, Ukrenergo, MHP. Their use of structured methodologies such SWOT analysis, PRINCE2, and PMBOK helps emphasise to the IT sector how risk management in large-scale transformational projects can be used.

The post also deals with potential tactics to risk reduction and strengthening the resilience of companies to threats in perpetually

shifting demands. The article is supplemented with graphs and tabular data representing the consequences of systematic risk management in large-scale transformation project implementation.

Keywords: *strategic risk management, business planning, large-scale transformation, business process optimization, quantitative risk assessment, transformational projects, SWOT analysis, project management, PRINCE2, PMBOK.*

Introduction

As a consequence of the current global upheaval, the business climate is becoming more unstable as well as more dynamic, posing new challenges for enterprises in a range of sectors. Companies are required to respond quickly to new realities as a consequence of market globalization, digital technology development, increased competition, changes in social and environmental standards, and extra regulatory requirements. To do this, organizations may need to make considerable modifications to their internal operations. These changes may include reorganization, the introduction of new technology, business model improvement, and the use of automation to improve efficiency. These improvements may affect not only manufacturing or management operations, but also customer interaction approaches, supply chain management, and corporate social responsibility decision-making.

Interestingly there are the great risks involved with broad-scale transformative initiatives, such as replacements of technology or reorganization. These threats can impact an organization considerably and have the potential to reduce their stability against its competitors. Depending on market dynamics, a rapidly changing regulatory environment or competitor activities, these risks could be either internal reader external. Internal hazards are associated with modifications in operation and changes in layout. This can mean a temporary reduction in production or employee retraining, or real losses due to technical failures. For example, not reacting quickly enough to changes in the market (e.g., refusing to adopt advances in technology or deferring regulatory compliance) could potentially result in a loss of market share, falling behind competitors and decreased consumer confidence. As for the other end, any decreased number of avenues might end up lowering consumer trust.

The traditional company planning methods are generally ill-equipped to consider all of the crises which can occur during digital transformations. In the majority of cases, they are looking at short-term analysis and do not consider other types of changes such as technological breakthroughs that speed up exponentially over time or market conditions. It can dramatically increase the degree to which organizations are attuned to risks, internally as well as externally – hence the importance of strategic risk management. That is a type of strategic risk oversight which permits the organization to keep an eye and control over all variation as well as jump start for unpredicted situations, not merely discovery upcoming hazards ahead of time but in addition intending far better for them.

Strategic risk management is very important during large-scale transformations. Using this instrument, which is both a tool for decreasing losses and a strategy for promoting flexibility, a company may increase its adaptability and resistance to change. Real-world examples from firms such as “Roshen”, “Ukrenergo” and MHP demonstrate that risk management may be a vital component in the proper execution of large-scale transformational initiatives. These companies have been able to improve the efficacy of their project management, save costs, and ensure the robustness of their business processes to changing external conditions by using structured methodologies such as PRINCE2 and PMBOK. Furthermore, these anecdotes highlight the need of using a rigorous approach to risk management. This method not only allows businesses to avoid possible risks, but it also allows them to effectively capitalize on new opportunities for growth.

Taking this into account, the article investigates modern risk management strategies, their significance in the development of resilient business models, and specific examples of successful transformational projects.

Materials and Methods

Particularly in the setting of massive changes, risk management is an essential part of good company planning. Strategic risk management, according to recent studies, makes projects more resistant to both internal and external influences by reducing the likelihood of negative outcomes. Timely risk identification provides effective resource use and significantly reduces financial losses,

according to Ukrainian researchers I. Petrenko and O. Kovalenko (Petrenko & Kovalenko, 2022). They assert that improved event forecasting and handling of unexpected scenarios result from including risk management into the first phases of company planning.

In a similar vein, J. Stickler stresses the need for a holistic strategy for risk management, one that makes use of quantitative risk assessment tools. The author asserts that by incorporating risk management into every step of the project, its ability to withstand unexpected events is improved and the chances of failure are reduced (Stickler, 2017).

Risk management is a crucial instrument for successful project management in times of economic volatility, according to Sydorenko V., who continues the study (Sydorenko, 2021). He points out that tools like SWOT analysis make it possible to do just that – evaluate potential threats from inside and outside, and then devise plans to counter them.

Project management bodies of knowledge (PMBOK) and the Projects in Controlled Environments (PRINCE2) have funded essential research that has advanced risk management. At every point in the project lifecycle, these techniques provide organized ways to find, evaluate, and lessen risks. Such approaches, as pointed out by White and Adams, improve project performance generally and provide a high degree of risk management (White & Adams, 2021).

Furthermore, Andriyenko M., a researcher from Ukraine, stresses the need of modelling probabilities and effects when doing risk assessments using quantitative approaches. He asserts that businesses may enhance their readiness for possible changes in the business environment by integrating quantitative and qualitative risk assessments (Andriyenko, M. (2020).

Therefore, risk management is a crucial element in the company planning of large-scale transformative initiatives, according to both Ukrainian and international academics. In addition to reducing potential negative outcomes, a well-planned strategy for managing risks may boost a project's efficiency and effectiveness. Also, there is a lot of research and innovations out there, but the world is changing so fast due to new technology, economic problems, and social trends that risk management systems need to be improved and

adjusted all the time. In order for the company to be as efficient and resilient as possible, it is crucial that existing technologies can easily adjust to new circumstances that come up throughout transitions.

The part of enterprise planning in the running of huge transformational projects will not be overemphasized right here whereby strategic risk management should form a crucial element. At any stage of a development project, from the idea phase, forecasting and expectation to process implementation of changes risks might appear. Hence, it is crucial to have a holistic perspective of risk assessment and management for executing the projects with desired success.

Results and Discussion

Key Methods and Techniques of Risk Management

There are visible methods and techniques that can be noticed which enable the process of risk to perform easily, being for identification or evaluation or minimizing risks. The information thus obtained aids the project management to take the important decisions and ultimately increases the overall efficiency of a project. The most common tools for risk management in large-scale transformations are depicted as follows in Table 4.6.

Case Studies of Ukrainian Enterprises Utilizing Risk Management Strategies

When it comes to executing massive transformative initiatives, risk management is a crucial part of any good business strategy. There are a number of basic approaches to risk management, and each has its own set of pros and cons as well as potential pitfalls in execution. We address these challenges and provide answers for each technique. Despite the market volatility, more and more Ukrainian businesses are using contemporary risk management techniques like PRINCE2, SWOT analysis, and PMBOK to stay afloat and prosper. Structured methods to optimization are being increasingly used by enterprises as a result of economic uncertainty, shifting regulatory constraints, and the need to conform to worldwide standards. Companies in Ukraine may protect themselves against harm and take advantage of possibilities to grow in global markets by using these strategies. Businesses that have implemented modern project and risk management methodologies and seen substantial improvements in

Table 4.6

The main methods of risk management

Method	Advantages	Disadvantages	Application
SWOT analysis	It helps to identify the strengths and weaknesses of the project, as well as opportunities and threats.	It can be subjective, depending on the interpretation of the data.	It is best suited for risk analysis in the early stages for both small and large enterprises.
Quantitative risk assessment	It provides a more accurate assessment of the probability and impact of risks on the project.	It requires accurate data that may not be available in the initial stages.	Suitable for large enterprises that have access to detailed data and resources for risk modelling.
Analysis of scenarios	It helps to prepare alternative action plans for different scenarios.	It is complicated to execute and requires a lot of time.	Optimal for medium and large enterprises facing a significant number of uncertain factors.
PRINCE2	It provides a structured approach to risk management at all stages of the project.	It can be challenging for small projects and require significant resources.	The most effective for large enterprises with complex projects that have multiple stages and a large team.
PMBOK	It systematizes project management and provides a comprehensive approach to planning and monitoring risks.	Requires a large amount of documentation and accurate data.	It is ideally suited for large corporations with numerous processes and a requirement for thorough documentation.

Source: compiled by the authors based on (Petrenko & Kovalenko, 2022; Stickler, 2017; Sydorenko, 2021; White & Adams, 2021; Andriyenko, 2020)

economic indicators include «Roshen» an energy company, “Ukrenergo” and “Myronivsky Hliboproduct” (MHP), a confectionery corporation. These case studies show how Ukrainian

businesses may improve their competitiveness and global standing by using risk management strategies. As a result, while planning their strategies, particularly for expansion into new areas, the candy company “Roshen” employs SWOT analysis. The firm undertook a comprehensive SWOT analysis to evaluate its internal and external elements that might affect its business in relation to its entry into the European market (Table 4.7).

According to the SWOT analysis of “Roshen” company has good prospects for growth and development, as is currently expanding into new foreign markets and increasing its product range. However, companies must adapt to the new standards, in particular European quality standards if they have intentions of remaining competitive on the international market and continually investing into new ideas and equipment in terms of production facilities. Its highlight was that it was rated as one of the best Eastern European companies in terms of making sweets.

Thus, Roshen had a great chance to enjoy large contracts, as the niche in Europe is huge and with people who are very spendy. The business discovered that there is still a demand for sweets particularly chocolate and toffee across many EU countries but that interest could increase. “Roshen” has received accolades as one of the best names in Europe, thanks to its luxury name and long reputation for crafting good sweets.

Based on the SWOT analysis, “Roshen” developed an elaborate plan of actions to reconfigure its goods in accordance with the needs of EU market. Fuyao, in solving challenges related to European safety and quality “has redesigned how we make things”. By being approved for foreign standards, they were also approved for the EU and could then compete with goods produced in the European Union. The second issue here is that the company launched new models specific to the European market. Now, they could have a larger steak for retail and market trade (Figure 4.10). Because this way they were able to serve the local buyers. Third, Roshen did in-depth SWOT analysis and marketing planning. The plan was to promote the brand through local wholesalers and ads with European famous people.

“Roshen” was able to grow its product line and make it more in line with European standards after doing a SWOT analysis and strategy planning. The share of the European market has hit 12%,

Table 4.7

SWOT analysis of the “Roshen” corporation

Strengths	Opportunities
<ul style="list-style-type: none"> - As one of the leading candy makers in Eastern Europe, “Roshen” has gained great market reputation. - Modern manufacturing facilities enable the firm to make European-standard candy. - “Roshen” has years of expertise exporting goods to numerous countries, creating trustworthy supply lines and international partnerships. - To satisfy diverse customer categories, the firm sells chocolate, sweets, caramel, and biscuits. - High corporate social responsibility boosts the company’s local and worldwide reputation. 	<ul style="list-style-type: none"> - Expanding in Europe and elsewhere creates new sales and export prospects. - Due to the increased demand for natural and healthy goods, “Roshen” could provide more items with less sugar and organic components. - Investing in manufacturing facilities and new technology may boost output and improve product quality control. - The introduction of premium items will help “Roshen” expand its high-quality confectionery market share. - Partnering with major European and worldwide distributors may increase sales and attract new clients.
Weaknesses	Threats
<ul style="list-style-type: none"> - While “Roshen” is penetrating European markets, a large amount of revenues still originates from the CIS, increasing the danger of political and economic instability. - EU product quality, labelling, and packaging standards need large expenditures in certification and manufacturing process modernization. - Although successful, the “Roshen” firm is still struggling to cement its place in the highly competitive premium section of the European market. 	<ul style="list-style-type: none"> - Nestlé, Ferrero, and Lindt, who are already dominant in many countries, compete with “Roshen” internationally. - Growing demand for natural, organic, and less sweet goods may need major adjustments to the “Roshen” range. - Continuous EU food safety legislation revisions may necessitate further expenditures to meet requirements. - Our reliance on overseas markets leaves us sensitive to currency rate swings, which may hurt export profitability. - Regional political or economic crises may dramatically damage the company’s sales in traditional markets.

Source: compiled by the authors based on (Ministry of Economy of Ukraine, 2022; Roshen Financial report, 2022; State Statistics Service of Ukraine, 2023)

and the number of product names has grown to 180. This helped the business make more money, bringing in 700 million US dollars in total. Its foreign sales went up to 300 million US dollars.

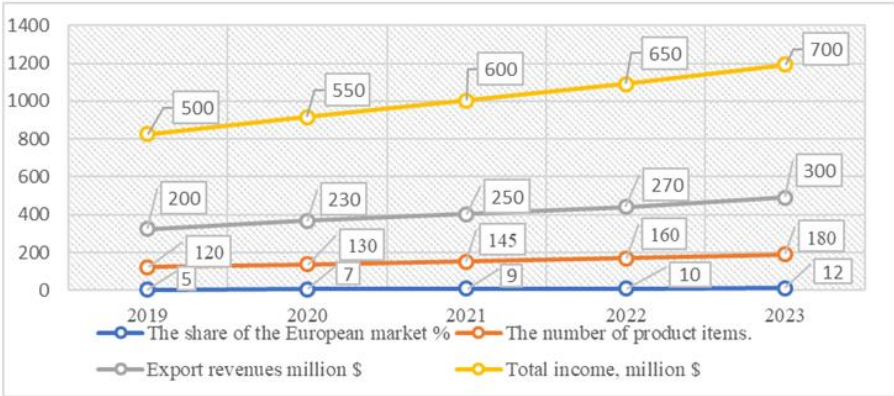


Figure 4.10 Comparative analysis of the changes in the company “Roshen” from 2019 to 2023

Source: compiled by the authors based on (Ministry of Economy of Ukraine, 2022; Roshen Financial report, 2022; State Statistics Service of Ukraine, 2023)

“Ukrenergo”, which runs Ukraine’s energy system, is another clear example of a company that had to modernize and bring its system up to European standards. Several large-scale projects had to be carried out as part of this process. These included improving infrastructure, making energy use more efficient, and bringing in new technologies. The business chose to use the PRINCE2 method to oversee these projects. Energy infrastructure improvement projects were always behind schedule, and they often cost more than planned. Overall, only 60% of projects were completed successfully in 2017, and the prices of updating things went up every year.

With the help of PRINCE2, “Ukrenergo” was able to plan project management in a more organized way. The method structured all the steps of the project and made sure that everyone knew their jobs, tasks, and responsibilities. This cut down on the time needed to finish important parts of development and greatly reduced the risks (Figure 4.11).

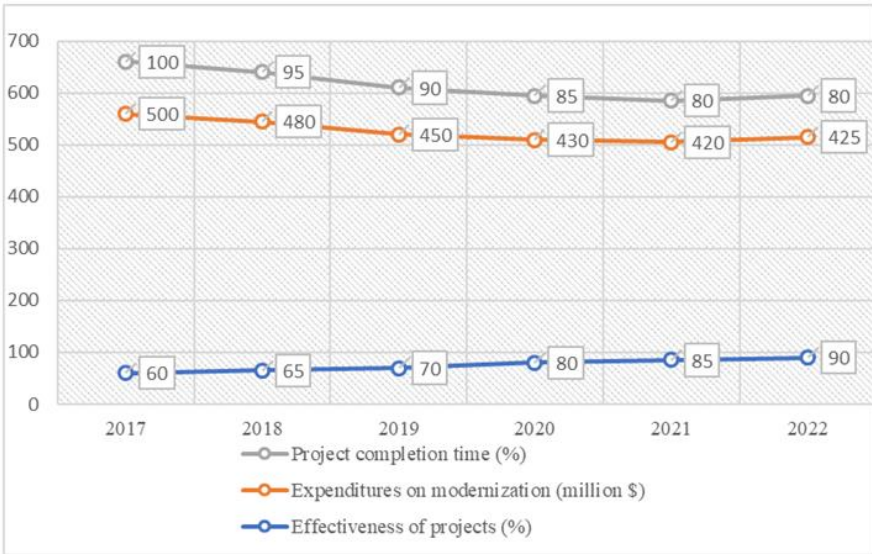


Figure 4.11 Comparative table of economic indicators for “Ukrenergo” from 2017 to 2022

Source: compiled by the authors based on (Ukrenergo. Analytical report for 2018, 2019; Ukrenergo. Report on the integration with the European energy system ENTSO-E. Official report for 2020, 2021; Ministry of Energy of Ukraine, 2022; Ukrenergo. Financial report for the year 2022, 2023)

Improving the openness of management processes was made possible, which was very important for foreign partners as they worked to join the European energy system. Five years after the approach was put into place, projects were 90% more effective overall, 15% less expensive to update, and 20% faster to finish. The company has also finished a number of large projects that connected new sites to the European ENTSO-E network.

Mironivsky Hliboproduct (MHP) is one of the biggest agricultural holdings in Ukraine. Its main business is making and exporting food, mostly chicken meat. Because MHP has to deal with global competition and follow foreign standards, it has had to use modern project management techniques to make sure it can stay in business and grow. The company has chosen to use the Project Management Body of Knowledge approach for its big projects to increase output and update its infrastructure. In 2017, MHP had a lot of problems

with how it managed projects. Most modernization and output growth projects were held up because different parts of the company didn't work together well enough, which caused costs to go up and timelines to get longer. The transportation, production, and marketing teams didn't work together well, and there wasn't enough risk management during the project delivery stages. These were some of the main problems. The company MHP was able to organize the project management process at all steps, from planning to completion, after they put the approach into place. With clearly stated jobs and tasks, this method has made it possible to organize project work. Using PMBOK standards has given us a complete way to handle risks, plan our resources, and write down all of our important processes. Because of her, MHP was able to combine project management with other business processes. This cut down on output delays and made better use of resources. With this strategy, the company was able to finish a number of big projects that increased production and brought farms up to date, which led to more exports and more production (Table 4.8).

Table 4.8

Comparative table of economic indicators of MHP for the years 2018-2022

Year	Project Management Efficiency (%)	Production volumes (tons)	Project implementation costs (million \$)	Export volumes (million \$)
2018	70	1,100,000	580	270
2019	75	1,150,000	560	290
2020	80	1,200,000	540	310
2021	85	1,250,000	520	320
2022	90	1,300,000	540	330

Source: compiled by the authors based on (Ministry of Agrarian Policy of Ukraine, 2019; MHP. Official company report, 2020; MHP. Official company report, 2021; State Statistics Service of Ukraine, 2023; Reznik et al., 2021; Reznik et al., 2024a; Reznik et al., 2024b)

The results of using methodologies such as SWOT analysis, PRINCE2 and PMBOK by Ukrainian companies have confirmed the importance of a systematic approach to risk management during large scale transformational projects, for example in “Roshen”, “Ukrenergo”, MHP etc.

Key Risk Management Strategies for the Future

The examples show that mentioned methodologies have enhanced project execution, budget reduction, and production and export growth. Modern project management technologies have helped organizations decrease risks and find new global market entry possibilities by aligning their strategy with worldwide business trends. Therefore, strategic risk management helps firms increase their competitiveness, effectiveness, and sustainable growth in turbulent markets. The following techniques may reduce risks and boost organizations' resilience to external threats in a changing environment (Reznik et al., 2024c):

1. Diversifying products and services and entering new markets helps firms lessen their dependency on one industry or market. When one market shrinks, another might fill it. Diversifying “Roshen” goods in the EU has helped this firm sell to new markets.

2. Lean supply chain management helps companies to use alternate suppliers, outsource manufacturing, or otherwise streamline the supply chain to respond to external threats like political or economic crises. To reduce global supply chain reliance, businesses might stockpile resources or use local providers.

3. Risk assessment employing analytical methods and existing systems to control the marketplace, macro indicator environment, benchmark commodity price, and political climate. Thus, predictive automated risk management solutions will help “MHP” save costs without sacrificing quality in the shifting scenario.

4. Investing in technology and innovation – automating processes and using new technologies make firms more flexible, efficient, cost-effective, and human factor-safe. An automated risk management or CRM system helps enhance decision-making.

5. Increased cyber risks need higher cybersecurity spending to protect organizations from data loss, sabotage, and reputational harm. Monitor risks and use the latest security technologies to avoid business failures and external attacks.

6. Reserve money and liquidity management – having financial reserves helps a firm survive economic downturns and maintain operational continuity. Reserve money allow the firm to prevent bad loans and unexpected cutbacks.

7. Staff qualification upgrading and leadership development –

training and developing workers helps organizations adapt faster and prepare for new problems. Employee skill-development programs will help the organization adapt to changing conditions.

8. Flexible project management strategies (Agile, Lean) provide rapid market reactions, process improvement, and loss reduction. Agile helps companies adapt and improve procedures.

9. Partnerships with innovative firms and start-ups – collaborating with innovative organizations helps major corporations embrace cutting-edge technology and resist external threats. Partnerships may speed up the launch of innovative technology and products, helping firms lead.

10. Continuous audits and evaluations of risk management techniques will help identify gaps and respond quickly to external developments. Regular company audits enable strategy revisions to meet new market problems.

These techniques will help organizations resist external dangers and complete projects in a fast-changing industry.

Conclusions

Strategic risk management is very important for making sure that big transformational projects are carried out successfully, especially in a world where things are always changing, technology is improving quickly, and globalization is spreading. Risk management needs to be a part of business planning in order to not only reduce possible threats but also make the best use of resources and make projects more successful overall. When organized methods like SWOT analysis, PRINCE2, and PMBOK are used, companies like “Roshen”, “Ukrenergo”, and “MHP” show that projects can be completed successfully.

Keeping an eye on risks at different points of the project is one of the most difficult things that a business undergoing changes can deal with. SWOT analysis is a most widely used approach to find out an internal factors that can be harmful/unfavourable to achieve the targets of project, and also an external factor which are favourable. However, since this approach is completely subjective, it may not be as effective as it could be. One example is when Ukrainian confectionery manufacturer “Roshen” masters the need to adapt its products according to the EU-certified standards upon entering the

European markets. Foray into new markets (Write Event) this would be the most critical step of entering new markets.

The PRINCE2 method used for the management of large projects to modernize the energy grid by Ukrenergo. As a result, the project took 30% less time and cost 15% cheaper. You have to remember that the PRINCE2 method allowed each person what their responsibilities were and enabled to manage risk at every level of the project. This definitively cut doubt down and clarified processes.

For the company “MHP” using the PMBOK approach has become an important step toward making project management more efficient and making it easier for the different teams to work together. This made it possible for production to go up by 20% and trade to go up by 15%. Using quantitative risk assessment methods and keeping detailed records of every step of the project led to more accurate planning of resources and a 10% drop in the cost of implementation. So, strategic risk management is an important tool for modern businesses because it helps them not only lower risks but also take advantage of new chances to grow and expand in foreign markets. Companies become more competitive when they use these kinds of methods, and they also help them stay stable when the market changes.

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Alenka Kavkler

ORCID: <https://orcid.org/0009-0002-3181-8131>

Ph. D., Full Professor, Faculty of Economics and Business University of Maribor; EIPF – Economic Institute (Maribor, Ljubljana, Slovenia)

PROPENSITY SCORE MATCHING APPROACH FOR EVALUATING TRAINING PROGRAMS IN SLOVENIA

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Abstract

In this paper, we evaluate the training active labor market policy programs in Slovenia during the great recession. The quasi-experimental method of propensity score matching is applied. Performance of active labor market policy programs is typically measured with the average treatment effect on the treated. In the short term, the training programs do not reduce unemployment.

Keywords: *training programs, propensity score matching, active labor market policy.*

1 Introduction

The aim of this study is to evaluate an important active labor market policy (ALMP) program in Slovenia, namely Workplace Training. The main question that should be answered by analyzing the efficiency of active labor market policy is whether ALMP measures reduce unemployment. Unemployment is the result of imbalances in the labor market, namely the differences between the supply of labor, which is determined by demographic and social trends, and demand for labor that stems from economic activity. The unemployment rate is, at least in the short term, determined by fluctuations in economic activity, since the labor supply is rather stable. ALMP measures that would effectively reduce unemployment should affect labor supply and/or demand.

In Slovenia as well as in other countries, ALMP programs have versatile designs and target groups, as revealed by many studies. Card, Kluve and Weber (2010) carried out a meta-analysis of individual empirical studies on the effectiveness of ALMP programs

for the European Commission. The authors concluded that training programs are the most used ALMP measure in the labor markets in Europe. Evaluation of their effectiveness gives mixed results. Estimates of treatment effects are in some cases negative and often insignificant or moderately positive. Still, there are several indications that training programs increase the probability of employment of the participants after completion, especially for participants with better prospects in the labor market, and for women. However, this pattern does not hold for all studies, because of the so-called “locking-in” effect when the jobseekers reduce their efforts to find work due to taking part in the ALMP measure.

The rest of this study is structured as follows. Section 2 gives an overview of relevant literature. Section 3 describes the data and variables used in the study. Section 4 summarizes the methodological approach of propensity score matching. In Section 5, the results of evaluating the training programs are explained in detail. The implications of the empirical analysis are examined in Section 6, Conclusion. The Introduction, Data and Methodological approach sections are taken from Kavkler (2019) and Literature review from Kavkler and Volčjak (2020).

2 Literature review

Active labor market policy measures are widely used throughout the European area to eliminate and alleviate frictions in the labour market, and their implementation in the EU Member States has increased in the last two decades. We can conclude that, as in Slovenia, the programs are very differently designed and focused on different target groups. This raises the problem of evaluating individual programs, which, however, is a problem that has improved considerably over the past 20 years with the use of different (statistical) methods. As part of a study for the European Commission, Kluge (2006) conducted a meta-analysis of individual empirical studies of program effectiveness. The following two paragraphs are a summary of the results. The author notes that training programs are the most commonly used measure of AEP in the labour markets in Europe. The estimates of their effectiveness show rather mixed results; the estimates of the effects are negative in some cases, while also often not significant or moderately positive.

However, there are still indications that training programs increase the likelihood of participants' employment after the completion of the programs, especially for those with better perspectives on the labour market and for women. However, this pattern does not hold true for all studies, since the locking-in effect is often mentioned in relation to training programs, although it is still unclear to what extent it is truly entirely undesirable.

The more recent literature on the evaluation of training programs emphasizes the need to consider long-term impacts as well. From these studies, it is possible to discern signs indicating the long-term positive effects of training programs. Even if the negative locking-in effects were significant, they would be outweighed by the long-term benefits of people's participation in the programs. In addition, the existence and direction of the relationship between the business cycle and the effectiveness of training programs are unclear, with some studies reporting a pro-cyclical relationship pattern and others the contrary.

Much research has been done on the effects of ALMP programs in transition countries in the period from 1995 till 2010. The training programs are implemented through vocational training, retraining, education, etc. (Puhani 1998; Hayo 2004; Lubyova & van Ours 1999; Lehmann, 1995). The effectiveness of such programs for transition countries shows very favourable results (Lehman 1995). Bonin and Rinne (2006) find that the likelihood of participants in a training program being unemployed is reduced by 7%. If a person attended a training program and was temporarily employed, the probability of unemployment decreases by 13%. Other authors' assessments (Walsh, Kotzeva, Dölle & Dornbush 2001) also show positive effects, as the likelihood of the participants in the training / retraining program becoming unemployed is reduced by 11%. Training programs are also effective in environments with high unemployment rates – the case of Latvia between 1998 and 2003 (Dmitrieva & Hazans, 2009) and Ukraine (Kupets 2000). Lechner, Miquel and Wunsch (2005) find that generally, the studied training programs increase long-term employment opportunities and earnings. Only male program participants are the exception since on average, the longer training does not help them (Lechner, Miquel, & Wunsch 2005). Different results come from a study by Mikhed

(2007) for Ukraine, where the results of the training programs are not significantly positive; in his meta-analysis, Kluve (2006) obtained similar results.

3 Data

The data for the empirical investigation were obtained from the Employment Service of Slovenia (ESS). The first database (called US) consists of all unemployment spells that ended between 1st January 2007 and 31st December 2010, as well as all of the ongoing spells on 31st December 2010. For each of the unemployment spells, the start and end date and the variables gender, age, level of education, occupation and statistical region were made available. Because ESS is not allowed to disclose personal data about the unemployed, only a personal ID number was added to enable identification of repeated spells. 411,338 unemployment spells with positive durations are included in this database.

The second database stores data about ALMP program participants in Slovenia in the period from 2007 to 2010. This database is called AL. In addition to the variables from the US database, AL also contains information about the type of ALMP program attended by the individual, source of financing and success of the individual at completing the program. From the initial 189,924 spells, the ALMP program ended in 166,166 cases. Since the ALMP program classification changed in 2007, the study only considers the 158,546 periods according to this classification. ALMP programs were successfully completed in 122,492 cases.

When estimating the logit models, the study used the following variables:

- Status is a dummy variable that, at any given point in time, takes the value 0 if the observed individual is unemployed, and 1 otherwise.
- Age is measured in years at the beginning of unemployment.
- Male is a dummy variable that identifies the male unemployed.
- The geographical dimension of individuals was captured with 4 dummy variables identifying groups of regions, namely RegionNE (north-eastern regions Pomurska,

Podravska, Koroška and Savinjska); RegionSE (south-eastern regions Zasavska, Spodnjeposavska in Jugovzhodna Slovenija); RegionCentral (regions Osrednjeslovenska and Gorenjska); and RegionSW (southwestern regions Notranjsko-kraška, Goriška and Obalno-kraška). This regional division makes sense regarding unemployment rates as well as geographically.

- Following other authors, the study defined 4 dummy variables that represent different levels of education, namely PrimarySchool (unfinished or finished primary school); VocationalOrSecondary (self-explanatory); University (professional college degree or bachelor's degree); and Postgraduate (master's degree or and doctorate).
- The Standard Classification of Occupations divides occupations in Slovenia into 10 groups. The analysis used dummy variables for 4 aggregated groups of occupations, namely ManagersAndExperts (armed forces, legislators, senior officials and managers, experts); TechniciansAndOfficials (technicians and associate professionals, officials); ServiceAndCraft (service workers, vendors, skilled agricultural and fishery workers, craft and related trades workers); and IndustrialAndElementary (plant and machine operators, assemblers, elementary occupations).
- The study also used a dummy variable FirstJob with a value of 1 for first-time job seekers and those returning to the labor market after at least two years of inactivity, and 0 otherwise.

It is important to mention other variables that are often statistically significant in similar studies of other authors, for example health status, income, marital status and number of children. Unfortunately, the study was not able to obtain the data on these variables for Slovenia.

4 Methodological Approach

A statistical method of matching is used to measure effectiveness of a treatment in a population. A subset of non-treated individuals is called the control group, whereas the set of treated individuals is called the experimental group (or treatment group). For applications of matching to the labor market, population is made up of all the unemployed in each period of time, while the treatment group consists of all individuals participating in a specific ALMP program.

Performance of ALMP programs is typically measured with the average treatment effect on the treated (ATT) that is defined in detail below. ATT simply represents the difference between the expected probability of employment for the experimental group and the probability in the case that given individuals from experimental group would not have participated in ALMP. The second probability can only be approximately estimated. The first step involves logit or probit models with relevant explanatory variables to calculate the propensity for participation in the observed ALMP measure. In the second step, for each individual in the experimental group, one finds one or more persons in the control group with the same or at least a similar enough propensity for participation. With this subgroup of the control group the study estimated the probability needed for ATT. A more detailed description with equations is given below.

Formally, one can describe the matching approach in the following way (Stuart, 2010; Murn et al., 2008; Caliendo & Kopeinig, 2008). In population P , the study observed two binary variables, T and Y . Variable T is assigned a value of 1 for the individual i (i.e. $T_i = 1$), if the individual receives treatment, and 0 otherwise. With $Y_i(T_i)$, the study can monitor the outcome for the treatment and control group. For example, $Y_i(1)$ is equal to 1 if individual i received treatment (i.e. participated in ALMP under observation) and became employed as a result. The outcome for each individual i can be written as a linear combination:

$$Y_i(T_i) = T_i Y_i(1) + (1 - T_i) Y_i(0). \quad (4.1)$$

Given covariates X , the average treatment effect on the treated (ATT) is defined as:

$$ATT = E(Y(1)/T=1, X) - E(Y(0)/T=1, X). \quad (4.2)$$

Propensity score for individual i is defined as the probability of receiving treatment (i.e. attending ALMP program) given the observed covariates (Stuart, 2010):

$$e_i(X_i) = P(T_i=1/X_i). \quad (4.3)$$

As described by Stuart (2010), the most important property of propensity scores is that they are balancing scores. Namely at each value of the propensity score, the distribution of the covariates X is the same in the treatment and control groups. The most common model for propensity score estimation is logistic regression that was also used in the empirical analysis. With the help of propensity score, one can compute the propensity score distance between individuals i and j as:

$$D_{ij} = |e_i - e_j|, \quad (4.4)$$

where e_j is the propensity score for individual j .

Next, for each individual in the treatment group, the most similar individuals (regarding the probability of receiving treatment as calculated by propensity score) from control group are selected with the help of nearest-neighbour matching methods. $1:1$ nearest neighbour selects the nearest individual in the control group for each individual in the treatment group. The study also applied $k:1$ matching (with k best matches for each individual). To avoid poor matches, the study followed the suggestion of Stuart (2010) and imposed a calliper. In this case, matches are only selected if they lie within the calliper.

The study also controlled for the ties (i.e. matches with the same distance). If several control observations match a treated observation, then the matched dataset includes all matches, and the matches are weighted accordingly (Sekhon, 2011). Matching “with replacement” (where controls can be used for matches for several treated individuals) confers benefits when compared to matching “without replacement”. Namely, matching “with replacement” may decrease bias since controls that are close to many treated individuals can be selected more than once (Stuart, 2010).

5 Results and Discussion

This section describes the empirical results for the Workplace Training program. The most important results of the calculations are the ATT values at the end of appropriate years and information on their statistical significance. ATT values are computed by matching methods, using a nearest neighbor algorithm, with replacement and ties. The procedure therefore considers all individuals from the control group that possess the same probability of inclusion into the program under observation. For most calculations the study used a caliper of 0.01 as suggested by many authors. The main text reports only basic indicators (ATT, standard error, t-statistic and p-value). Results of the logit models are given in the Appendix. All models and variables passed the balancing assumption, according to the bootstrapped p-values of the Kolmogorov Smirnov test. Detailed results can be obtained from the authors upon request. All calculations were performed with the R open-source code software package Matching by Sekhon (2011).

When performing the calculations, the study examined inflow into unemployment in one chosen basis year, as proposed by several authors (Fitzenberger and Speckesser, 2007; Lechner, Miquel and Wunsch, 2007; Leetmaa and Vork, 2004; Ramos, Surinach and Artis, 2009). Namely, individuals that became unemployed, for example in 2007, cannot be directly compared to those that started unemployment in 2009 or 2010, since the situation in the labor market changed significantly in this period. Base year of inflow was chosen according to the number of participants of the observed ALMP program and the expected short-term or long-term effects. The base year can be changed, if only the desirable year had enough new ALMP program participants.

Following Frederiksson and Johansson (2003), Fitzenberger and Speckesser (2007) and Leetmaa and Vork (2004), the study included a squared age variable and interaction between age and gender into the logit model. The variables are statistically significant in most cases. The study compared the results to models without these variables and found that the inclusion had only a minimal impact on ATT.

A short description of the workplace training program (also called on the job training) is given in Table 4.9 below.

Table 4.9

Description of the program (taken from the Catalogue of Active Labour Market Policy Measures, ESS, 2010)

OBJECTIVE AND PURPOSE:
The aim of the activities is to improve the employability of the unemployed and increase their competitiveness in the labour market. The activity is designed to build capacity, knowledge and skills of the unemployed whose work experience does not allow direct employment, and to promote employment of participants.
IMPLEMENTATION:
On the job training is carried out by contractors (employers) that have to apply to ESS calls.
TARGET GROUP: unemployed
DURATION: Short training: two months. Longer training: three to six (sometimes up to eight) months.

Since only 690 people participated in 2007 training programs, whereas 3,206 persons participated in 2008, the study selected 2008 for the base year. Figure 4.12 depicts the length of training for 2,381 persons that also became unemployed in 2008. For the experimental group, the study selected 1,493 participants with longer training (6-8 months), because it is difficult to study a heterogeneous group regarding length of training. The control group consists of 31,462 people that became unemployed in 2008, but did not take part in any ALMP programs.

ATT values at the end of 2010 and 2009 are negative and statistically significant (Table 4.10), whereas at the end of 2008 the study did not detect a statistically significant effect. The results are in accordance with the studies by Lechner, Miquel and Ruth (2005; 2007) that reveal negative short-term impact for training programs in Germany. Positive effects occur only after 3 to 4 years from completion, depending on the length of training. According to these authors, short term negative effects can be explained by the “locking-in” effect. Frederiksson and Johansson (2003), on the other hand, document even negative long-term effects for Swedish training data.

The study prepared additional calculations for the workplace training programs that started in 2009 (4,035 participants), out of which 3,540 completed the program by the end of 2009. For the experimental group, the study selected 3,095 participants that became unemployed in 2009. The control group consists of 53,149 unemployed persons that entered registered unemployment in 2009, but did not take part in any ALMP programs. In this case, the study also obtained a negative ATT at the end of 2009 and 2010 that is not statistically significant. Thus, with the given assumptions, the training programs seem to have zero short term effect.

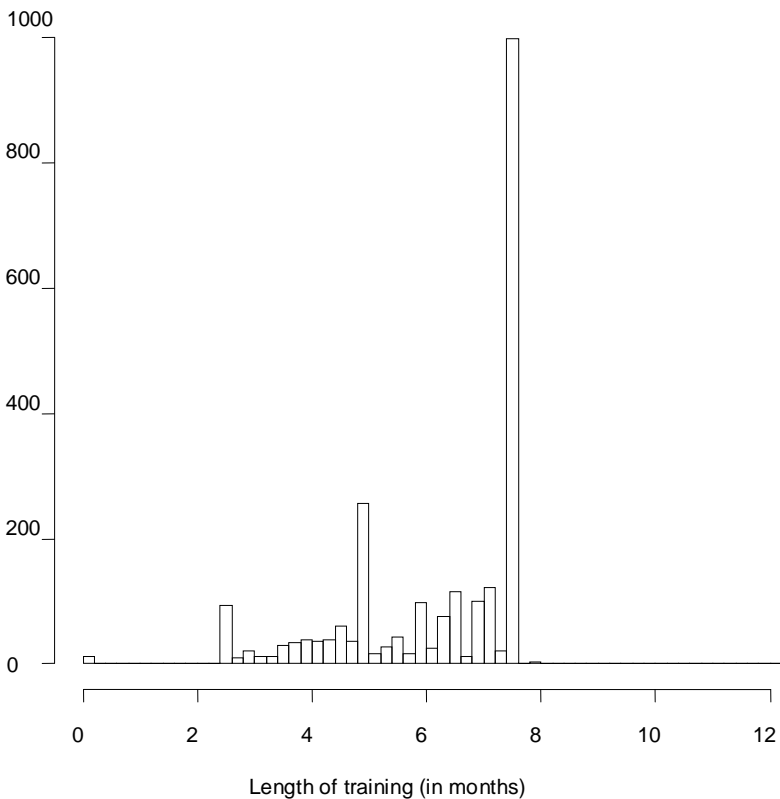


Figure 4.12 Length of training (in months)

Table 4.10

ATT values (for programs that started in 2008)

	At the end of 2008	At the end of 2009	At the end of 2010
ATT	-0.0045	-0.1066	-0.1147
AI SE	0.0140	0.0132	0.0133
t-stat	-0.3224	-8.086	-8.6543
p-value	0.7471	0.0000	0.0000

Note: AI SE denotes standard errors proposed by Abadie and Imbens (2006)

Kavkler (2019) analyses Verification and Validation of National Vocational Qualifications and Work Trials ALMP programs in Slovenia that exhibit positive ATT already in the short run.

Table 4.11

ATT values (for programs that started in 2009)

	At the end of 2009	At the end of 2010
ATT	-0.0003	-0.0069
AI SE	0.0097	0.0086
t-stat	-0.0336	-0.8050
p-value	0.9732	0.4208

Note: AI SE denotes standard errors proposed by Abadie and Imbens (2006)

6 Conclusions

The analysis reveals a negative or zero effect in the short run. Other authors obtained similar results, but it must be emphasized that for eastern and transition countries, the effects seem to be more encouraging. In a study on Serbian data, Bonin and Rinne (2006) noted that training reduces unemployment by 7%. Similar results were obtained by Walsh et al. (2001) for Bulgaria and by O'Leary (1998) for Hungary. Training programs are also effective in areas with high unemployment, as shown by Dmitrijeva and Hazans (2009) for Latvia in the period between 1998 and 2003 and by Kupets (2000) for Ukraine.

Our results are in line with studies by Lechner, Miquel and Ruth (2005; 2007) that revealed negative short-term impact for training programs in Germany with positive effects occurring after 3 to 4 years from completion, depending on the length of training. It would therefore be advisable to evaluate the effectiveness of workplace training for Slovenia in a longer horizon to test for long-term effects.

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Appendix

Table A1

Logit model for workplace training (for inflow to unemployment in 2008 and enrollment in ALMP in 2008)

Coefficients	Esti- mate	Std. Error	z value	Pr(> z)
Intercept	-5.6254	0.5655	-9.947	< 2e-16 ***
Age	0.2015	0.0221	9.114	< 2e-16 ***
Age^2	-0.0029	0.0003	-9.854	< 2e-16 ***
Age * Male	-0.0144	0.0063	-2.286	0.0223 *
Male	-0.3997	0.2090	-1.913	0.0558
RegionSE	0.2787	0.0708	3.937	8.24e-05 ***
RegionCentral	-1.0366	0.0783	-13.233	< 2e-16 ***
RegionSW	-0.9953	0.1091	-9.124	< 2e-16 ***
PrimarySchool	0.0001	0.4006	0.000	0.9998
VocationalOr Secondary	0.4273	0.3963	1.078	0.2808
University	0.5075	0.3965	1.280	0.2005
FirstJob	-0.0207	0.0940	-0.220	0.8256
Technicians AndOfficials	-0.1607	0.0945	-1.701	0.0889
ServiceAnd Craft	-0.6019	0.0964	-6.246	4.21e-10 ***
IndustrialAnd Elementary	-0.4906	0.0979	-5.011	5.40e-07 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Null deviance: 12033 on 32934 degrees of freedom

Residual deviance: 10967 on 32920 degrees of freedom

AIC: 10997

Number of Fisher Scoring iterations: 7

Table A2

**Logit model for workplace training (for inflow to unemployment
in 2009 and enrollment in ALMP in 2009)**

Coefficients	Esti- mate	Std. Error	z value	Pr (> z)
Intercept	-6.2203	0.5127	-12.133	< 2e-16 ***
Age	0.2020	0.0163	12.410	< 2e-16 ***
Age^2	-0.0032	0.0002	-14.561	< 2e-16 ***
Age * Male	-0.0133	0.0045	-2.969	0.002991 **
Male	-0.2639	0.1465	-1.802	0.071611 .
RegionSE	0.1970	0.0515	3.829	0.000128 ***
RegionCentral	-0.9624	0.0529	-18.209	< 2e-16 ***
RegionSW	-0.8850	0.0722	-12.256	< 2e-16 ***
PrimarySchool	0.1935	0.4201	0.460	0.645170
VocationalOr Secondary	0.9082	0.4174	2.176	0.029562 *
University	1.4076	0.4177	3.370	0.000753 ***
FirstJob	0.3905	0.0793	4.926	8.39e-07 ***
Technicians AndOfficials	0.5125	0.0757	6.774	1.25e-11 ***
ServiceAnd Craft	0.3626	0.0774	4.683	2.83e-06 ***
IndustrialAnd Elementary	0.3717	0.0803	4.630	3.65e-06 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Null deviance: 23967 on 56243 degrees of freedom

Residual deviance: 21540 on 56229 degrees of freedom

AIC: 21570

Number of Fisher Scoring iterations: 7

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Ernesta Molotkienė

ORCID: <https://orcid.org/0000-0003-2351-4189>

Assoc. Prof. PhD.

Head of Department of Philosophy,
Communications and Arts
Klaipeda University
(Klaipeda, Lithuania)

**THE IMPACT OF
INTERCULTURAL
PERSPECTIVES ON
ENVIRONMENTAL
ETHICS**

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Abstract

*Intercultural environmental ethics is one of the most recent research projects to analyze a wide range of ethical issues arising from the multidisciplinary perspective of societies and cultures. Intercultural environmental ethics seeks to identify the existing different cultural, value beliefs, to define universal environmental ethical principles. Different cultures disagree on common universal moral decisions because they are based on unique worldviews and value systems, and there is no universally accepted epistemically sound way to resolve such moral disagreements. The question is, what are the basic assumptions underpinning the impact of intercultural ethics that would enable the common development and application of a system of universal environmental ethical principles in different regions and cultures of the world? The article hypothesizes that a synthesis of classical Aristotelian virtue ethics, Confucian ethics, and African **ubuntu** philosophical ethics could underpin intercultural ethics, embodying the universal environmental ethical values of Western and Eastern cultures in intercultural environmental ethics theory.*

Keywords: *Intercultural environmental ethics, Confucian ethics, ubuntu, virtue ethics.*

Introduction

Intercultural environmental ethics has never been more important than it is today, but the concept of environmental ethics is not a unique phenomenon of our time. Ancient trade routes that enabled international trade, dialogue between cultures and civilizations connected various regions of the world, stretching from the Baltic

Sea to the Mediterranean Sea, Central Asia, and China. However, in the 20th century in the second half, the development of digital technologies had a significant impact on the formation of the contemporary intercultural environmental ethics today (Zolfaghari, Madjdi, 2022; Tavoletti et al., 2022; Cao et al, 2018). In the context of international and intercultural processes taking place at the macro level and individual changes taking place at the micro level, which shape the global concept of environmental ethics, the question of the possibility of a universal value base becomes important (Gomes et al., 2022; Steenkamp, 2021; Kirkman et al., 2017). The significance of intercultural ethics as a source of worldview and value attitudes becomes unquestionable in the face of the challenges of the global world, when one of the most important tasks of individuals and societies becomes the pursuit of sustainable well-being, success, and prosperity (Kantar, Bynum, 2021; Barmeyer, Mayer, 2020). In this regard, the synergy of environmental ethics, as a practical art of organizing sustainable being, and intercultural ethics, as a theory that shapes worldviews and values, enables individuals and societies to formulate and achieve long-term goals that ensure sustainable well-being and prosperity (Schragehttps, Rasche, 2022). Intercultural ethics includes and analyses wide-ranging ethical problems arising from various globalization-induced processes for human consciousness, societies and cultures from a multidisciplinary perspective, with the aim of identifying existing different cultural and value beliefs and adopting intercultural agreements on the universal application of relevant environmental ethical principles (Capurro, 2008; Ess, 2008; Nakada, Tamura, 2005; Himma, 2008, etc.) One of the most reasonable possibilities for the justification of universal intercultural environmental ethics is the synthesis of classical Aristotelian virtue ethics, Confucian ethics and African ubuntu philosophical ethics, which would enable the universal ethical values of Western and Eastern cultures in intercultural environmental ethics (Ess, 2021; Ess, 2020a; Ess, 2020b; Lehner et al., 2022).

The article presents and defends the thesis that intercultural environmental ethics aims to identify existing different cultural and value beliefs, define universal ethical principles, based on which intercultural decisions and agreements would be made in the field of

environmental ethics. The article analyzes the universal possibility of intercultural environmental ethics based on the synergy of theoretical perspectives of Aristotle, Confucius and the African ubuntu philosophy.

The main aim of the article is to reveal the possibility and impact of intercultural perspectives on environmental ethics justification. Analyzed problem / object of the research: how and in what way is it possible to establish intercultural perspectives, which could become a universal value basis for the concept of intercultural environmental ethics?

An object is the analysis of meta-theoretical assumptions of the implementation of intercultural environmental ethics.

Objectives of the research: 1) to analyze the conceptual foundations of intercultural environmental ethic; 2) to explore and reveal the possibility of intercultural environmental ethics justification based on the synergy of the main principles of Aristotle's virtue ethics, Confucian ethics and African ubuntu philosophical ethics; 3) to analyze and reveal the fundamental challenges and perspectives of implementing intercultural environmental ethics.

The main findings: In this article the major findings and the theoretical contribution of this analysis and identify areas for future research. First, the issues of intercultural environmental ethics are revisited and evaluated the effectiveness of the theoretical orientation in addressing these questions. Second, the key research findings are analyzed in relationship to the literature and the contributions the investigation makes to the theory of intercultural environmental ethics. Finally, article discuss the limitations and examine the implications of the intercultural environmental ethics for future research and practice in the environmental ethics context, reminding us of the need for strengthened linkages between ethical values systems of East and West in the global environmental practice. The main scientific results of this article are to be found in the diversity of ways in which theoretical research of intercultural environmental ethics is understood, shaped by the universal ethical systems of Aristotle, Confucius and Africa's ubuntu conception, and which can be applied in the field of environmental ethics.

Theoretical background

Intercultural environmental ethics is one of the current research projects dedicated to the analysis of wide-ranging ethical issues from a multidisciplinary perspective. Intercultural environmental ethics seeks to identify existing different cultural and value beliefs, to define universal ethical principles on the basis of which intercultural environmental decisions and agreements would be made. Intercultural environmental ethics cannot be treated only as philosophical theories, because the problematic field of this ethics consists not only of metaphysical or metaethical questions, but also of specific technical problems, so the general goal and tasks of research in this field are not always clear. R. Capurro (2008), C. Ess (2021; 2019; 2020a; 2020b), L. Floridi (2012); M. Coeckelbergh (2020); B. Cantwell Smith (2019); M. Rozkwitalska, M. Chmielecki, S. Przytula, L. Sulkowski, and B. L. Basinska (2017); N. Kantar, and T. W. Bynum (2021). In the global world, there is a need for innovative environmental strategies that correlate with the ethical systems of various cultures. The research of these authors provides strong arguments in this area: G. Josep and A. Hashmi (2018); E. M. Steenkamp, Jan-Benedict (2021); C. Barmeyer, and Claude-Hélène Mayer, (2020); L. A. de Vasconcelos Gomes, M. G. Santos, A. L. F. Facin (2022). On the other hand, it is not easy to define exactly what normative ethical or philosophical assumptions could become one common theoretical basis for the concept of intercultural environmental ethics.

The diversity of theoretical approaches raises the issue of environmental ethical justification, which is revealed in this article by such authors: A. Bounfour (2018); F. Nansubuga, and J. C. Munene, (2020); K. Asamoah, and E. Yeboah-Assiamah (2019); G. Verhoef (2021); F. O. Ogola (2018); K. Ogunyemi, O. Ogunyemi, and A. Anozie (2022); L. Zhu, O. Kara, and X. Zhu (2019); Y. Jiang, Z. Ma, and X. Wang (2022); X. Tang, Y. Gu, R. Weng, and K. Ho (2022); T.-C. Ma, and L. Ouyang (2020); L. Lin, P. Li, and H. Roelfsema (2018).

The context of intercultural environmental ethics in this article is based on new theoretical research: E. Tavoletti, N. Kazemargi, C. Cerruti, C. Grieco and A Appolloni (2022); S. Schragehtps, A. Rasche (2022). Research claims that in the context of global

processes, it is very important to consider whether the ethical standards that have dominated so far can be adapted to global environmental strategies in different cultures. Given the hybridity of cultures, a direct correlation between global environmental ethics and intercultural perspectives can be established by comparing and identifying value systems. The search for common values and ideals could lead to a universal ethical frame of reference. A significant obstacle to building trust between Eastern and Western cultures in the context of environmental ethics is worldview differences that are based on different values, which ultimately lead to different views on what ethical decisions should be. In order to ensure sustainable intercultural cooperation in the field of environmental ethics, it is first necessary to reveal false cultural stereotypes and unfounded assessments, the unmasking of which would allow for greater intercultural trust and influence the selection and application of effective environmental methods. To achieve this goal, the article relies on the tuyrim of the following authors: M. E. Mogapi, M. M. Sutherland, A. Wilson-Prangley (2019); B. L. Louie, and M. Wang (2021); S. Chen, Y. Ye, K. Jebran, and M. A. Majeed (2020); N. A. Volgina, and Y. Wang (2022). On the basis of intercultural environmental ethics, the article describes and discusses ethical principles of Aristotle's, Confucius and Africa's ubuntu philosophy contributing to the intercultural perspectives such as intercultural tandems and negotiated processes in environmental ethics.

Methodology

The methodology of the article consists of theoretical research methods. This design of the methodology was determined by the topic analyzed in the article. The main research methods used in the article: analysis of scientific sources, comparative and systematic text analysis, text interpretation and logical deduction research methods, based on which the main assumptions and arguments underlying intercultural environmental ethics were analyzed.

The methods of systematic text analysis and text interpretation enabled a systematic approach to the research object, establishing the logical connections and interaction of the theoretical assumptions of intercultural environmental ethics in order to reveal the context of the investigated problem, to interpret the results of research conducted

by other authors, different concepts or theoretical assumptions. The method of systematic text analysis explains and process for identifying and critically appraising relevant research, as well as for collecting and analyzing data from said research (Snyder et al., 2016). This method highlights the challenges of conducting a systematic review in contemporary interdisciplinary research.

The method of comparative analysis enables to define different environmental ethical systems of Eastern and Western cultures and allows to compare them in the context of intercultural environmental ethics. There are several advantages and potential contributions of conducting a comparative analysis method. In this article we determine whether an effect is constant across studies and discover what future studies are required to be conducted to demonstrate the effect, and discover which study-level or sample characteristics have an effect on the phenomenon being studied, such as whether studies conducted in one cultural context show significantly different results from those conducted in other cultural contexts (Davis et al., 2014). Methods of systematic text analysis and interpretation, and methods of logical deduction enable the comparison and generalization of different theories and arguments in the intercultural environmental ethics research field.

The possibility of intercultural environmental ethics: African ubuntu ethics, Aristotelian virtue ethics and Confucian ethics

Discussions about the intercultural basis of environmental ethics are noticeably taking place from a dominant Western ethical perspective conditioned by certain Western sociocultural attitudes, values, and interests (Capurro, 2008; Hongladarom, 2007; Buchanan and Ess, 2008; Floridi, 2007; Ess, 2021; 2019; 2020a; 2020b). The lack of sufficient value balance between various ethical perspectives often leads to a certain negative attitude towards the development of global environmental processes. Is it possible to create universal environmental ethical guidelines that are compatible with the existing ethical values of different cultures and can be overcome at the international level?

Intercultural environmental ethics is essentially pluralistic ethics, which has a diversity of different ethical systems, but there is no relativism, emphasizes the principle of objective equality of ethical

systems, rejecting benefits, power, various political or various political interests depends on the existence of various ethical systems (Coeckelbergh, 2020; Kantar, Bynum, 2021). On the other hand, for example, to incorporate such value-based worldview systems as, for example, Islam, Buddhism and Confucianism into the project of pluralism? A very important challenge is the possibility of compatibility between different ethical perspectives, emphasizing the positive perspectives included in various value systems (De Gomes et. al., 2022; Steenkamp, 2021). Ethical compatibility in this case preserves the existence of fundamental identity-defining differences in cultural systems that are not hindered by agreements on essential guidelines for ethical behavior.

In Western culture, the ethical pluralism proposed by Aristotle offers ways to overcome the fundamental differences between Western and Eastern value systems. Aristotle uses the concept of “relation to” which marks the difference between homogeneous concepts, which have only one meaning, and pure concepts, which have many meanings that are not necessarily like each other. One of Aristotle’s most common examples is the analysis of the concept of being, which reveals that there are many ways of saying that something “is”, but all of these ways are “connected to” the same and self-contradictory essence of “being” (Aristotle, 1003a33). Such an Aristotelian structure between different ways of being and the connection with the essence of being that unites all different meanings, which does not lose its identity due to different meanings, directly correlates with the pluralism of interpretations of the meaning of Plato’s idea in the epistemological and ontological sense. Aristotle’s position on the possibility of the existence of pluralism fully substantiates unity and diversity. There are also examples of this type of pluralism in the philosophies of Thomas Aquinas and Immanuel Kant, which seek to justify the coherence between the one and the many.

The pluralism of interpretations in Aristotle’s philosophies is closely connected with the concept of phronesis about the activity of the practical mind and the art of decision-making. The solution allows you to cover, generalize and draw specific conclusions in ethically controversial situations. This form of interpretive pluralism leads to the very essence of the decision being made, inseparable

from the existing differences. Pluralism of interpretations and practical judgment are important components of virtue ethics, which allow us to accept humanly wise (phronesis) practical decisions with universal legitimacy in complex and uncertain situations.

The model of Western ethical pluralism formed in Antiquity significantly contributed to the development of the project of intercultural environmental ethics and made it possible to consolidate important principles of coherence and decision-making, which are like the essential ethical principles found in one of the oldest philosophical traditions of the East: the philosophy of Confucius. X. Tang, Y. Gu, R. Weng and K. Ho (2022) take the position that in Confucian philosophy, the concept of ren means authoritative humanity, a kind of inter-humanity (Tang et. al., 2022). Although a pluralism of different or even conflicting ethical judgments can be observed in Confucianism, Confucius, like Plato and Aristotle, adheres to the same system of ethical standards: ren, which can be understood, interpreted, and applied in many different ways. According to Confucius if two people, after a careful and conscious discussion, adhere to two different or even contradictory decisions, then both should be respected (Tang et. al., 2022). This association of the possible diversity of decisions with one and the same ethical standard directly correlates with Plato and Aristotle's concept of practical decision: phronesis. In this case, one can talk about the "meta pluralism" of these two ethical traditions, because they both recognize the ethical pluralism of interpretations, which enables the diversity of interpretations of essential ethical standards.

An important principle of Aristotle's ethics of virtues: harmony correlates with Confucian concept of harmony: he. Harmony in both cultures is understood as the harmony of various musical components, which eventually becomes an important principle of the social plane, especially in the cases of education and harmonizing human relationships. In the ideal case of Confucian ethics, the harmonious life of individual people should fully meet or harmonize with the requirements of the general social order, and eventually this harmony would pass into a perfect resonance between heaven and earth (Chen et al., 2020; Wong, 2020). Similar notions of pluralistic harmony and resonance can be found in the ethical systems of Taoism and Buddhism.

Confucianism as a humanistic philosophy strongly influences many aspects of contemporary Chinese life, including management theory (Volgina; Wang, 2022; Jiang et al., 2022; Tang et al., 2022). On the other hand, Buddhism and Western capitalism also play a significant role in Chinese business practices (Zhu et al., 2019; Chen et al., 2020). In traditional Chinese ethics, as in traditional African ethics, great importance is attached to the institution of the family (Lin et al., 2018; Zhu et al., 2019). Confucius defines the hierarchically organized family as the most important foundation of society (Chen et al., 2020; Ma et al., 2020). Confucian ethics are also virtue ethics (Wong, 2020). The main virtues (de) in Confucian ethics: humanity (ren), loyalty (zhong), filial piety (xiao), honesty (xin), justice (yi), reciprocity (shu), respect (rang), courage (yong) and goodness (shan) (Ma, 2020). According to Kam-hon Lee, implementing Confucian ethics in management requires: 1) being honest with others (i.e., not deceiving and always seeking mutual benefits); 2) be reliable in processing transactions; 3) accept justice as profit (i.e., value justice more than profit); 4) being benevolent (i.e., not taking advantage when others are in crisis) (Lee; McCann; Yuen, 2011). Confucianism forms the philosophical foundation of the culture not only of China, but also of Japan, Korea, Vietnam, Singapore, and other East Asian nations, because the values formulated in Confucian ethics are important not only for China, but also for the entire culture of the Far East (Tang et al., 2022). Confucian ethics as ethics based on communality and universal virtues correlates with traditional African and Western ethical concepts.

The foundation of intercultural environmental ethics is significantly influenced by the concept of human nature analyzed in the philosophies of Aristotle and Confucius. Aristotle and Confucius describe people as a community of closely related members. In politics, Aristotle states that a person is a political animal (Aristotle, 1253a2-3), and such a person who is unable to live in society or feels self-sufficient and therefore does not need society is simply not part of the government (Aristotle, 54f./1253a). A similar position is expressed by Confucius, thinking about the place of man in society and emphasizing that the essence of man is defined by the actions, functions, and roles he performs in society, therefore man is a social

being by nature. Western ethics of concern include human and ecological problems, while Confucian ethics focuses on human responsibility, which begins in the family and eventually grows into responsibility for the whole world (Jiang et al., 2022). Is such ethical pluralism possible, which would ensure the existence of universal environmental ethical values without ignoring cultural and worldview differences?

A constructive suggestion is provided by the traditional African philosophical concept of ubuntu, whose most important feature is community. Community is the cornerstone of African thought and life. An African is not an autonomous individual but a person in a community (Nansubuga and Munene, 2020; Asamoah and Yeboah-Assiamah, 2019). The African mentality operates in a communal mode, according to which: “I am because we are and since we are, therefore I am” (Ogunyemi, Ogunyemi and Anozie, 2022). In a true community, the individual seeks the individual good while approaching the common good. In South Africa, the traditional understanding that a person becomes a real person only by being a member of a community is expressed in the concept of ubuntu (Asamoah and Yeboah-Assiamah, 2019; Bounfour, 2018). Ubuntu is central to African philosophy and communal cultural life (Nansubuga and

Munene, 2020). The concept of ubuntu is difficult to translate literally into the languages common in Western culture because this concept defines the very essence of being human (Asamoah and Yeboah-Assiamah, 2019). Traditional African ethics are virtue ethics. Virtues such as patience, optimism, mutual sympathy, and empathy are highly characteristic of the African way of life and definitely indicate a distinctive existence that expands the realm of individual possibilities to include the lives and concerns of others (Nansubuga and Munene, 2020). The success of one person is highly dependent on the success of the whole community (Ogunyemi et al., 2022). K. Ogunyemi et al., distinguished the main concept of the ubuntu concept, according to which any action is right only to the extent that it creates harmony and reduces discord, and accordingly, any action is wrong if it does not contribute to the prosperity of the community (Ogunyemi et al., 2022).

It is this interpretation of ubuntu that is the most promising

theoretical formulation of African ethics. Anglo-American or continental normative ethical theories rarely recognize that interpersonal relationships have universal moral status (Ess, 2021; Coeckelbergh, 2020). However, the traditional European normative tradition of ethics, especially Aristotle's ethics of virtues, is inseparable from intersubjective intercultural morality (Ess, 2019). Aristotle justified the position that a person achieves self-realization through interpersonal relationships. Such a position correlates with the basic concept of ubuntu, according to which one becomes human only when and only to the extent that one is involved in meaningful relationships with other people (Ogunyemi et al., 2022; Asamoah and Yeboah-Assiamah, 2019). Aristotle's ethics is not essentially a materialist theory. If material goods were the only goods, then the good of one person would constantly conflict with the good of others. However, if immaterial goods exist, it is possible to reconcile the ethics of self-realization and the ethics of interpersonal relationships.

Philosophers analyzing the concept of ubuntu also recognize that this concept embraces intangibles (Nansubuga and Munene, 2020; Asamoah and Yeboah-Assiamah, 2019). Being a good member of the community is a hallmark of Afrocentric philosophy (Verhoef, 2021; Mogapi et al., 2019). Actions that create harmony, reduce discord, and foster community also represent the valuable nature of man as a social being. Combining self-actualization and communality is important because it solves the problem of moral motivation. Modern Western ethical theories face the question, but struggle to answer it: why should I behave ethically if it does not benefit me to do so? However, if the position is followed that by behaving ethically, one gets more for the community and at the same time for oneself, then there is a motive to behave ethically.

There is a discrepancy between traditional African cultures and environmental values applied in Africa, which does not differ in its content from the Anglo-American concept environmental values. Theories developed in and for individualistic cultures cannot be effectively applied to communitarian cultures (Mogapi, 2019). Ubuntu provides a strong philosophical basis for the concept of environmental values of community (Ogunyemi et al., 2022). A central tenet of Afrocentric leadership is collectivism (Ogola, 2018).

However, the integration of ubuntu into Western environmental ethics could enrich it with values such as humanity, care, sharing, respect, and compassion (Ess, 2021).

Although some features of ubuntu are uniquely African, the core values of this philosophy are universal, co-human (Verhoef, 2021). However, in today's postmodern Western culture, belief in human nature or universal values has become a matter of dubious significance. The ubuntu philosophy asserts that the common ground of humanity is greater and more enduring than the differences that divide us (Mandela, 2006). Classical Chinese and Greek philosophical theories have much in common with traditional African philosophy (Ess, 2019).

Future discussion and perspectives

The article issue sought contributions on a range of questions relevant to the theme of intercultural perspectives impact on environmental ethics. Amongst these: why is a pluralistic ethical approach important in understanding the impact of intercultural perspectives? (Schragehttps; Rasche, 2022). How do intercultural environmental ethics impact different cultural and social groups differently? (Barmeyer; Mayer, 2020). How do these communities view issues in intercultural environmental ethics such as privacy, consent, security and identity differently? (de Vasconcelos; Santos; Facin, 2022). Can we design governance frameworks for intercultural environmental ethics that are tailored to the ethical values of different cultures, whilst also harmonizing these frameworks at the international level? (Kantar; Bynum, 2021). Do intercultural environmental ethics represent a new form of colonialism and exploitation? (Ess, 2021).

When comparing traditional African philosophy with modern European philosophy, the contrast is truly striking. However, when traditional African philosophy is compared with traditional European philosophy, the differences diminish (Rozkwitalska et al., 20147). In classical Western philosophy, from the ancient Greeks and Romans to the philosophy of the Enlightenment, man was understood as a political (communal) animal by nature (Aristotle, 1984: 1253a2-3). In other words, it is natural for humans to live in community with other humans. According to Plato, the main ethical virtues of social

life are justice, moderation, courage, and wisdom (Plato, 1974: 504a. 50; *ibid.*, 343c, 357b). However, overcoming the ethics of ubuntu raises several key issues.

One of them is nepotism, when following the collective attitudes of the family, ethnic or social group, and in some cases also tribal ideology, the interests of the clan or tribe are often put before the interests of the organization, and often this can mean the inclusion of close relatives in the organization, regardless of their suitability for the respective positions to hold office (Ogunyemi et al., 2022). The second problem is tribalism, when the interests of relatives or members of one's ethnic group are put before the interests of the nation (Ogola, 2018). The third problem is group thinking, when collectivist attitudes do not allow individuals to act without group consensus (Ess, 2021; Asamoah, 2019). In this case, various alliances are formed in organizations: groups and subgroups, whose members must adhere to a position acceptable to a certain group or subgroup. In such a situation, it is difficult for individuals to act independently based on their personal position. Such practices can complicate the processes of initiation of negotiations, changes, or development, and therefore are not effective (Ogunyemi et al., 2022).

In this aspect, the revision and addition of the concept of ubuntu, the integration of Aristotle's virtues of universal practical wisdom and Confucius' values of human harmony can enrich and strengthen the overall project of intercultural ethics. Ethical theories that claim that we must choose between selfishness and altruism, between self-love and love of others, between individual good and common good, are essentially individualist ethical theories. Ubuntu can be compared with the Western philosophical concept of solidarity (Ess, 2021; Asamoah Yeboah- Assiamah, 2019). John Paul II defines solidarity as a firm and persistent determination to commit ourselves to the common good, because we are all responsible for everyone (Paul II, 1987).

It is obvious that in the traditions of Western and Eastern cultures, the concept of pluralism is deeply rooted and is associated with the most frequent variety of interpretations of one and the same thing - idea, system, ethical standards, when different interpretations, attitudes, perspectives ultimately lead to the understanding of one and the same thing. Pluralism of interpretations is superior to other

types of pluralisms: firstly, this type of pluralism can reduce radical differences to one harmonious understanding of some subject, secondly, pluralism of interpretations connects the ancient cultures of the East and West and becomes a sustainable basis for ethical dialogue (Ibeh; Eyong; Amaeshi, 2021). It can be argued that some classical Western and Eastern ethical theories, such as Aristotle's virtue ethics, Confucianism, Buddhism, African ubuntu philosophy, Confucianism, etc. provides sufficient theoretical foundations to develop an intercultural environmental ethics based on universal values, which enables intercultural dialogue based on pragmatic agreements and minimal value consensus, while preserving individual and cultural differences.

An intercultural environmental ethics also establishes common ground with and among others (it will stress relationality and reciprocity), envisioning ways of creating networks of significance that can simultaneously draw from particular cultures and also establish similarities or commonalities for the benefit of transformative praxis in the field of environmental ethics. An intercultural environmental ethics draws from the fluid and dynamic notion of culture, one that allows the otherness of others as a shared identity: a culture of excluded, resistant, resilient, and ultimately empowered human beings, willing to engage in transformation. If cultures allow us to inhabit a meaningful world, an intercultural environmental ethics that fosters dialogical deliberation and symmetric participation might allow us to envision a world in which, as human beings, we are linked (but not trapped) to each other. It will also encourage us to engage in dialogue so that we can listen, learn, and live together as vulnerable, interdependent human beings.

Conclusions

Recent advances in the capability of global processes in the field of intercultural environmental ethics have invigorated the debate on the ethical issues surrounding their use. However, this debate has often been dominated by 'Western' ethical perspectives, values and interests, to the exclusion of broader ethical and socio-cultural perspectives. This imbalance carries the risk that environmental ethics produces ethical harms and lack social acceptance, when the ethical norms and values designed into the field of environmental

practices collide with those of the communities in which they are delivered and deployed. This article takes a step towards broadening the approach of intercultural environmental ethics, by bringing together a range of cultural, social and structural intercultural perspectives on the theory of environmental ethics. To avoid a homogenous global culture based on minimal pragmatic economic interests focused on efficient consumption, a universal ethics is necessary, which allows the preservation of cultural differences. In the context of environmental ethics, it is very important to consider whether the ethical standards that have dominated so far can be adapted to different cultures. Given the hybridity of cultures, a direct correlation in intercultural environmental ethics can be found by comparing and identifying value systems. The search for common values and ideals could lead to a universal ethical frame of reference. Recognizing existing multicultural differences, it is possible to identify certain cultural contexts that can be a sufficient basis for intercultural dialogue.

An intercultural environmental ethics that seeks to avoid imperialistic homogenization must conjoin shared norms while simultaneously preserving the irreducible differences between cultures and peoples. An intercultural environmental ethics may fulfill these requirements by taking up an ethical pluralism – specifically Aristotle's, Confucius and Africa's ubuntu ethical systems. This ethical pluralism figures centrally in both classical and contemporary Western ethics and further offers important connections with the major Eastern ethical tradition of Confucian thought. Both traditions understand ethical judgment to lead to and thus require ethical pluralism – i.e., an acceptance of more than one judgment regarding the interpretation and application of a shared ethical norm. Both traditions invoke notions of resonance and harmony to articulate pluralistic structures of connection alongside irreducible differences. After reviewing further resonances and radical differences between Western and Eastern views emerging pluralism thus fulfills the requirement for a theory of global management that holds shared norms alongside the irreducible differences between cultures and peoples.

The project of intercultural environmental ethics should correspond to the traditional cultures of Africa, Asia and Europe and

be based on common human values, as well as integrate such ethical values as solidarity, community, common good. The African philosophy of ubuntu, together with the traditional philosophies of China, Greece, and other cultures, can play an important role in strengthening the axiological basis of intercultural environmental ethics. Confucian ethical pluralism, based on Confucius's concept of ren, whereby different but equally tolerable ethical decisions are made by different participants. Confucius's ethical pluralism is compatible with Aristotle's phronesis, the concept of practical reasoning that accommodates a variety of different interpretations about something. The pros hen concept formed in Aristotle's *Metaphysics* substantiates the idea that more than one ethical decision conditioned by different interpretations is possible, associated with universal ethical norms. Due to the implementation of the pros hen concept, the connection of universalism with multiculturalism becomes possible. The integration of ubuntu into Western environmental ethics theories could enrich them with values such as humanity, care, sharing, respect, and compassion.

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Mykola Serbov

ORCID: <https://orcid.org/0000-0002-0220-6745>

*Doctor of Economic Sciences,
Professor, Dean of the Faculty
of Hydrometeorology and Ecology*

Nataliia Danilova

ORCID: <https://orcid.org/0000-0003-2334-6058>

*Candidate of Geographical Sciences,
Senior Lecturer of the Department of
Agrometeorology and Agroecology*

Iryna Katynska

ORCID: <https://orcid.org/0000-0001-9152-0471>

*Candidate of Geographical Sciences,
Associate Professor of the Department
of Water Sciences Bioresources and
Aquaculture*

Odesa I.I. Mechnikov National

University

(Odesa, Ukraine)

**MECHANISMS OF
INTEGRATED LAND
USE MANAGEMENT
IN THE CONTEXT OF
ENSURING
SUSTAINABLE
DEVELOPMENT
(ON THE EXAMPLE
OF WATER FUND
FACILITIES OF
UKRAINE)**

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Abstract

The scientific approaches to the formation of an innovative model of rational land use of water fund facilities are presented. The methodological ensure of sustainable development of regional water resources management on an innovative basis is investigated. The strategic directions of regional water resources management in the context of sustainable development are formed. Thanks to the results of the conducted research, a more objective and balanced assessment of possible schemes and tools for integrated management of water resources of the territory is provided. The conceptual approach presented in this paper is a rather flexible tool with a free choice of analysis elements depending on the goals and objects of management. The methods of analysis and synthesis, comparative comparison and logical generalization were used to solve the tasks set in the paper. On

their basis, the paper analyses the main principles of adaptation of the world experience of regional management of water fund facilities in the context of implementation of the Water Framework Directive of the European Union, identifies environmental priorities of regional management of freshwater resources, their innovation and investment dominants, target benchmarks and a model of environmentally balanced management of water bodies and resources at the regional level.

The results of the conducted research provide an opportunity for a more objective and balanced assessment of possible schemes and tools for managing water resources of the territory. The conceptual approach presented in this paper is a rather flexible tool with a free choice of analysis elements depending on the goals set and objects of management.

Keywords: *water resources, integrated management, innovative model, balanced land use, sustainable development.*

Introduction

About two-thirds of the world's population may experience acute water resources in the near future. In many countries of the world, the tendency to solve water shortage problems by means of water conservation is still present:

- increase in water supply;
- increase storage and distribution of surface and groundwater;
- creation of new water infrastructure;
- desalination of saline or brackish water;
- reuse of wastewater or recharge of aquifers.

This trend currently prevails over focusing attention on reducing the overall demand for the natural resource. However, the water shortage can be overcome by using modern innovative solutions that increase the overall productivity of resource use based on modern innovative solutions for managing water bodies, which in turn allows for a significant modernization of water resources infrastructure. It is the use of innovative water management principles in the context of sustainable development that should become a prospect for the coming years.

One of the main goals of Sustainable Development (Irtysheva et al., 2022b) is to ensure comprehensive access to quality water, which is of particular importance for people, nature and all economic activities. Many scientists and scholars have proved the importance

of quality water for the health of the nation. Today, there is a shortage of water resources. That is why rational land use of water fund facilities, restoration of their resource base to its natural state, conservation and treatment of water resources are important.

In this context, innovations are the driving force behind ensuring the process of rational land use of water fund facilities, water purification, conservation and restoration of water resources. That is why, in the context of implementing the Sustainable Development Goals, there is a need to study the level of development of innovative mechanisms in environmental protection activities that allow for the realization of the set tasks. It is important to adapt the global experience of land and water fund facilities management in the regions of Ukraine in the context of the implementation of the Water Framework Directive. The identified problems require in-depth research.

The paper reveals scientific approaches to the formation of an innovative model of water resources management, characterizes strategic vectors and key imperatives of the innovative model of rational land use and management of water fund facilities; identifies investment dominants of realization of the innovative model of sustainable use of water resources of the region, and outlines improvement of models of integrated management on an innovative basis in the context of sustainable development.

The practical significance of the obtained results lies in the possibility of introducing scientific and practical approaches to substantiate an innovative model of water resources management of the territories in the context of sustainable development. Based on the results of the study, an innovative model of water resources management and monitoring of the implementation of strategic priorities at the national and regional levels has been developed.

Materials and Methods

To achieve the goal set in the study, general scientific and special research methods were used: *analysis and synthesis* – for a comprehensive study of water fund facilities and water resources as a multidimensional and multisectoral phenomenon through the prism of the impact of an innovative model of rational land use; *systematization* – to identify patterns of change in generalizing indicators of regional use of natural resources, innovation potential

of the industry and sustainable development; *spatial* – to study the peculiarities of the development of innovative activity of environmental protection measures under the influence of economic processes by regions of Ukraine; *statistical* – to systematize economic and statistical information on environmental protection costs; *graphic and cartographic* – to visually display hydrographic zoning and land use mechanisms in Ukraine; *computer processing and analysis of information* – to perform a comprehensive analysis of the impact of changes and forecast quantitative research indicators.

The research is based on the following information the laws of Ukraine, decrees of the President of Ukraine, resolutions of the Cabinet of Ministers of Ukraine, statistical materials of the State Statistics Service of Ukraine, the Ministry of Environmental Protection and Natural Resources of Ukraine, other ministries and departments, scientific-research institutes, centers and fund, scientific works of domestic and foreign authors.

Research on existing solutions to the problem

In recent years, the range of scientific research on sustainable land use of water fund facilities has expanded significantly, and various scientific studies related to the optimization of environmental management and environmental rehabilitation have intensified.

Today, water management and hydroecological issues have become not only national but also internationally important. The water factor has become one of the main indicators limiting the regional development of the production sector and an unconditional paradigm of national security in the vast majority of countries in the world.

In publications (Strategy for the development of water policy in Ukraine; Sustainable Development Goals: Ukraine 2030; Goonetilleke et al., 2016) it is noted that water crises in many countries are caused not so much by a lack of resources as by a poor and uncoordinated land use system in the region. A significant role in the development of crisis phenomena is played by the lack of comprehensive sound decisions on the integration of ecosystem services into the water management system (Serbov, 2021).

A significant role in the development of crisis phenomena is played by the lack of comprehensive, evidence-based solutions for the integration of ecosystem services into the water management

system (Serbov, 2021).

The author of (Serbov, 2022) notes that in 2010-2015, at least 35-45% of the world's population lived for at least one month under water stress. More, in such regions of the world as India, Pakistan, Bangladesh, and Northeast China, this indicator reached 80-85%.

Freshwater ecosystems are among the most threatened in the world, while providing essential ecosystem services to humanity. It is emphasized in (Goonetilleke et al., 2016; Serbov et al., 2022) that despite its significance and importance, research in the field of freshwater ecosystem services is currently very limited. Studies (Serbov, 2022; Sustainable Development Goals: Ukraine 2030; Goonetilleke et al., 2016) on the spatially detailed assessment of global water stress in water supply and the impact of climate change on the reduction of ecosystem services reveal several features that are unique to freshwater ecosystems. The first problematic feature is, as a rule, an extremely insufficient and inefficient system of operational data transmission to all stakeholders (Serbov, 2021). It should also be noted that there is insufficient focus on a more dynamic approach to qualitative and quantitative assessment of the resource at the landscape level, and the transboundary interconnectedness of freshwater bodies and economic entities (Sustainable Development Goals: Ukraine 2030).

The authors of (Irtyshheva et al., 2022b) believe that the focus on environmental innovations is required by the growing problems of our time, including in the field of rational use of water fund lands, especially freshwater security, require an emphasis on environmental innovations that can ensure sustainable development of the water sector, preservation of environmental quality, rational use of water resources, and meeting the needs of future generations for drinking water of sufficient quantity and quality.

It is necessary to agree with the opinion (State Agency of Water Resources of Ukraine) that innovative transformations in the field of water supply and sewerage are a determining factor in improving the efficiency of enterprises' activities, increasing the quality of services, increasing environmental and social standards, etc. The European experience proves the effectiveness of the state policy in the field of land use of the water fund, which promotes innovation activities in

this area, regardless of the management model and the regulatory model. Thus, the need to formulate state policy in the field of water supply and sewerage based on innovative model is a challenge for all countries of the world.

Thus, according to the national report “Sustainable Development Goals: Ukraine”, “Ukraine belongs to the group of countries with complex environmental problems. They are typical, on the one hand, for developing countries (unbalanced use and depletion of natural resources), and, on the other hand, for industrialized countries (environmental pollution from industrial activities). A specific problem of the transformation period is waste management. Current land use practices are causing land degradation, and the exhaustive use of land, forest and water resources is leading to irreversible losses of ecosystem and biological diversity. The share of natural protected areas in Ukraine (6.6% of the total area) is insufficient to prevent such losses. The armed conflict in Ukraine is also a significant factor of negative environmental impact. Overcoming the consequences of the destruction of landscapes and the destruction of the country’s infrastructure requires significant efforts, resources and time for recovery” (Golian & Androshchuk, 2016). Accordingly, the Sustainable Development Goals should be based on the core principles of innovation of the United Nations Development Programme (UNDP) (Figure 4.13).

The author of (Malin, 2020) emphasizes that environmental innovations are considered to be a kind of indicator of sustainable and balanced development in a competitive environment. These are complex and rather complicated technologies that allow to effectively solve environmental problems, requiring not only innovative engineering ideas, but also innovative approaches to the management and organization of society life.

A number of researchers on the subject argue that the formation of modern trends in ensuring the optimal operation of the system of balanced functioning of the water management complex encourages the improvement and deepening of approaches to ensuring the gradual development of the sustainable land use system (Serbov, 2022; Goonetilleke et al., 2016). At the same time, it is important to identify and economically assess resources as a basis for the development, mastering and exploitation of water resources in the

context of implementing the provisions of the EU Water Framework Directive. Relevant areas for the implementation of the Water Framework Directive in Ukraine have been developed: integrated freshwater management based on the basin principle is being implemented, territorial zoning has been carried out, and a draft Water Strategy has been developed.

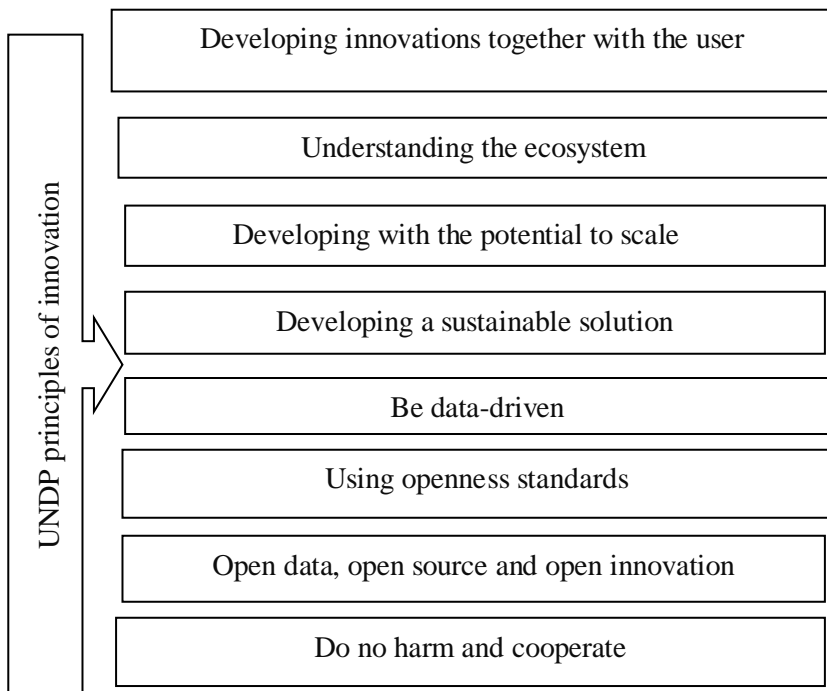


Figure 4.13 Key principles of UNDP innovation (Serbov, 2021)

Article 360 of the Agreement stipulates that strengthening environmental protection activities will have positive consequences for citizens and enterprises in Ukraine and the EU, in particular through improved health care, conservation of natural resources, increased economic and environmental efficiency, integration of environmental policy into other areas of state policy, and increased the level of production through modern technologies (Serbov et al., 2022).

The Ministry of Environmental Protection and Natural Resources of Ukraine notes that until now, water resources management in Ukraine have been managed according to administrative-territorial divisions, as if rivers also had borders between regions and countries. Decisions on the ecological state and use of river resources were made by regional water resources departments, which are subordinated to the State Agency of Water Resources. Each district manages itself, and there is no integrated management. Today, Ukraine is moving to a basin-based management principle (National strategy for increasing foreign direct investment in Ukraine).

The study (Baseline study of the state and directions of development of environmental policy in Ukraine...) believes that innovative directions for improving the mechanisms of state regulation of the systemic use of water resource potential of Ukraine are as follows:

- all aspects of synergy, quality, harmonization of laws and regulations, ensuring national security of the state in the field of water resources due to the growth of water consumption, total pollution, especially of surface water;
- guaranteeing the reliability and safety of hydraulic structures; studying the growth of anthropogenic pressure on groundwater;
- justification of aspects of pricing for drinking water;
- integrated water resources management;
- reducing the water intensity of gross domestic product;
- further rationalization of water use;
- building and reconstruction of water supply and sewage systems; scientific substantiation of the quality of drinking water supply;
- improved wastewater treatment and increased liability for pollution;
- advanced development of the scientific, technical and regulatory framework of the water management sector;
- development of the theory and practice of environmental conflict resolution;
- improving the efficiency of water resources distribution;
- wide implementation of innovative technologies under development.

Thus, in order to implement the Water Framework Directive, it is

necessary to develop and adopt a water policy development strategy. Relevant strategies should be developed at the macro, mezo and micro levels.

Ukraine has developed a draft “Water Policy Development Strategy of Ukraine – Water Strategy”, which states that the shortage of fresh water of adequate quality is observed in 13 regions of Ukraine. This situation is exacerbated by the effects of climate change, which significantly affects the seasonal distribution of water resources and leads to prolonged dry periods. According to experts of the Institute of Local Development, only 30.1% of the rural population, 89.9% of the population living in urban-type settlements and 99.2% of the urban population have access to centralized water supply. The rest of the rural population uses water from street water intake columns (about 20%) and uses water from wells and other sources (over 60%). Urban water supply networks are outdated, dilapidated and leaky, causing significant losses of water that has undergone pre-treatment and contaminated groundwater entering the water supply network. Poor-quality drinking water is one of the causes of the spread of infectious and non-communicable diseases (Clean environment – healthy future...).

The results of research (Zakharchuk, 2011) show that important conditions of improving the organizational and managerial mechanisms for regulating the use of water fund lands are:

- 1) revision of the organizational structure of management with clarification of the rights, duties and powers of state, regional and territorial bodies with specification of their functional responsibilities. Developing effective incentive systems aimed at developing water sector personnel and water users;

- 2) formation of an effective system of monitoring, coordination and control over the state and use of water resources, based on an updated regulatory framework and modern information systems (in particular, Big Data);

- 3) optimization of planning and forecasting systems for the development of water resources and needs based on a comprehensive strategic approach that takes into account not only general trends and current needs, but also trends in the development of the national and global economy, demographic and climate change, etc.

According to (Irtyshheva et al., 2022a), the path of innovative

development of the ecological and economic system, based on the principles of adaptability, dynamism, self-organization, self-regulation and self-development, should be determined by the general trends of economic growth and take into account its administrative and territorial features, natural resource and production and economic potential.

In turn, studies (Kanonishena-Kovalenko, 2017) show that Ukraine's environmental problems can be more effectively addressed with the help of international partners, directing the efforts of national driving forces to harmonize the vital activities of international assistance, attract foreign investment, including production, introduce resource-saving technologies, develop a regional industrial waste management system and create environmental funds.

The study (Baseline study of the state and directions of development of environmental policy in Ukraine; Zakharchuk, 2011; Obukhov, 2019) believes that despite the fact that the volume of current expenditures and capital investments in environmental protection is growing, investments on ensure environmental protection in Ukraine are low level, and the volume of environmental protection investments is insufficient. It is necessary to mobilize investment in environmental protection from all possible sources, increase public investment, intensify alternative investment, and stimulate the inflow of foreign investment in environmental protection. It is advisable to review the structure of expenditures, namely, to increase the share of capital expenditures in the total amount, while gradually reducing current expenditures.

Despite a considerable amount of scientific research, the issues of methodology for the formation of a rational system for managing water fund facilities and water resources in the context of sustainable development remain insufficiently studied.

Research results

Water resources are becoming increasingly scarce on a global scale as a result of escalating demand due to population growth and the need for increased food production, expanding industrialization due to rising living standards, pollution from various anthropogenic activities and the impacts of climate change (Goonetilleke et al., 2016). Scientists predict that, due to the scarcity and poor quality of

fresh water, at least one in four people is likely to live in a country with a fresh water shortage by 2050. In this regard, ensuring the availability and sustainable management of water resources has been adopted as one of the Sustainable Development Goals by the United Nations by 2030 (Serbov et al., 2022).

According to the Ministry of Environmental Protection and Natural Resources of Ukraine, in 2020, 9.6 cu. km of fresh water was withdrawn from natural water bodies (90% from surface and 10% from groundwater sources). Over the past decade, Ukraine has seen a decline (by 1.5 times) water resources use (from 14.8 cu. km in 2010 to 9.6 cu. km in 2019) and wastewater discharge (from 7.8 cu. km in 2010 to 5.2 cu. km in 2020), driven by a decline in commodity production, reduced water use due to rising water tariffs and a slight reduction in water losses. In 2020, 60% of fresh water was used for production needs, 21.4% for irrigation, and 17.3% for drinking and sanitary and hygienic needs. Water losses during transportation reached 1.2 cu. km, which accounted for 12% of the total water withdrawn. Since 2013, there has been a decline in the total capacity of municipal wastewater treatment plants (only in 2019 a slight increase was recorded), and the share of polluted and insufficiently treated wastewater in relation to the total volume of wastewater discharge in 2020 was 10% (Strategy for the development of water policy in Ukraine...).

Despite some positive trends, major economic, environmental and social problems remain in the context of access to water resources, their use for domestic and industrial needs, and surface water quality. Against the background of ineffective water management policy on the use of water resources in industry and agriculture, inadequate state control over the level of danger of untreated water discharges, irrational land reclamation and drainage processes, the natural balance has been disturbed, leading to gradual desertification in certain regions, and increased risks of droughts and floods.

It is worth noting that the importance of effective management of water fund lands and water resources in both the global and national contexts is confirmed by their role in the approved Sustainable Development Goals of Ukraine until 2030 as one of the priorities of state and regional governance. As stated in (Sustainable Development Goals: Ukraine 2030): The National Water Strategy

should ensure the achievement of a good state of water resources and lay the foundation for overcoming the significant disproportion in access of the population to quality water supply and sanitation between urban and rural areas.

Thus, water resources are now becoming one of the determinants of the region's competitive advantages, a key factor in ensuring food security, economic development and demographic growth. That is why the management of such valuable natural resources requires the development of a new concept based on an integrated strategic approach, the main goal of which should be to protect, balanced use and preserve them for future generations.

In this context, the issues of identifying and systematizing the features and main directions of strategic water resources management as a determining factor in the revival of the industry at a qualitatively new level are becoming relevant.

In our opinion, the main goal of water resources management is to ensure a balance between the three vectors of sustainable development (economic, environmental and social), which are the triple imperative of state and regional policies in the field of development and protection, distribution and use of national resources.

It is with a focus on achieving a balance between the vectors of sustainable development that land use goals of regional systems should be developed. In this context, it should be noted that focusing on only one or two vectors leads to a significant reduction in the indicators of the vector that has been left out. For example, taking into account only environmental factors in water resources management will lead to a number of decisions that will limit the access of the population and business to the amount of resources necessary for effective functioning, which will lead to a social crisis and economic contraction. Focusing on social factors, without taking into account the other two, can lead to a deterioration in the ecological condition of water fund lands and relevant ecosystems, as well as financial opportunities for investing in the protection and restoration of water resources. Prioritizing ensure economic interests will lead to environmental degradation and social collapse. The vectors of development of the water resources management system define the priority tasks that should be implemented within the

management system at all levels (national, regional, territorial) and ensure a balance between the key imperatives of sustainable development.

We agree with the opinion of M.A. Shyrokov that water management should be based on the theoretical principles of management, taking into account the specific features of the object of management and the balance of interests of all stakeholders. In this aspect, the national water management model can be considered as an open system, where the system receives information about needs, financing, human and energy resources, etc. as input, and water management services, the state of natural and artificial reservoirs, energy, information, goods and services as output (Martienko & Bondarenko, 2015).

Thus, effective water resources management is implemented through the relevant management functions, which together contribute to the achievement of the defined development goals not only for the water fund lands, but also for the water complex as a whole, ensuring a balance of interests of all water users, as well as sustainable use of the available potential both in the context of meeting the current needs of the population and economy and in the long term.

Planning of works on protection and efficient use of land resources of the water fund involves creation of scientifically based plans for development of water basins, taking into account their potential to provide the population and economy with quality water in the required quantity in accordance with the capacity and projected needs, identification of discrepancies between the needs and potential of water resources and decision-making on elimination of these problems; planning of measures on protection and purification of water bodies, ensuring water safety, development of estimates, develop cost estimates for the tasks required to perform these tasks. Currently, the planning of work in the water resources management system is based on outdated approaches and covers mainly such areas as flood protection of settlements, repair and modernization of individual water supply and wastewater infrastructure facilities, and planning of measures to monitor the condition of individual water bodies. The existing plans do not contain a clear definition of tasks, indicators of their implementation

and sources of funding (usually funding is provided on a residual basis) and are not focused on the introduction of innovative technologies. Another disadvantage is the lack of high-quality information and analytical support for the planning system, and a clear systematization of indicators by different levels of management and areas of work.

The organizational function is realized primarily through the creation of effective organizational structures of water resources management, and a clear division of responsibilities, rights and powers of management and supervisory bodies. The water resources management system is currently being reformed to create effective basin management agencies. The Law of Ukraine “On Amendments to Certain Legislative Acts of Ukraine on the Implementation of Integrated Approaches to Water Resources Management on a Basin Principle” introduced structural changes in water resources management. In particular, river basin areas were established, basin councils were created, and a number of management tools were introduced: river basin management plans, schemes for water use and protection and water resources restoration, water balances, water monitoring, typology of water massifs, etc. A new procedure for state water monitoring has been defined, on the basis of which the preparation of monitoring programmes for river basin areas defined by law has been launched (Strategy for the development of water policy in Ukraine...). Despite some reforms in the organization of this sector, the old organizational model is still in place, as there is no legal framework that clearly defines the procedure for establishing relevant institutions and granting them powers in the relevant areas of management; the responsibility of state bodies in facilitating the process of establishing basin management and coordinating it has not been defined; mechanisms for covering the costs of providing water services and covering the costs of functioning of bodies at all levels have not been formed.

In our opinion, the motivational mechanism in the system of management of water fund lands and water resources should be improved by:

- introduction of economic incentives in the form of reduced taxation rates or preferential depreciation for enterprises and organizations that introduce new technologies aimed at water

purification and reuse in production processes; reduction of harmful emissions into surface water bodies; innovative irrigation systems;

- introduction economic incentives in the form of state subsidies, preferential taxation or state participation in partial cost coverage for utilities that provide water supply and sewerage services to the population and introduce innovative technologies, etc.;

- improvement the system of personnel remuneration in the system of management, distribution and control over the implementation of state policy in the water sector.

In order to implementation integrated water resources management on a basin principle, 12 basin water resource management agencies and 13 basin councils have been established in Ukraine. However, the issue of division of powers between the State Agency of Ukraine for Water Resources and other authorities' offices in the regions is still being debated, which causes duplication of powers.

Thus, the implementation of the regulatory and control functions is currently limited due to the lack of a unified water cadastre and water accounting system, gaps in the regulatory framework for the distribution of powers between different levels of government; duplication of supervision and control functions at the state and regional levels, and the absence of transparent mechanisms and 'rules of the game' on the water market. Effective implementation of this function requires, first of all, improvement of the organizational structure and creation of a regulatory framework that defines the functions and regulates the rights, powers and responsibilities of state institutions and officials in water resources management; creation of a unified information system for accounting for surface, groundwater and other water bodies and standards for their assessment; digitalization of water management using GIS technologies.

Undoubtedly, the conceptual basis for the formation of an effective water resources management system is an appropriate strategy that defines the main imperatives of water policy, which are guidelines for decision-making at all levels, creates framework conditions and criteria for the use of available water potential, and establishes uniform rules for all participants on the water market. The water strategy is also the basis for adapting the relevant regulatory framework, creating appropriate institutional and

economic mechanisms of water management at all levels.

The strategic aspects of water resources management in Ukraine are defined in the Draft Water Strategy of Ukraine and set the following main tasks in the field of water management and protection for the period up to 2030:

- preparing the necessary changes to the legislative framework, in particular in terms of implementing the basic rules that comply with the terms of the EU-Ukraine Association Agreement and international norms in this area;

- forming a system of modern surface water quality monitoring using innovative technologies;

- reforming the organizational structure of water resources management based on the basin principle and regulating relations in this area;

- creating river basin management plans.

The strategic goal and key objectives of the Strategy are shown in Figure 4.14.

Regional strategies can be separately distinguished, characterized by a certain combination of resource and sectoral strategies at the level of individual administrative units. Regional strategies take into account, first of all, the level provision of freshwater resources in the region, the structure of the economy by type of economic activity, the number and structure of the population by type of settlement, and forecasts of the development of these indicators.

Given the specific features of the water management sector, it is proposed to develop sectoral strategies based on the criterion of the entity consuming water resources and the ultimate purpose of their use. Thus, a separate strategy is required for:

- primary water users, i.e. state and municipal water supply and sewerage services that carry out centralized water intake, water distribution and sewerage;

- secondary users – households, government agencies, enterprises in various industries.

These entities are differentiated depending on the volume of consumption, purposes and specifics of use, and the level of impact on the ecological status of water bodies. Strategies in this context should promote the most equitable distribution of water resources among individual entities by differentiating the relevant tariffs,

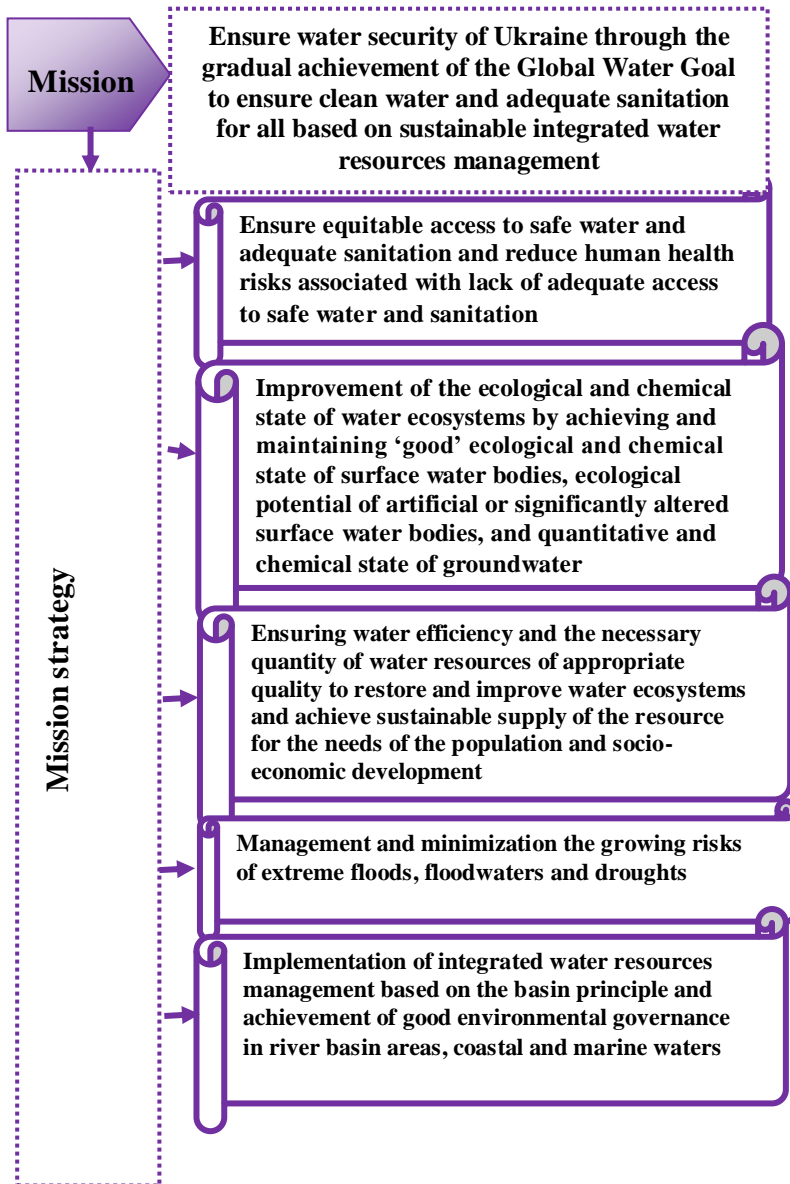


Figure 4.14 Mission and goals of water resources management of Ukraine (Serbo, 2021; Strategy for the development of water policy in Ukraine...)

defining a list of restrictions on additional taxes for insufficient treatment of water discharged into the environment, and promoting the overall re-equipment and modernization of technologies in the industry on an innovative basis.

The general structure of the sectoral strategy in terms of individual consumers should include the components shown in Figure 4.15.

For each type of user, it is advisable to develop a differentiated combination of strategy components that will ensure balanced water consumption, equitable distribution of resources, minimize environmental impact, stimulate the modernization of technical systems on an innovative basis and generally contribute to the achievement of sustainable development goals of socio-economic systems.

Resource strategies determine the choice of alternatives to provide the strategy implementation process with the necessary types of resources, namely: material, financial, human, energy and information.

Accordingly, for each type of resource, a strategy is developed that determines the amount of resources required the selection of the most optimal sources of their attraction, and ways to optimize their use.

Undoubtedly, in addition to an effective system of water resources control and administration, the introduction of new technologies aimed at cleaning freshwater bodies and promoting the rational use of water resources is an important factor in implementing an innovative model of sustainable use of freshwater resources in the regions. The intensification of such work requires sufficient funding and additional investment in the sector.

In order to explore all opportunities in attracting investments and other sources of funding for projects to provide the population and regional economies with sufficient quality water, the Government established the Interagency Coordination Council on Water Resources of Ukraine. The Council will allow to establish coordination of activities of all parties in the formation and implementation of state policy in the areas of drinking water, water supply and sewerage, etc. (Irtysheva et al., 2022b).

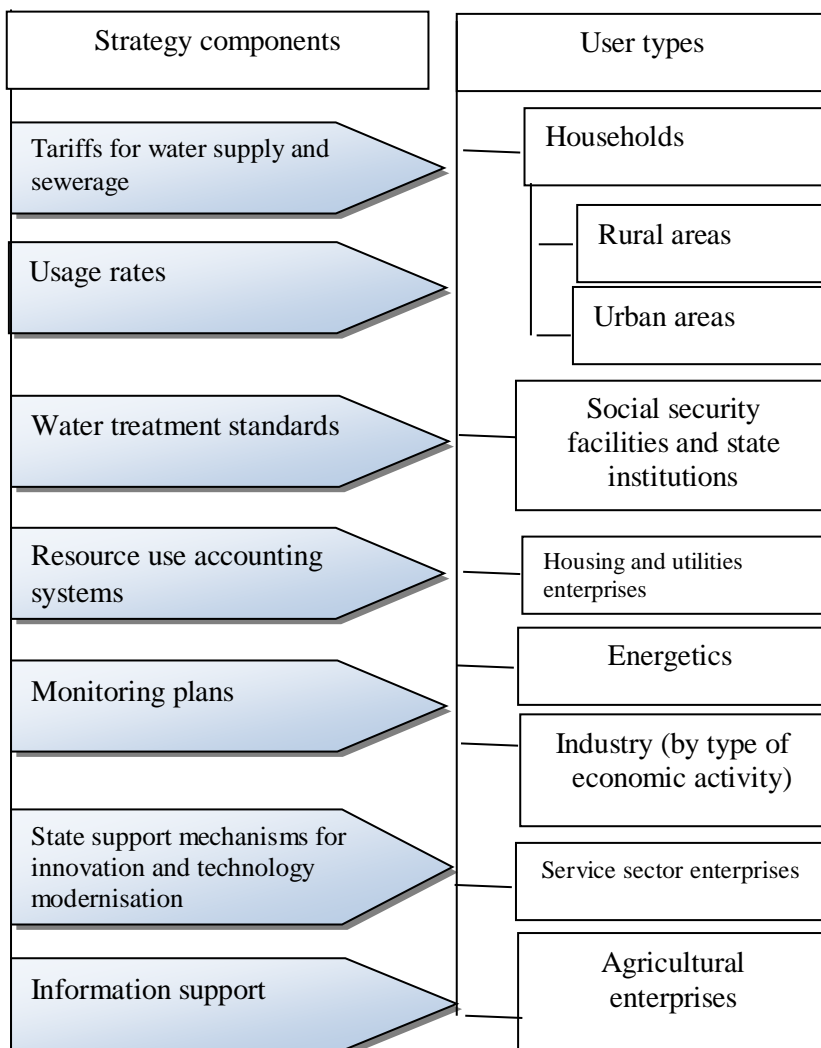


Figure 4.15 Components of a water management strategy according to types of users (Serbov, 2022)

Statistical data show that currently, the main source of funding for water sector expenditures is the state and regional budgets. In 2015-2019, the gross amount of funding for the sector almost doubled (Table 4.12), which indicates the priority of this sector for the

development of the economy and territories. In terms of the main directions of financing during the analyzed period, the largest growth was observed in the area of financing the costs of water management and administration, which is associated with the reform of the sector and the introduction of information technology in management.

Analysing the structure of budget expenditures for the development of the water sector, it should be noted that 91% of the budget is spent on the operation of the state water sector and water resources management. During the period under review, the share of this item increased by 6.6%. A negative aspect is the negligible share of expenditures on innovative developments in the water sector. For example, expenditures on the development of applied scientific and technical research and development, and the performance of work under the state order in the field of water sector development in 2015-2020 amounted to only 0.013-0.09%.

During the study period, there has been a significant increase in capital investment in the protection and restoration of water resources. Over the past 10 years, investment volumes have increased by 115%, which has had a positive impact on the condition of water bodies. However, given the high level of deterioration of the water sector infrastructure, which, according to the State Statistics Service, averages 63% of available investments, it is not enough to transition the water sector to an innovative model of sustainable development, and studies have shown that more than 98% of investments are directed primarily at eliminating current problems in the water sector and almost no funds are invested in the development of innovative activities in this area.

At the same time, the analysis of data on the implementation of public-private partnership projects in Ukraine showed that this tool in the development and use of infrastructure, including municipal infrastructure, is at an early stage. The total number of public-private partnership projects in Ukraine is growing, but at a very slow pace. In particular, according to (Zakharchuk, 2011; Serbov, 2021), as of 01 January 2021, 192 agreements were concluded on the terms of public-private partnership, of which 39 agreements are being implemented (29 concession agreements, 6 joint venture agreements, 4 other agreements), 153 agreements are not being implemented (118 are not being implemented, 35 have been terminated/expired).

Table 4.12

The goals and indicators of sustainable development in the Black Sea Region of Ukraine (Serbov, 2021)

Indicators	Mykolaiv region		Odesa region		Kherson region	
	2015	relative to the average in Ukraine (+;-)	2015	relative to the average in Ukraine (+;-)	2015	relative to the average in Ukraine (+;-)
1	2	3	4	5	6	7
1. Ensure access to quality safe drinking water services						
Compliance with sanitary standards of rural drinking water supply sources, %	7.8	0.2	8.7	1.3	2.8	-4.8
Water consumption for drinking and sanitation needs, m ³ per person	26.7	0.9	35	1.18	36.4	1.23
Compliance with sanitary standards of municipal water supply sources, %	3.8	-0.8	7	2.4	2.8	-1.8
Share of rural population with access to centralized water supply, %	57	32.8	35.4	11.2	85	60.8
Share of urban population with access to centralized water supply, %	100	10.6	95.3	5.9	100	10.6

1	2	3	4	5	6	7
2. Ensure the availability of modern wastewater systems, building and reconstruction of water intake and sewage treatment facilities using the latest technologies and equipment						
Share of rural population covered by centralized sewerage, %	3	-1.1	19	14.9	1	-3.1
Share of urban population with access to centralized sewerage systems, %	100	27	85	12	100	27
3. Reduce the volume of untreated wastewater discharges, primarily through the use of innovative water treatment technologies at the state and individual levels						
Discharge of polluted (untreated and insufficiently treated) wastewater into water bodies, mln. m ³	0	0	44	0.05	0	0
Share of polluted (untreated and insufficiently treated) wastewater discharges into water bodies in total volume discharges, %	0	-87.81	25	3.36	0	-6.67
4. Increase the efficiency of water use						
Water intensity of GRP, cu. m. of water used per 1000 UAH of GDP (in actual prices)	4.83	1	7.62	1.56	45.51	935

Among the main problems of implementing public-private partnerships in the field of water supply and sewerage in Ukraine (which is typical for all infrastructure projects), scientists note:

- lack of a logical and clear system of legal regulation of relevant relations (inconsistency between the laws “On Public-Private Partnership”, “On Concessions” and several laws regulating concession agreements in the areas of road construction, municipal heating and water supply facilities, state-owned fuel and energy facilities and its infrastructure);

- investor uncertainty; cautiousness and uncertainty of public authorities;

- low institutional capacity of central and local authorities;

- lack of public awareness in this area; high risks (State Agency of Water Resources of Ukraine);

- unregulated mechanisms for setting tariffs for the provision of services;

- dependence of economic relations on changes in the political situation;

- high level of corruption, in particular in the area of licensing;

- legislative instability and uncertain economic prospects in Ukraine.

One of the promising directions of funding diversification and organization of individual activities aimed at improving the environmental situation of water resources, information activities on sustainable environmental management and solving certain clearly defined problems of the sector in a particular region is the involvement and support of NGOs. Projects implemented in the water management sector jointly with NGOs were successfully implemented in Lviv, Volyn and Cherkasy regions (Irtyshheva et al., 2022b).

The above data shows that the practice of financing regional programmes in the field of sustainable water use jointly with NGOs is not widespread in Ukraine. In our opinion, it is the regional authorities and local communities that should initiate programmes aimed at efficient use of water resources and attract various sources of funding, including funds from regional environmental protection funds.

Efficient use of freshwater resources is an extremely urgent issue

in the Black Sea region of Ukraine due to their uneven distribution over the territory, high level of strategic needs and difficult environmental situation.

It should be noted that, in terms of water availability, Mykolaiv and Odesa regions are classified as regions with an average specific level of water supply, and Kherson region is classified as a region with a high level (Serbov, 2021). Within the Black Sea region (excluding the temporarily occupied territory of the Autonomous Republic of Crimea), there are different levels of water supply, which is due to natural and geographical factors. Thus, the level of specific provision of the population with river runoff compared to the average value for the regions of Ukraine is 72% (Mykolaiv region), 85% (Odesa region) and 95% (Kherson region).

Despite the different levels of freshwater supply to the territories and population by region, the region faces a number of common problems with regard to the state of water supply and the efficiency of water potential use, including:

- uneven distribution of water resources across the territory of region;
- high level of deterioration of equipment at pumping stations and other water infrastructure facilities;
- imperfect control system and significant of volume the pollutant discharges;
- poor quality of drinking water for the population;
- irrational use of water resources, pollution by household waste, runoff from industrial enterprises, agricultural waste, etc.

The analysis conducted of the state of water resources availability and trends in the use of water resources in the Black Sea region of Ukraine showed the impact of structural changes in the economy, namely the reorientation from industrial to agricultural specialization, which has a different impact on the use of water resources and the nature of their environmental pollution. The existing potential requires the introduction of innovative models focused on resource conservation, improvement of technologies in all processes related to the provision, use and treatment of used water.

Table 4.12 shows the Sustainable Development Goals land resources of the water fund in terms of key indicators in the Black

Sea region at the starting point (2015), as well as the level of their compliance with the average value. The data table highlight the main problems of the region at the initial stage of implementation, which should be addressed by both regional authorities and the state, as well as the benefits whose development should be supported.

Using the proposed approaches, the authors have monitored the implementation of the Sustainable Development Goals of water resources in the Black Sea region for the period 2015-2019.

Metrics and indicators of sustainable development of water resources in Ukraine and the Black Sea region are presented in Table 4.13:

- social vector (X);
- ecological vector (Y);
- economical vector (Z).

Table 4.13

Metrics and indicators of sustainable development of water resources in Ukraine and the Black Sea region (Serbov, 2022)

Indicators		Ukraine		Mykolaiv region		Odesa region		Kherson region	
		2015	2019	2015	2019	2015	2019	2015	2019
SOCIAL VECTOR (X)									
X1	Water consumption for drinking and sanitation needs, m ³ per person	29.6	27.2	26.7	26	35	33	36.4	36
X2	Compliance with sanitary standards of municipal water supply sources, %	2.4	2.5	3.8	3.9	7	6.8	2.8	2.5
X3	Share of rural population with access to centralized water supply, %	24.2	24.1	57	58	35.4	36	85	84
X4	Share of urban population with access to centralized water supply, %	89.9	26	100	100	95.3	97	100	100

X5	Share of rural population covered by centralized sewerage, %	4.1	4.8	3	3.8	19	21	1	1.8
ECOLOGICAL VECTOR (Y)									
Y1	Polluted (untreated or insufficiently treated) wastewater discharged into water bodies, mln. m ³	35.58	18.75	21	20	44	36	0.2	1
Y2	Volume of recycled and consistently (re)used water, mln. m ³	1670	1393	3141	3353	120	72	21	18
Y3	Treatment capacity, mln. m ³	214.3	203.7	67	56	281	276	102	137
ECONOMICAL VECTOR (Z)									
Z1	GRP water intensity, m ³ of water used per 1000 UAH of GDP (in actual prices)	23.85	10.3	4.83	2.5	7.62	4.39	45.5	42
Z2	Specific investments in water protection measures, UAH/1000 m ³ of water used	87.5	157.9	23.4	242.7	6.2	38.2	2.4	1.8
Z3	Productivity of water use in agriculture, UAH of agricultural products / 1 m ³ of water used	37.4	51.5	74.6	86.4	27.9	27.4	7.8	6.2

Figure 4.16 shows a general scheme of the metrics system of sustainable water use and its corresponding indicators.

In general, the results of the calculations showed that in all regions there is some progress in the context of the transition of the system management of land resources water fund to an innovative model of Sustainable development. This is evidenced by the obtained values of the vectors, which together characterize the movement as progressive. In terms of individual indicators, it is possible to analyze the position of the region relative to others, as well as the comparative speed of reforms in the sector. In the context of the implementation of the social vector, it can be concluded that there are certain positive developments in all regions. The scores received do not differ significantly. Odesa region has the greatest achievements in this area (2.84). The relatively strong positions of Mykolaiv (5.95) and Odesa (2.76) regions in terms of economic vector development are characteristic, due to the relatively low water intensity of GRP, investments in water resources treatment, and a fairly high level of water productivity in agriculture. In Kherson region, these indicators are lower than the normative value, and progress in their improvement has been insufficient over the past 5 years, which has led to a negative value of the economic vector.

Despite the high level of water resources availability in Kherson region, their use in the economy and to meet the needs of the population is not efficient enough. In the region is the worst performer among other regions in terms of implementing the Sustainable Development Goals in terms of providing rural population with central water supply and sewerage systems and the quality of water supplied to the population for domestic and sanitary needs.

In order to implement the model of regional management of land resources water fund in an innovative way, in addition to updating the system of investment and financial ensure, it is important to use innovative forms of interaction in the field of water use, in particular public-private partnerships. Satisfaction of personal water needs of the population and water supply of the economic sphere to depend on the system of management of water facilities, which explains the impossibility of full transfer of the latter to private ownership.

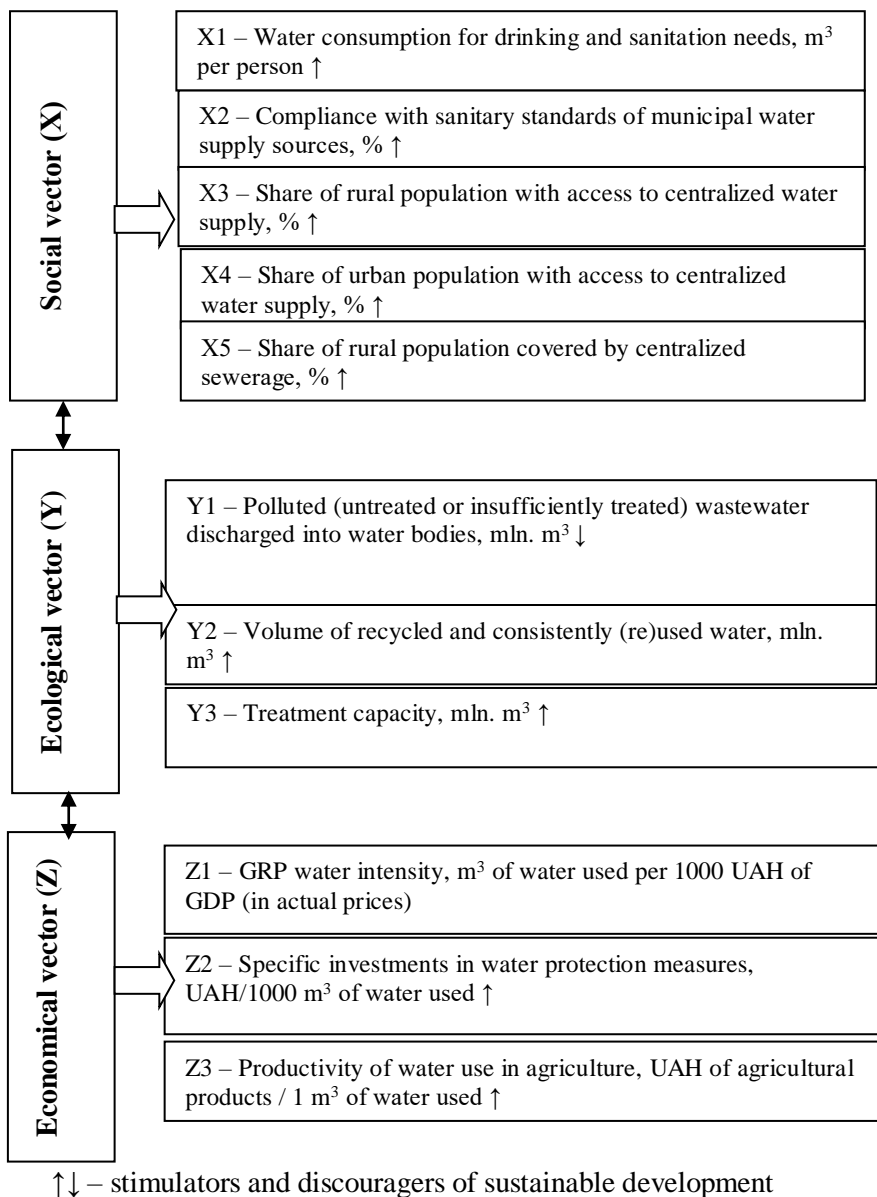


Figure 4.16 Indicators for assessing the use of water resources in the region in the context of sustainable development (Serbov, 2021)

Therefore, it is necessary to develop opportunities to expand state ownership with the involvement of entrepreneurial capital in the area of management of freshwater resources, which will allow commercialization of water management activities and preserve state control over the water supply system, since the main management tools (taxation, government procurement, tariff policy, control over the state of natural resources and the quality of water services) always remain within the competence of state bodies.

The results of achievement the Sustainable Development Goals for water resources in the Black Sea regions by the main vectors are illustrated in Figure 4.17, which clearly shows that the governance mechanisms aimed at the development and sustainable use of water resources in the region are not sufficiently balanced. The most organic growth within the main vectors was achieved in Odesa region. As we can see, the main priorities for providing water resources to the population and economy of the region are being met.

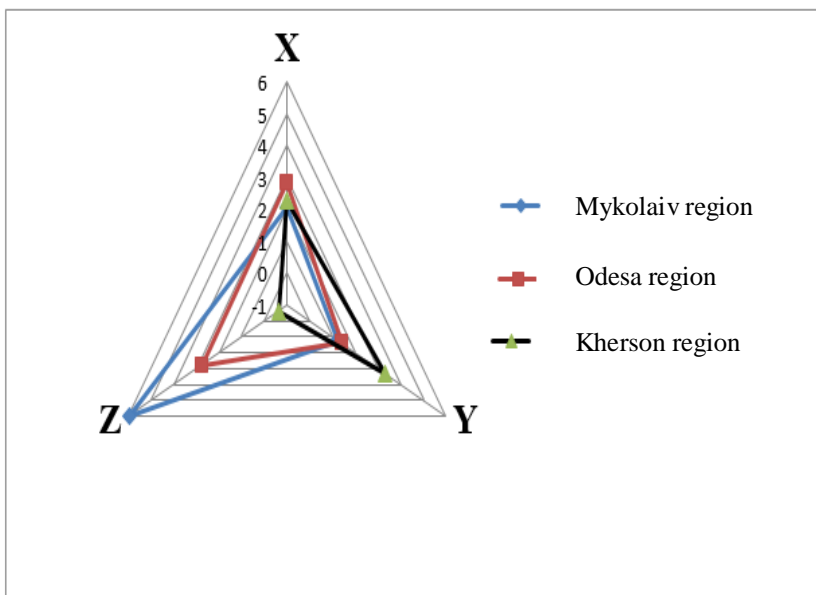


Figure 4.17 The level of achievement of the Sustainable Development Goals of the water sector in the Black Sea region of Ukraine (Serbov, 2021)

The formation of an innovative model of regional freshwater resources management in terms of sustainable development requires the transformation of the target orientations of the water management complex functioning towards meeting the needs of present and future generations in freshwater resources, ensuring a safe environment and protection against the natural hazards of water, which should facilitate the necessary institutional and structural transformations at the level of regions, districts and communities. Therefore, the guidelines are being formed of the strategic development of the regional freshwater management system, according to which public activity, ensuring the balanced use of natural and economic resources, including human capital, based on diversification of innovative forms of relations in the management system itself in the context of institutional transformations, are gaining significant importance.

The innovative model of regional freshwater resources management in terms of sustainable development should fully comply with the Sustainable Development Goals, i.e., the conceptual unity of the Sustainable Development Goals and the goals of water territorial systems development should be monitored (Figure 4.18).

Sustainable water resources management is not only a part of the concept of sustainable development of Ukraine and other countries in the world, but also a part of the system of sustainable management of land resources of water fund, which is the responsibility of the Ministry of Environmental Protection and Natural Resources of Ukraine. State water resources management is an activity aimed at overcoming existing water and environmental threats in the country, creating favourable conditions for sustainable, environmentally safe water use, reproduction and protection of all water resources in the country, taking into account their transboundary significance, as well as water ecosystems (Measuring the achievement of sustainable development goals...).

The socio-humanitarian component in the formation of an innovative model of regional water resources management that meets the principles of sustainable development is of great importance. In the model of regional management of land resources of water fund in terms of sustainable development, there should be a structural subordination of subject-object relationships to objective natural,

ecological and economic laws, taking into account the specific characteristics of water management activities. For effective development of regional ecologically balanced water resources management, it is important to preserve the laws of proportionality of economic and social development, use and reproduction of natural resources, evolution of production relations and laws of functioning of water resource potential of regions as the basis for sustainable livelihoods and sustainable economic development.

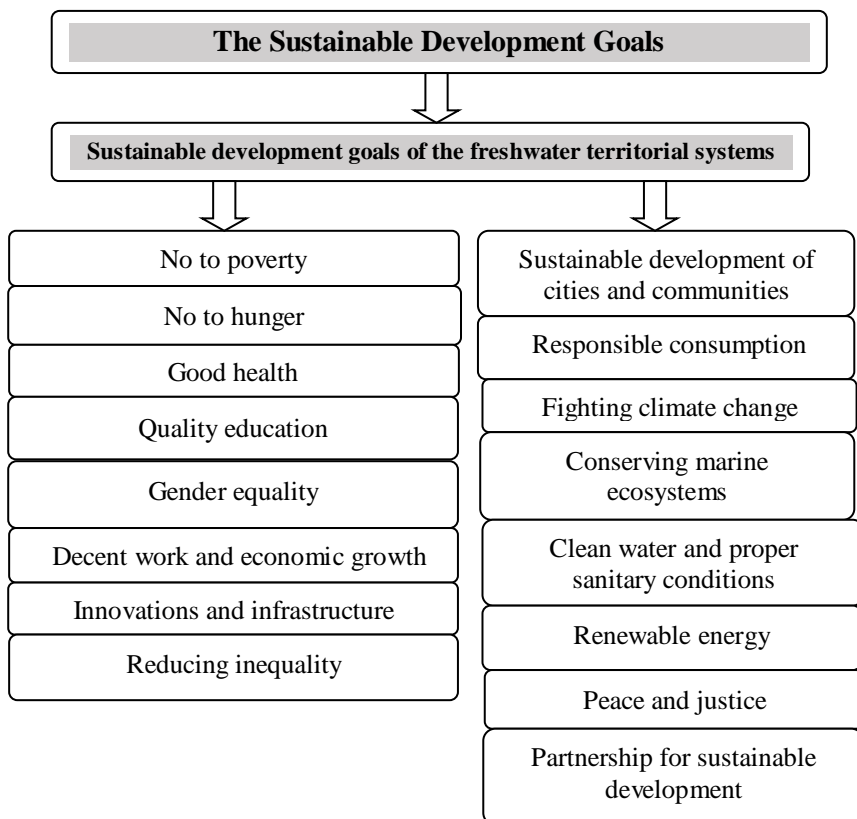


Figure 4.18 Conceptual unity of the Sustainable Development Goals and the development goals of water territorial systems (Global Sustainable Development Goals)

An equally important direction of the formation of an innovative model of water resources management is the further implementation of reforms in the management of the sector, as well as the development and implementation of digital technologies. Integrated GIS technologies into the water resources cadastre system simplify the systems of water resources accounting in the regions, their quantitative and qualitative characteristics, and determine their territorial location, which will create preconditions for more efficient spatial planning of territorial development, optimization of housing and communal services, development of agriculture and industry.

Conclusion

Based on the results of the study, the following conclusions were made:

1. It is noted that effective land use of water resources is implemented through the relevant management functions, which together contribute to the achievement of the defined goals of the water sector development, ensuring a balance of interests of all water users, as well as sustainable use of the available potential both in the context of meeting the current needs of the population and the economy and in the long term.

2. It is substantiated that at the present stage of development of the national economy in the context of global trends, environmental forecasts and social challenges, the obvious and non-alternative goal of rational management of water fund lands is to ensure a balance between the three vectors of sustainable development (economic, environmental and social), which are the triple imperative of the state and regional policies in the field of development and protection, distribution and use of national resources. Achieving this goal requires the developing of a unified strategy that will define the main imperatives of water policy, which are guidelines for decision-making at all levels, create framework conditions and criteria for the use of available water potential, and unified rules for all participants in the water resources market.

3. The main components of the national water strategy (regional, sectoral and resource) are identified and characterized, which together will contribute to its implementation in various areas of land use, water management and at different levels of government.

4. Analyzed by the ecological situation and peculiarities of water resources use in the Black Sea region. It has been established that despite the different levels of water supply to the territories and population in terms of regions, the region is characterized by a number of common problems regarding the state of water supply and the efficiency of water potential use, including: uneven distribution of surface freshwater bodies and river flows across the region; high level of depreciation of equipment the water infrastructure entities; poor quality of drinking water for the population; irrational use of land resources of water fund of the region.

5. In order to simplify the implementation of sustainable development indicators in the regional planning system and to improve the system of information support of the processes of forming a model of sustainable innovative development of land resources of water fund, methodological approaches to measuring and assessing sustainable water use have been improved. The proposed approaches include: a detailed system of indicators for assessing the process of sustainable water use in terms of the main vectors of sustainable development, mathematical tools of assessing the region's progress towards sustainable water use and identifying the main problems in terms of individual metrics and indicators, which can become an analytical basis for the develop of regional strategies of balanced resource consumption.

6. The main directions of improving the system of investment support for innovative development of water management systems in the region are outlined, including: improvement of regulatory support and development of public-private partnership, including in the form of energy service contracts, etc.

7. Develop a model of sustainable socio-humane and environmentally balanced management of land resources of water fund at the regional level, which takes into account innovative forms of interaction in the field of water use (corporatization, clustering, concession, capitalization, creation of holdings and associations) and the important role of public-private partnership. The proposed model requires the transformation of the target orientations of the water sector's functioning towards meeting the needs of present and future generations in water resources, ensuring a safe environment and protection from the harmful effects of water, which should facilitate

the necessary institutional and structural transformations at the level of regions, districts and communities.

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MSc. Zhuldyz Yespolova
ORCID: <https://orcid.org/00000001-9242-8773>
PhD Student
VSB-Technical University of Ostrava
(Ostrava, Czech Republic)

**INNOVATION AND
MANAGEMENT IN
THE DEVELOPMENT
OF KAZAKHSTAN'S
RAILWAY INDUSTRY:
LESSONS FROM THE
CZECH REPUBLIC**

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Abstract

This study explores the role of innovation and strategic management in enhancing the competitiveness of Kazakhstan's railway industry, drawing lessons from the Czech Republic. Using a comparative analysis of institutional environments and innovation systems, it identifies mechanisms for aligning Kazakhstan's railway sector with European standards and global trends, ensuring sustainable development and increased competitiveness.

Keywords: *competitiveness, innovation, strategic management, railway industry, Kazakhstan, Czech Republic, sustainable development, European integration.*

Introduction

In the modern global economy, enhancing the competitiveness of national industries is a critical priority. This requires not only improving the quality of products and services but also adopting sophisticated methods to account for numerous internal and external factors that influence long-term socio-economic development. Drawing from global experiences, such as the United States' comprehensive initiatives on competitiveness, it becomes evident that innovation and strategic management play pivotal roles in shaping sustainable economic growth. The U.S. Federal Law on "Competitiveness and Trade" and the establishment of supportive institutions have demonstrated the transformative power of long-term strategies, innovation policies, and cluster development in fostering economic resilience.

Kazakhstan, aspiring to strengthen its railway industry within the context of economic globalization, can benefit significantly from the

lessons learned in other countries. The Czech Republic, with its established institutional frameworks and focus on integrating innovation into transport and logistics, provides a compelling case for analysis. Michael Porter's theory of competitive advantage, emphasizing the creation rather than inheritance of prosperity, further underlines the importance of innovation-driven development in achieving long-term competitiveness.

This study explores how innovation and strategic management can drive the competitiveness of Kazakhstan's railway industry, drawing lessons from the Czech Republic's practices. By examining the institutional environments and innovation systems of both countries, the research seeks to identify effective mechanisms for enhancing Kazakhstan's railway sector in the context of global economic integration.

Through a comparative analysis, the study highlights the importance of fostering innovation, building collaborative networks, and creating supportive policy frameworks to sustain competitive advantages. The findings aim to offer actionable insights into aligning Kazakhstan's railway industry with global best practices while addressing the challenges and opportunities of integrating European standards.

Materials and Methods

This study uses a systematic approach to analyze and develop recommendations for stimulating innovation activity in railway transport. The methodology involves assessing the level of innovation activity at enterprises, as well as the external and internal factors influencing this process, using various indicators. The research begins with analyzing the current level of innovation activity, including indicators such as technological capacity, market competition, availability of funding, and the readiness of enterprises for change. Based on this data, one of the following approaches is selected: competitive – for enterprises in highly competitive markets, administrative – for markets with low competition, cooperative – for enterprises facing consumer pressure, and proactive – for monopolies, focusing on R&D participation and forming partnerships with scientific organizations.

Feuerstein's research on open access competition in European passenger rail systems explores how political, legal, and economic

factors affect market efficiency and customer satisfaction. Kazakhstan could benefit from similar frameworks to improve market efficiency and services. Goloskokov emphasizes innovation-driven development in global transport systems, highlighting its importance for Kazakhstan's infrastructure modernization and international connectivity.

Ahmad identifies structural barriers to innovation in the UK rail industry. For Kazakhstan, overcoming these through strategic management could boost competitiveness.

Uskenbayeva analyzes Kazakhstan's transport infrastructure, identifying growth areas crucial for enhancing the country's railway sector and regional competitiveness.

Additional studies, such as those by Molokovitch (2019), Akhmedov (2024), Assanova et al. (2021), Bazarbekova et al. (2018), and Chmelík et al. (2010), provide further insights into Kazakhstan's transport and logistics sector, offering a comprehensive view of its challenges and prospects for development.

The methods include a comparative analysis of innovation activities in Kazakhstan and other countries, such as the Czech Republic, to identify best practices and recommendations for adaptation in Kazakhstan. By combining diagnostic tools, tailored approaches, and practical measures, this research provides a comprehensive approach to fostering innovation in Kazakhstan's railway sector.

Results and Discussion

In the context of the competitiveness of railway transport in Kazakhstan and the Czech Republic, an analysis of the transport infrastructure in the Czech Republic provides valuable insights for developing recommendations to improve Kazakhstan's transport system. The Czech Republic plays a crucial role in Central and Eastern Europe, and its transport network serves as an example of an efficient, multi-level approach to organizing transportation, making it an interesting subject for comparative analysis with Kazakhstan.

As seen in the description of the Czech transport system, railway transport is a key component of the country's infrastructure. With a network exceeding 16,000 km, the Czech Republic boasts one of the highest densities of railway tracks in Europe. This illustrates how a well-developed railway network can be a major driver for economic

development, including the tourism sector, which is directly relevant to the topic at hand. Railway services in the Czech Republic are integrated with other modes of transport, providing connections to international routes and major European cities. Similarly, Kazakhstan, due to its geographic location and strategic importance in the Eurasian region, also holds great potential in this regard.

Comparing the Czech system reveals key aspects that could contribute to improving the competitiveness of Kazakhstan's railway transport. First, the density and quality of the railway network in the Czech Republic provide high mobility for both domestic and international travel. This highlights the importance of investment policies in infrastructure and the need for modernization of existing transport routes in Kazakhstan. Second, the well-developed transport network strengthens the country's attractiveness for tourism, which could become an important factor in the growth of both domestic and international tourism in Kazakhstan.

Moreover, the Czech Republic makes active use of water and air transport, which also plays a role in improving the competitiveness of rail transport. The multi-modal transport system helps reduce the load on individual transport modes, improving overall efficiency. This offers a valuable lesson for Kazakhstan, where integrating various transport modes and developing multi-modal transportation will enhance logistics infrastructure and its efficiency.

The experience of the Czech Republic shows that the development of transport infrastructure, including railways, requires a comprehensive approach that includes not only infrastructure modernization but also integration with other transport modes and active participation in international transport projects. For Kazakhstan, with its strategic location and potential to develop transport corridors, such an approach could be key to improving the competitiveness of its railway sector and stimulating growth in other economic sectors.

The Czech Republic represents a country with a developed innovation system that is highly effective and actively participates in international initiatives such as European Union programs. In recent decades, the Czech Republic has significantly strengthened its position in scientific research, innovation, and technology. State support for innovation in the Czech Republic includes government

programs aimed at stimulating applied research and development, such as the Opera Program and the Technological Agency of the Czech Republic (TA CR), which fund innovative projects in priority sectors of the economy. Key scientific research institutions such as the Czech Academy of Sciences and universities, including Charles University, focus on both basic and applied research.

A key aspect of the Czech innovation system is the active development of projects in digitalization and industrial automation, with a focus on Industry 4.0, which allows the Czech Republic to significantly increase the efficiency of industrial production. The country also develops innovation clusters and technology parks, such as Brno Technology Park and Plzen Innovation Cluster, which support the growth of startups and technology companies by providing them with necessary resources to implement innovative projects.

In the Czech Republic, there is a centralized system of innovation management, which enables effective coordination between government and private entities. An important element of this system is the support for small and medium-sized businesses, including tax incentives and financial assistance for startups. The Czech Republic is actively involved in international scientific and technological projects, which gives it access to cutting-edge technologies and knowledge. The country also actively cooperates with the European Union through the Horizon Europe program and participates in the Digital Single Market of the EU.

A comparison with the Czech Republic shows that innovation support systems in the country are more developed. The country actively implements projects related to industrial automation and digitalization, focusing on key sectors of the economy such as mechanical engineering, biotechnology, and nanotechnology. The Czech Republic also supports innovation research through state laws and programs that promote the development of applied scientific research and technologies. Furthermore, the Czech Republic has a more centralized system of managing scientific and innovation activities, which allows for effective coordination between the public and private sectors. At the national level, several initiatives aimed at supporting entrepreneurship are in place, and programs for small and medium-sized enterprises are actively developing, in contrast to

Kazakhstan, where support systems remain weak and require improvement.

Table 4.14

Comparative assessment of innovation systems in Kazakhstan and the Czech Republic

Criteria	Kazakhstan	Czech Republic
Legal and Programmatic Framework	Developing, based on general legislative foundations	More detailed, with specific laws and innovation programs
Innovation Infrastructure	Regionally differentiated, less specialized	More centralized, with sector-specific innovation hubs
Financial Resources	Limited funding, largely dependent on national budget	Greater financial resources, participation in EU programs
Focus Areas	Broad regional focus, less specialization in sectors	Specific focus on industries like biotechnology, automation, and nanotechnology
Support for SMEs	Limited, needs improvement	Strong support, including tax incentives and financial assistance
International Cooperation	Limited involvement in international programs	Actively involved in EU initiatives and international innovation projects

Legal and Programmatic Framework: Both Kazakhstan and the Czech Republic have developed their institutional innovation systems, based on similar models with a focus on legislative foundations and program content. However, the innovation programs in the Czech Republic are more detailed, particularly in supporting industrial implementation, which is the result of the country’s more developed industrial and innovation potential.

Innovation Infrastructure Structure: While the structures of innovation infrastructure in both countries have superficial similarities, a deeper analysis shows that Kazakhstan’s innovation system is characterized by a more pronounced regional differentiation.

Financial Resources: The Czech Republic has significantly greater financial resources for innovation thanks to participation in EU development programs and other international initiatives. In contrast, Kazakhstan's innovation system faces greater financial constraints and less involvement in similar international programs. This difference underscores the need for Kazakhstan to increase its participation in programs within the Eurasian Economic Union to improve the development of innovations in priority sectors of the economy.

In modern conditions of railway transport development, there is a need to transition to process management of innovation activities. This means adopting a comprehensive approach to addressing industry development issues, considering the influence of other sectors of the economy and global developments in science, technology, and innovation. Unlike functional and project-based approaches, the process approach to management involves the application of basic principles from systems theory, focusing on the effectiveness and quality of innovation activities. This allows for the continuity and reproducibility of innovation processes, which continuously improve and rationalize core activities, increasing their efficiency and business competitiveness.

Innovation activity indicators, on the one hand, characterize the target state of organizations, set specific development goals, and based on this, define the scope of activities and projects for the innovation development of railway transport. On the other hand, the current values of these indicators and their dynamics are necessary for monitoring innovation processes and making decisions about additional stimulation of innovation activity. The set of indicators allows an objective characterization of the initial level of innovation activity, which determines the choice of approach to stimulating innovation activity. Based on the analysis of the indicators used for analyzing innovation activities, groups of criteria reflecting various aspects of innovation activity in railway transport organizations have been identified (Table 4.15).

The analysis has shown that, despite the diversity and nature of innovation activity in railway enterprises, they can be structured into six main groups, forming the basic factors:

Table 4.15

Criteria for selecting indicators characterizing the level of innovation activity in railway transport organizations

Criteria that should characterize the indicators	Purpose of the indicators, areas of application	Examples of selected indicators by criteria
Novelty	Reflects the complexity of the implementation process, work composition, and risk level	<ul style="list-style-type: none"> - Duration of the useful life of innovation results (low, medium, high); - Level of novelty (absolute, sectoral, regional, etc.)
Functional activity of innovation	Reflects the structure of the innovation portfolio	- Share of technological, marketing, organizational innovations
Availability of investment resources	Characterizes the structure of the investment budget	<ul style="list-style-type: none"> - Material resources - Labor resources - Financial resources, etc.
Type of innovation	Reflects the complexity of the innovation process, from idea to commercial implementation	<ul style="list-style-type: none"> - Share of innovations that have been practically applied (commercialization) - Number of related and intermediate innovations
Scale of innovation processes	Characterizes the level of innovation implementation in production activities	<ul style="list-style-type: none"> - Level of innovation implementation (absolute, sectoral, regional, intra-holding, etc.) - Number of staff using the innovation (in the industry, within the holding, etc.) - Volume of exported innovative products - Volume of provided services
Dynamics of innovation processes	Characterizes the time period required for the implementation and/or realization of innovation	<ul style="list-style-type: none"> - Duration of the innovation production cycle - Sequence of implementation - Duration of the innovation development process

Capital intensity of innovation processes	Characterizes the volumes and sources of attracting financial resources	<ul style="list-style-type: none"> - Volume of own funds - Volume of borrowed funds - Volume of foreign borrowings (foreign banks) - Volume of domestic borrowings (Russian banks) - Ways of attracting funds (bond placement, loans, additional issuance of shares, etc.)
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1. Economic factors – such as inflation rates, tax levels, labor productivity in related industries, etc.;

2. Financial factors – including exchange rates, capital market yields, loan interest rates, inflation, stock market risks, etc.;

3. Administrative factors – changes in regulatory acts, approaches to tariff state regulation, corporate governance improvements, etc.;

4. Scientific and technical factors – the level of technology development in related industries, the quality and reliability of supplied railway equipment;

5. Resource and personnel factors – the level of training of specialists, internship opportunities, creation of efficient basic departments, etc.;

6. Socio-psychological factors – cultural-historical aspects, consumer responsiveness to new technologies, etc.

The choice of an approach to stimulating innovation activity is determined by the correlation between innovation activity factors and indicators characterizing its initial level at railway transport enterprises. Depending on the level of innovation activity, various approaches are applied. The competitive approach is used when an organization has internal demands for innovation and operates in highly competitive conditions. This approach involves stimulating innovation activity by tightening technological requirements for innovative equipment and purchased technologies, enabling the organization to maintain market leadership in transport services. The administrative approach is applied when market factors driving innovation activity are underdeveloped (low competition, high market regulation, etc.), and internal funding sources are limited.

This approach focuses on forming scientific and technological alliances with railway equipment manufacturers, organizing multimodal transportation, and harmonizing railway transport standards with those of the EU and EAEU. The proactive approach is applied when enterprises operate under oligopolistic or monopolistic conditions. Key measures include expanding participation in R&D (research and development) in collaboration with scientific organizations and engineering services, creating private technology parks and business incubators, and fostering partnerships with academic institutions and expert communities. Effective stimulation of innovation activity in the railway sector requires accurate diagnostics of the initial conditions and the application of an approach tailored to the specifics of the enterprise and the market situation.

The corporate venture fund (CVF) serves as a tool for innovation development within holding structures, companies, and corporate sectors. It focuses on investing in external startup projects, unlike corporate venturing, which targets internal projects. The CVF provides investment security, facilitates research and development (R&D), and enables the acquisition of business-critical technologies. It shifts the evaluation of innovation activities from capital investment metrics to outcomes achieved. Typically, it operates outside the company's main activities to ensure agile decision-making, encompassing all stages from expertise evaluation to managing investments and implementing innovations. Additionally, the CVF acts as a bridge between startups and corporate governance, overcoming the challenges of directly integrating new developments into large corporations.

Project financing is another essential measure that enables the creation of comprehensive schemes for attracting investments and implementing specific projects within a set timeframe and budget. The primary advantage of project financing is that the repayment of loans and investor returns is sourced solely from the revenues generated by the project itself, unlike conventional financing tied to the borrower's overall activities. It facilitates securing investments exceeding the initiator's assets, launching early-stage projects, and effectively distributing project risks among stakeholders.

Conclusion

This study highlights the significant role of innovation in improving the competitiveness of railway transport, focusing on Kazakhstan and drawing comparisons with the Czech Republic. The findings suggest that stimulating innovation in the railway sector requires a multifaceted approach, tailored to the specific conditions and market dynamics of each country. By integrating the appropriate approaches – competitive, administrative, cooperative, or proactive – railway enterprises can enhance their innovation activity, improve efficiency, and drive long-term growth.

Key measures for promoting innovation, such as establishing corporate venture funds, implementing project financing, encouraging information exchange, leveraging development institutions, and regulatory reforms, are essential for creating a supportive environment. Furthermore, the training of management personnel is crucial for sustaining innovation and ensuring that organizations are equipped to manage technological and market changes.

Drawing from international experiences, particularly the Czech Republic, Kazakhstan can benefit from modernizing its railway infrastructure, adopting multimodal transport strategies, and aligning its regulatory frameworks with international standards. These efforts will not only improve the competitiveness of Kazakhstan's railway sector but also contribute to broader economic development, including in tourism and regional connectivity. By focusing on innovation-driven growth, Kazakhstan can position itself as a key player in the global transport network, capitalizing on its strategic geographical location and vast potential for development.

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Chapter 5

MECHANISMS FOR IMPROVING PUBLIC ADMINISTRATION AND DEVELOPING OF TERRITORIAL COMMUNITIES

Maksym Bezpartochnyi

ORCID: <https://orcid.org/0000-0003-3765-7594>

*Doctor in Economics, Professor
Department of Economics, Entrepreneurship
and Marketing
National University “Yuri Kondratyuk
Poltava Polytechnic”*

Igor Britchenko

ORCID: <https://orcid.org/0000-0002-9196-8740>

*Doctor in Economics, Professor
Higher School of Security and Economics*

Olesia Bezpartochna

ORCID: <https://orcid.org/0000-0002-0919-2972>

*PhD in Finance, Insurance, Social Insurance
(Bulgaria), Associate Professor of the
Department of Management and Finance
Central Ukrainian Institute of Human
Development
(Poltava, Kropyvnytskyi, Ukraine; Plovdiv,
Bulgaria)*

ATTRACTING FOREIGN INVESTMENT TO ENSURE ECONOMIC SECURITY AND SUSTAINABLE DEVELOPMENT OF TERRITORIAL COMMUNITIES IN UKRAINE

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Abstract

The paper contains the results of the authors' research on ensure economic security of territorial communities in Ukraine through attracting foreign investment. The main components of economic

security of territorial communities and the place of foreign investment in ensure financial stability and capacity are identified. The authors investigated the factors that increase the relevance of ensure economic security of territorial communities in Ukraine. The authors consider the current directions of attracting foreign investment in the development of territorial communities of Ukraine to strengthen their economic security. The model and directions of ensure economic security of territorial community are proposed, taking into account the mechanisms for attracting foreign investment. Successful cases of ensure economic security of territorial communities in Ukraine through attracting foreign investment are studied.

Keywords: *territorial communities, foreign investment, decentralisation, financial stability, financial capacity, sustainable development, economic security, Ukraine.*

Introduction

Attracting foreign investment is one of the key factors in ensure economic security and sustainable development of territorial communities in Ukraine. In today's environment, when the country's economy faces numerous challenges, such as military aggression, economic instability and significant social changes, foreign investment is becoming an important source of resources for recovery and development. Territorial communities are the basis of the decentralised system of governance, and their ability to ensure stable development, withstand threats and guarantee the well-being of their residents directly affects the economic security of the state as a whole. The economic security of territorial communities should be a priority in state policy, as it ensures the sustainability of communities as basic elements of the national economy, contributes to the restoration of war-affected areas, and forms the basis for Ukraine's sustainable development in terms of global and domestic challenges. At the local level, ensure economic security contributes to improving the living standards of residents, creating new jobs, development infrastructure and social services, etc.

The economic security of territorial communities is closely related to the financial capacity of the regions of Ukraine, as the decentralisation reform involves the formation of own financial resources and their effective use to ensure sustainable development

of the territories. Given the current challenges and the need to develop the subjects and objects of territorial communities in Ukraine, there is a need to attract additional financial resources to meet the relevant needs and implement various projects. Such resources are foreign investments, which some territorial communities of Ukraine have begun to attract in most cases for the implementation of local infrastructure projects.

Scientific literature contains publications on ensure economic security and sustainable development of territorial communities. For example, publications include studies of ensure the economic security of territorial communities of Ukraine in wartime (Getmanets & Korobtsova, 2023; Harbusiuk et al., 2024; Yeryomenko, 2023). The financial capacity of territorial communities is considered by the authors as a factor in ensure economic security and serves as a tool for the development of territories (Voznyak et al., 2022; Xin et al., 2021; Yakymchuk et al., 2023). A number of scientific studies in the authors' publications relate to the socio-economic and environmental development of territorial communities of Ukraine through appropriate financial mechanisms, using the experience of the European Union (Akimova et al., 2020; Chyzh & Sakhno, 2020; Dyndur, 2020; Dyndur, 2021; Dyndur, 2022; Dyndur, 2023; Gavkalova et al., 2020; Kostyshyn, 2022; Sodoma et al., 2023; Uhodnikova et al., 2024).

However, the problems of ensure economic security of territorial communities of Ukraine through attracting foreign investment in the context of current challenges and threats, as well as post-war recovery, remain poorly understood.

Materials and Methods

The methodological basis of the study is the general economic principles and methods of a systematic approach to studying the process of ensure economic security of territorial communities in Ukraine through attracting foreign investment. The methods of analysis and synthesis were applied, which allowed identifying problems and determine the directions of ensure economic security of territorial communities through the development of appropriate model. The abstract-logical method was used to determine the directions of ensure economic security of territorial communities in Ukraine through appropriate mechanisms for attracting foreign

investment. The monographic method was used to studying successful practices of attracting foreign investment by territorial communities in Ukraine to ensure economic security.

Results and Discussion

We understand the economic security of territorial communities as a state of protection of their economic potential, which ensures stable socio-economic and environmental development, meeting the needs of the population, efficient use of resources and the ability to counter internal and external threats. It is an important component of the national security of the country, as territorial communities are the basic units of the administrative-territorial structure, form and use financial resources, including foreign investments.

The main components of the economic security of territorial communities are presented in Table 5.1.

According to the data presented in Table 5.1, the main components of the economic security of territorial communities are financial stability, economic sustainability, energy independence, social stability, environmental safety and information security. The financial stability of territorial communities is ensured, among other things, by foreign investments, and their share in the structure of financial revenues will continue to grow.

The economic security of territorial communities in Ukraine is becoming increasingly important due to the ongoing hostilities and the destruction of infrastructure. The armed aggression against Ukraine has caused significant losses in infrastructure and economic potential in many territorial communities. Territorial communities of Ukraine in the frontline areas and liberated lands face the need for rapid economic recovery. The implementation of decentralisation reform and the introduction of financial mechanisms for the formation and use of budgetary resources of territorial communities require effective management and ensure economic sustainability. Territorial communities in Ukraine have gained more responsibility for their own development, which increases the importance of their economic security. The outflow of working-age people due to migration, especially as a result of the war, as well as the ageing of the population, creates a labour shortage and increases the dependence of territorial communities on external resources, in most cases foreign investment. In addition, territorial communities face

threats such as economic isolation, dependence on external energy sources, cyber threats and corruption. The need to prevent and respond quickly to economic crises increases the importance of economic security of territorial communities in Ukraine. Climate challenges and environmental security require territorial communities to develop mechanisms to protect and preserve the environment and strategies to minimise economic losses to ensure sustainable development.

Table 5.1

Main components of the economic security of territorial communities

Components	Characteristics
Financial stability	<ul style="list-style-type: none"> – ensuring the balance of local budgets; – generating revenues through effective management of tax and non-tax revenues; – attracting grants, foreign investments and other sources of funding;
Economic stability	<ul style="list-style-type: none"> – diversification of the community’s economy to reduce dependence on certain industries; – development of local entrepreneurship, especially small and medium-sized businesses; – supporting the competitiveness of local producers;
Energy independence	<ul style="list-style-type: none"> – use of renewable energy sources (solar, wind, bioenergy); – implementation of energy efficient technologies in communities; – reducing dependence on centralised energy suppliers;
Social stability	<ul style="list-style-type: none"> – ensuring employment of the population; – creating conditions for professional development and social protection of citizens; – development of healthcare, education and cultural infrastructure;
Environmental safety	<ul style="list-style-type: none"> – rational use of natural resources; – implementation of projects to reduce environmental pollution; – control over the state of the environment;
Information security	<ul style="list-style-type: none"> – implementation of modern digital technologies; – protection community information systems from cyber threats; – raising the level of digital literacy of residents.

Source: identified by authors

Ensure economic security helps to create favourable conditions for attracting foreign investment, which is a key factor in the recovery and development of territorial communities. Foreign investors prefer regions of Ukraine with a stable economic situation and transparent policies. Rebuilding of territorial communities requires significant financial, material and human resources. Ensure economic security will facilitate the effective use of foreign investment by territorial communities.

The main challenges that reduce the level of economic security of territorial communities in Ukraine are insufficient financial resources, dependence on government subsidies, limited access to foreign financing, infrastructure problems – deteriorated roads, water supply and energy networks, and low levels of community digitalisation.

In order to strengthen the economic security of territorial communities in Ukraine, infrastructure development is a key aspect of attracting foreign investment. This primarily concerns foreign investment in transport, utilities, and digital infrastructure to meet the needs of territorial communities and develop integration processes. Modernisation and technical re-equipment of infrastructure increases the attractiveness of territorial communities for investors and creates the preconditions for the development of small and medium-sized businesses. Foreign investment helps diversify the economy of territorial communities, reducing dependence on particular industries or markets. Investors are interested in long-term cooperation, ensuring technological exchange and innovation. Investments promote the opening of new enterprises, which provides employment and reduces labour migration, while attracting international businesses raises labour standards and stimulates the local economy.

Taking into account the above aspects, we propose a model of economic security of territorial communities using the mechanisms of attracting foreign investment (Figure 5.1). This model is a systematic approach that combines tools, mechanisms and resources to ensure sustainable economic development, protect against threats and improve the well-being residents of territorial communities. The basis of this model is the balance between sustainability, adaptability and development.

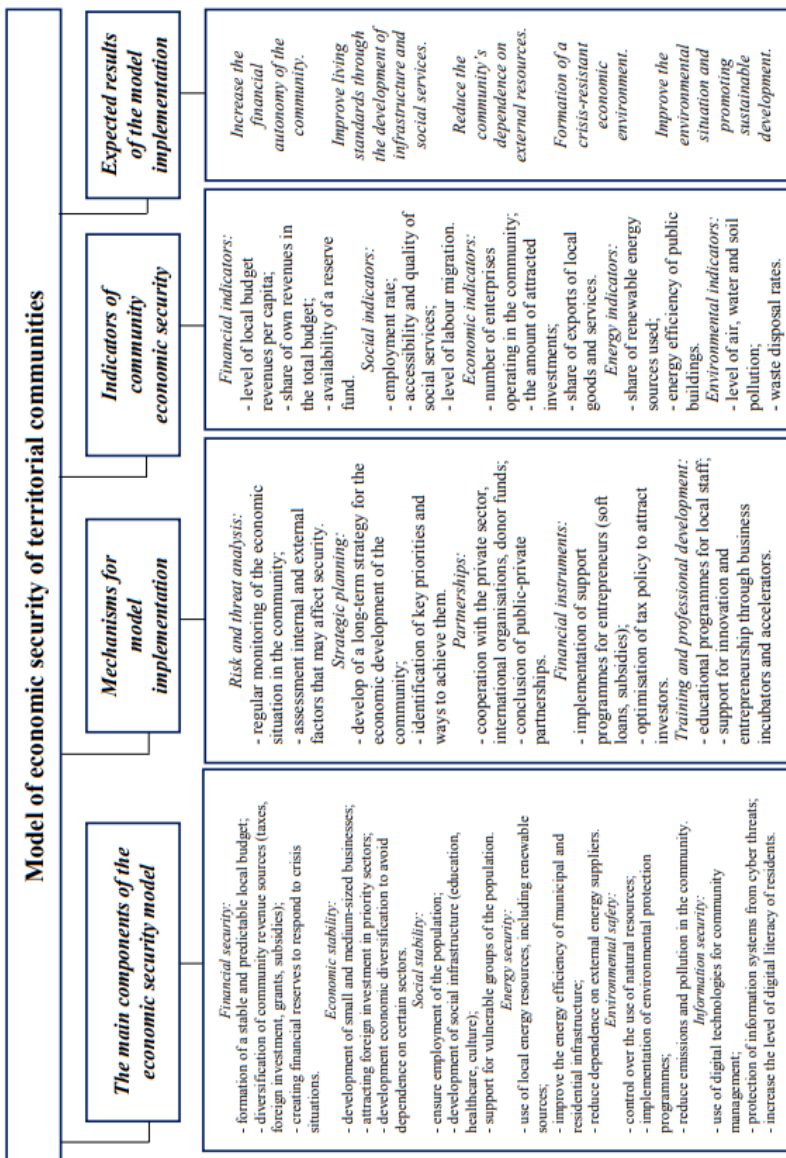


Figure 5.1 Model of economic security of territorial communities using the mechanisms of attracting foreign investment

Source: authors' development

The model of economic security of territorial communities should be adapted to the specific conditions and challenges faced by each territorial community in Ukraine. Its successful implementation depends on the effective formation of financial resources, attraction of foreign investments, and interaction between local authorities, business, and the community.

Within the framework of the proposed model of economic security of territorial community, attention should be focused on the directions of its ensuring. In our opinion, they include the following:

1. Formation of effective strategy of sustainable development of territorial community using available resources. Most territorial communities in Ukraine have relevant strategies, but they do not take into account sustainable prospects and opportunities for more efficient use of available resources. In addition, current challenges necessitate the improvement of the developed strategies to take into account the rapidly growing needs of the community, changes in the number of residents due to military operations and internal and external migration processes, and the relocation of enterprises.

2. Improving the investment passports of territorial communities to expand investment objects (Greenfield and Brownfield), increase the investment attractiveness of the community, develop digital portals of investment objects, disseminate information about the opportunities of territorial communities on the Internet, establish partnerships and communicate with foreign investors through the develop of roadmap, and introduce investor support mechanisms.

3. Development and modernisation of transport, utilities and digital infrastructure through investments in sustainable community development projects. This involves preparing technical-economic characteristics of infrastructure facilities and business plans, and forming optimal financing model with the involvement of relevant stakeholders.

4. Increase management capacity through system of training and coaching for local staff in effective resource management, project management and territorial marketing, introduction of e-governance tools and digitalisation of economic processes.

5. Development civic engagement through involving citizens in decision-making and monitoring their implementation, and conducting awareness-raising campaigns.

Some territorial communities in Ukraine are gradually introducing innovative approaches to ensure economic security, taking advantage of decentralisation, attracting foreign investment and rational use of resources. The best successful practices are summarised in Table 5.2.

Table 5.2

Best successful practices of attracting foreign investment to ensure economic security and development of territorial communities in Ukraine

Case description	Results	Success factors
The <i>Slavuta</i> territorial community implemented a project to modernise its heating system by introducing bioenergy technologies. The local boiler house switched to alternative fuels, such as wood pellets, which reduced heating costs by 40%.	<ul style="list-style-type: none"> – reduce dependence on gas; – saving the community budget; – creation of new jobs in the field of biofuel harvesting; 	<ul style="list-style-type: none"> – attracting international grant funding; – clear planning and technical support from experts;
The <i>Baikovetska</i> territorial community is actively developing agricultural cooperatives. A milk processing cooperative was established as part of the local business support programme. The territorial community helped farmers with the purchase of equipment and logistics.	<ul style="list-style-type: none"> – increase the income of local farmers; – create added value through the processing of raw materials; – expanding the market for products; 	<ul style="list-style-type: none"> – territorial community cooperation with foreign donors; – active participation of local residents;
The <i>Voznesenska</i> territorial community implemented a project to modernise its water supply and sewerage system. Modern water treatment equipment was installed.	<ul style="list-style-type: none"> – improve the quality of drinking water; – reduction of water losses in the system; – improve environmental safety. 	<ul style="list-style-type: none"> – attracting financing from the European Bank for Reconstruction and Development; – implementation of the latest technologies.

Source: summarised by the authors based on official websites of territorial communities of Ukraine

Successful cases demonstrate that ensure economic security of territorial communities in Ukraine depends on rational use of resources, effective management, cooperation with foreign donors and investors, active participation of residents in territorial community development.

Conclusion

Based on the results of the research, the following conclusions were made:

1. The economic security of territorial communities is the foundation for sustainable development of regions and the country as a whole. Ensure it requires a comprehensive approach that combines financial stability, economic resilience, good governance and cooperation with international partners and attracting foreign investment. The role of local authorities is particularly important as they must become active participants in the process of ensure security and development of their territorial communities.

2. The relevance of economic security of territorial communities in Ukraine in terms of current challenges is determined by its key role in the country's recovery and sustainable development.

3. Attracting foreign investment should be a priority for the development of Ukraine's territorial communities. This will help to restore the economy, improve living standards and ensure long-term economic security. To achieve these goals, synergies between the state, local authorities and international partners are needed.

4. The proposed model of economic security of territorial communities using mechanisms for attracting foreign investment serves as a guide for local authorities in form development strategies and provides for the use of relevant economic indicators, implementation measures and expected positive results that will ensure sustainable development.

5. Successful cases implemented in the territorial communities of Khmelnytskyi, Ternopil, Mykolaiv and other regions of Ukraine demonstrate active attracting foreign investment and cooperation with international donors in infrastructure development. In doing so, the economic security of territorial communities of Ukraine is enhanced through budget and resource optimisation, entrepreneurship development and job creation, introduction of innovative technologies, etc.

In general, the proposed model and practical cases of individual territorial communities can be used in other communities in Ukraine that seek to ensure economic security and sustainable development, and attract international investment.

The economic security of territorial community is a guarantee of stability, well-being and future prosperity of Ukraine.

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Mykhaylo Pityulych

ORCID: <https://orcid.org/0000-0002-2787-0378>

Doctor of Economics, Professor

Krystyna Kudak

ORCID: <https://orcid.org/0000-0002-5886-7139>

PhD in Economics, Research Fellow

Nataliya Keretsman

ORCID: <https://orcid.org/0000-0001-9501-3530>

PhD in Economics, Research Fellow

Alina Kovach

ORCID: <https://orcid.org/0000-0001-9862-7554>

Post-graduate student, Research Fellow

*Transcarpathian Regional Center
for Socio-Economic and
Humanitarian Studies of NAS of
Ukraine*

(Uzhorod, Ukraine)

**ECONOMIC
ASSESSMENT OF
ENTREPRENEURSHIP
DEVELOPMENT IN
TRANSBORDER
REGION
IN CURRENT
CONDITIONS**

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Abstract

The article analyzes and assesses the development of entrepreneurship in the Transcarpathian region, as a border region. An assessment of the dynamics of structural changes in terms of types of economic activity of the region's economy was carried out. An attempt has been made to analyze the financial capacity of territorial communities in the region as a basic indicator in the course of assessing the functioning of the business environment. The main trends in business relocation in the Transcarpathian region under martial law have been highlighted.

Keywords: *entrepreneurship, small business, personal farms, territorial community, relocation.*

Introduction

The market transformation of the regional economy, which is based on deep changes in the system of basic relations, is accompanied by the formation of a plurality of organizational and legal forms of production activity adequate to the market economic system, the development of the non-state segment of the economy and the formation of its multi-structure. The development of various forms of management opens up space for increasing the labor activity of the population, expanding the scope of labor, flexible combination of individual and collective forms of organization of labor activity, creates conditions for the development of competition. This lays the foundation for the formation of new types of business entities, and also creates a need to stimulate the development and support of multivariate forms of management, on the other hand – awareness of the obvious fact that their formation has a clearly expressed spatial connection with the historical, economic, social, mental factors inherent in this particular territory, which determine the dynamics of their development. From these theoretical and methodological foundations, it becomes possible to take into account the main socio-economic characteristics of local spatial formations and use adequate tools for developing the multi-structure of their economy.

Materials and Methods

In the article general scientific research methods were used, such as economic analysis and synthesis, induction, deduction, and scientific abstraction method.

Results and Discussion

The economic assessment and analysis of the activities of business entities in priority sectors of the economy of the Transcarpathian region showed that during 2018-2022, a positive trend in the development of the region's economy was generally observed. Despite the fact that during the COVID-19 crisis, some negative changes occurred in the dynamics of the main indicators of the activities of business entities, under martial law conditions, taking into account the geographical location of Transcarpathia, there was an increase in indicators characterizing the development of entrepreneurial and business activity. To some extent, this is due to

the relocation of businesses (about 6 thousand enterprises) and the growth of the region's population due to internally displaced persons (as of early September 2023, 23 thousand IDPs were registered in the region) (Pityulych, 2023). The assessment of the dynamics of structural changes in the section of types of economic activity based on the indicators of their share in the production of gross added value and the number of employees indicates that the structural profile of the economy of the urban communities of the region is largely determined by the development of the service sector, while the rural areas of the region are primarily dominated by agriculture production. Economic analysis and assessment of the activities of business entities in priority sectors of the economy of the Transcarpathian region showed that by 2022, the share of wholesale and retail trade, repair of motor vehicles in the production of gross added value in the economy of urban communities of the region was over 12%, which is the second indicator after agriculture and forestry. The number of people employed in the trade sector has increased by 281.5% over the past 20 years, which indicates a positive trend in the functioning of the economy of urban communities and the deepening of market relations (Pityulych, 2023). Objectively, the sphere of services has gained the greatest development in the cities of regional subordination, as well as in the cities of the lowland natural and economic zone of the region, which is the place of sale of agricultural products by the households and farms in the neighboring villages. The analyzed communities are also characterized by the development of industrial production, in particular in the field of mechanical engineering, electronics, light and food industry. Trade is actively developing in the foothill cities and towns of the region, which is to some extent due to the ethnic factor and the high level of entrepreneurial potential of the population of the analyzed cities (in particular, the Romanian national minority). In the mountainous territories of the Transcarpathian region, which are characterized by a mono-industry structure of the economy, the main sphere of labor was and remains agriculture, which employs more than 90% of the economically active population, forestry and related industries. At the same time, tourism and recreation are rapidly developing in the structure of non-agricultural activities of urban settlements in the region, which led to

the formation of new forms of entrepreneurship and employment of the population on the basis of personal farms. Thus, in modern economic conditions, the service sector, in particular trade and tourism and recreational activities, is the leading structural characteristic of the economy of urban settlements of the region and the formation of a multi-sectoral business model that meets the criteria of a market economy.

Further analysis of the dynamics and structural processes in the development of entrepreneurship in the Transcarpathian region proved that the structure of the economy of the Transcarpathian region is primarily dominated by small enterprises, the share of which is 95% of the total number of enterprises in the region. The state and level of development of small entrepreneurship due to objective reasons is a determining indicator of the success of market reforms and the competitiveness of the regional economy. Unlike large enterprises, which occupy or aspire to occupy dominant positions in the market and build their development strategy based on this goal, small and micro-businesses use their own capabilities, adapt and improvise in accordance with market conditions and territorial location. This nature of motivation, as well as personal management of the enterprise, close contact of its owner with employees, customers and suppliers, make small business quite elastic. The flexibility, creative nature of work, readiness for risky activities inherent in this sector determine its place and role in the modern economy of the region.

During 2015-2020, there was a general trend towards a reduction in the number of enterprises in the Transcarpathian region, in particular by 16.51%. In 2020, their share was 1.8% in the total structure of enterprises in Ukraine, while the share of individual entrepreneurs was 2.7% in Ukraine and 86.7% in the total structure of the number of business entities in the region, which is 346 units per 10 thousand people of the current population. During the analyzed period, the structure of the economy of the Transcarpathian region was dominated by the share of small enterprises, which in 2020 amounted to 6360 units (95.6% of the total number of enterprises in the region), against 3 large enterprises (0.6%) and 292 medium-sized enterprises (1.7%) (Hrynyk, 2021). It is worth noting that in the structure of small enterprises of the region, the share of

microbusiness is 87% (5647 units), including 45 units per 10 thousand people of the current population. Analysis of the dynamics of the number of analyzed business entities during 2015-2020. showed a positive trend, in particular, the number of small enterprises increased during the analyzed period by 8.67%, medium-sized enterprises – by 14.5%. In the structure of economic activities of the Transcarpathian region, the number of individual entrepreneurs dominates, primarily in the sphere of trade (93.9%), provision of services (98.0%), temporary accommodation and catering (94.2%). The share of analyzed entities in industry, construction and, in particular, agriculture (47.5%) is significantly lower. Thus, during 2015-2020 there was a reduction in the number of individual entrepreneurs, primarily in the indicated spheres of economic activity – in the industrial sector by 11.53%, in the construction sector – by 10.47%, in the transport, warehousing, postal and courier activities – by 7.41%. At the same time, during the analyzed period, there was a significant increase in the number of people employed in the agricultural sector of the region's economy – by 40.95%, which characterizes the presence of positive changes in the structure of the analyzed sector of the region's economy (Hrynyk, 2021).

The activity of small enterprises in the tourism and recreation sphere, which has been developing quite intensively in the mountain settlements of the region over the last period of time, deserves a separate analysis. The main positive result of the operation of small enterprises operating in the field of recreation is the reduction of social tension in the local labor markets of mountainous areas, and accordingly, the growth of incomes of the local population, reduction of the unemployment rate, etc. Employment in the tourism and recreation complex has a dual nature, as many jobs are seasonal or operate on a part-time, weekly basis. However, despite this, the development of the recreational sphere often has no alternative, so its functioning is of great importance for mountainous areas. That is why recreation as a form of employment is economically important and requires serious efforts to develop the sphere of labor. Over the past 10-15 years, the number of tourist and recreational facilities in the region has significantly increased, in particular, in the mountainous areas of the Transcarpathian region the growth was

over 200% (Pityulych, 2024). The number of small and micro-business establishments in the industry also increased by 170%, which indicates the active development of private business structures in it, in particular in remote mountainous areas, where all the prerequisites (landscape, natural and climatic, infrastructure, labor) are available for the development of various types of tourist and recreational activities (Pityulych, 2024). The demonopolization of the recreational sphere and the expansion of the list of services practically covered all areas of activity of both directly recreational establishments (sanatoriums, recreation centers, recreational centers, tourist bases), and establishments of related sectors (hotels, catering establishments, transport provision, organization of excursion activities and leisure of vacationers). This significantly increased the volume of services provided, the average length of stay of vacationers, the income of tourist and recreational establishments, the amount of taxes paid and other important indicators that characterize the effectiveness of the functioning of establishments in the specified area.

The number of large enterprises in the region during the analyzed period remained unchanged and amounted to 3 enterprises (except for 2019 – 5 units), operating in the industrial production of the region. In particular, an analysis of the development of the industry of the Transcarpathian region in 2021 showed that during the analyzed period the industrial production index was 104.5% (in Ukraine – 101.1%). According to this indicator, the region ranked 11th among other regions of the country. The growth of the industrial production index in 2021 compared to the same period of the previous year occurred at the expense of enterprises of the processing industry – by 6.3% and the extractive industry and quarry development – by 10.5%. In the processing industry, growth was observed in metallurgical production, production of finished metal products) – by 35.2%; the production of chemicals and chemical products increased by 24.0%; mechanical engineering – by 14.1%. The industrial production index at enterprises manufacturing wood products, paper production and printing activities in 2021 was 94.7%; for the production of rubber and plastic products, other non-metallic mineral products – 99%; for the production of food products and beverages – 98.9%. At the same time, the absence of large

industrial enterprises in the region, which have a powerful mobilization effect of financial resources, led to the curtailment of innovation activities (Hrynyk, 2021).

Further research into the level of entrepreneurship development in the region involves analyzing the structure and number of employees at the region's enterprises. During 2015-2020, a positive trend was observed at the enterprises of the Transcarpathian region in terms of the growth of the number of employees at the enterprises of the region. In particular, during the analyzed period, their number increased by 4.46%, but primarily at the expense of legal entities, while the number of employees among individual entrepreneurs during the analyzed period decreased by 18.18% in the structure of the total number of employees employed by individual entrepreneurs in Ukraine, as well as by 10.49% in the structure of the total number of employees employed in the region (Hrynyk, 2021).

In the course of further analysis of the functioning of the business environment in the economy of the Transcarpathian region, the main basic indicator is the financial capacity of communities, which is closely related to the income accumulated in the community budget and other cash flows for the benefit of households and local businesses, on which its further socio-economic development depends. Until 2022, the main part of local budget revenues was formed by personal income tax. In terms of local budget revenues per person, the Transcarpathian region took 18th place in Ukraine for the period from January to May 2023. The average annual growth rate of the indicator for the period under analysis is 1.3. The highest growth rates were found for 2022-2023 – 1.44, which is important given the region's rear status and the actual receipt of new opportunities and development functionality by it. Since 2018, the share of tax revenues to local budgets has been less than 30%, which confirms the shadowing of the region's economy, especially with regard to leading types of activity – tourism, agriculture, woodworking and trade (Keretsman, 2023). Despite the presence of a number of problems in socio-economic development, among the communities of the Transcarpathian region, the Mukachevo and Uzhhorod communities are leading. In particular, the Mukachevo community has the highest rate of tax revenues in the local budget. At the same time, despite the presence of depopulation processes, today the cities

of Uzhhorod and Mukachevo act as new centers of growth in the context of IDPs integration. The leading positions are also occupied by Baranynska and Velykobereznij communities, taking into account the positive dynamics in the growth of local budget revenues. A number of positive trends are characteristic of the Tyachiv urban community, in particular in terms of capital expenditures, along with this, this community is characterized by the highest rate of population aging and reduction in local budget revenues during 2021-2022. Most communities classified as depressed are not marked by noticeable positive trends, in particular, these include the Khust and Rakhiv communities, which are unable to support settlements with fewer resource capabilities (Keretsman, 2023).

The analysis showed the presence of deep structural shifts in the functioning and development of the business sector of the Transcarpathian region during the transformation period and the transition to market conditions of management. The economic assessment and analysis of the activities of business entities in priority areas of the economy of the Transcarpathian region showed that during 2018-2022, a positive trend was generally observed in the development of the region's economy, in particular, under martial law, taking into account the geographical location of Transcarpathia, there was an increase in indicators characterizing the development of entrepreneurial and business activity. Despite the curtailment of industrial production during the period of transformation and transition to a market economy, over the past decade, positive dynamics were observed in the increase in the volume of production and the development of industrial enterprises in the region, which are mainly represented by small and medium-sized businesses. At the same time, the structural profile of the region's economy is largely determined by the development of the service sector, in particular wholesale and retail trade, while in the rural and mountainous areas of the region, agricultural production, tourism, and recreation are primarily dominant.

Since the beginning of Russia's military aggression, the economy of Ukraine has suffered seriously – the infrastructure was damaged, a number of enterprises suffered losses, business access to resources and markets became more difficult, and all this was exacerbated by

inflation, devaluation and population migration. Given the difficult situation in which domestic enterprises in the east and south of the country found themselves and in order to prevent their complete closure, the Ukrainian government has taken a number of measures to enable the transfer of business entities to safer territories. It was recognized that since the beginning of a full-scale war, relocation is a necessity, as it involves “restoring the state economy by moving enterprises from territories that are close to or in the combat zone to safe regions of Western Ukraine”. The largest part of business structures chose the Transcarpathian and Lviv regions for a new place of work – 120 and 199 companies, respectively. The top of safe regions in demand among entrepreneurs also included Chernivtsi region – 78 enterprises and Ivano-Frankivsk region – 70 enterprises (Pityulych, 2024).

According to official data, during the first year of the war, 369 enterprises from different regions of the country moved to the region. Transcarpathia became the second region in terms of the number of relocated enterprises – 14.5%, ahead of only Lviv region – 24%. Of the 369 relocated enterprises in the region, 332 were operating, 30 had moved, but had not yet started their operations, and 7 were in the process of moving. The largest share among the relocated companies is the information technology sector (a little more than 47%), the service sector (28%), the processing industry (19%), construction (4%), freight transport and agriculture (0.5%) (Pityulych, 2024). The above indicates that relocated enterprises mostly do not fit into regional economic priorities, but “deplete” local resources, without ensuring strategic goals. It is also worth noting that 94.9% of relocated enterprises have concentrated their activities in urban and rural communities of the Transcarpathian region, of which 54.2 percent (200 relocated enterprises) are concentrated in urban areas. And only 19 relocated enterprises have concentrated their activities in rural communities, which is about 5 percent. This is a rather negative manifestation, since most rural communities are problematic, and therefore we can conclude that the business that has moved here practically does not solve the problems of depressed areas and does not have a significant impact on socio-economic development in rural areas.

Also, more than half of all relocated processing industry

enterprises (52%) fall on 3 urban territorial communities, the centers of which are cities of regional subordination – Beregove, Mukachevo and Uzhhorod territorial communities. Thus, according to the monitoring data conducted by scientists of the Transcarpathian Regional Center for Socio-Economic and Humanitarian Research of the NAS of Ukraine, 22.2% of the surveyed community heads responded that business structures were not interested in moving to their communities, and the same share fell on those communities where negotiations were carried out, but it was not possible to “pull” the enterprise into the community due to the inability to satisfy the requirements presented by the enterprises regarding land plots, infrastructure, roads, logistical accessibility, etc. That is, it can be argued that almost half of the communities in the region practically do not have the basic conditions necessary to attract relocated businesses to their territories (Chubar, Hapak, 2023).

Almost a third of the relocated enterprises were concentrated within one community – Bativska settlement. They are re-registered in this community, so they will pay taxes there, but their field of activity (more than 90 percent) is information technology. Such a concentration of relocated businesses in this community can be explained solely by the administrative decision of the regional authorities to allocate this particular location for compact placement and registration of IT-related enterprises. This community was proposed for internally displaced persons (IDPs) who, at the beginning of the military invasion, arrived in the region independently and disorganized in search of a safe haven. The idea of creating an IT cluster in the Transcarpathian region was developed directly in such a format, when there is an effort to create attractive conditions, to minimize bureaucratic barriers in order to attract a greater number of enterprises and entrepreneurs in such a high-tech and relevant field of activity as IT (Chubar, Hapak, 2023).

It should be noted here that the effect of such a large number of entities in the field of IT technologies has an ambiguous impact. In this regard, in addition to the number of these entities, the level of wages is positive – they are much higher than the regional average and the average for the country as a whole, since it is known that this area is currently experiencing the peak of its development, and the demand for qualified IT workers is very high. This directly affects

the profitability of local budgets of communities where they are registered. On the other hand, given the fact that most IT workers are self-employed individuals, it can be argued that a large number of business entities in the communities where they have moved is unlikely to affect the employment of the population in these communities, since they do not offer jobs, but work for themselves.

The smallest number of relocated enterprises was moved to Rakhiv district – 3 enterprises, which is less than 1 percent of all relocated enterprises in the region (Pityulych, 2024). Such a negative situation can be explained by conditions that differ from those in urban settlements. First of all, we note that all 4 communities of the district are mountainous, since all settlements have the status of mountainous. Such a status creates an additional burden for business entities not only in the form of wages in these settlements, which is guaranteed by the state and declared in the relevant regulatory and legal documents (we are talking about allowances that residents and employed persons of these territories should receive), but also puts entities carrying out their activities here in more unfavorable operating conditions compared to similar enterprises in lowland and foothill settlements. This is because these territories have less developed infrastructure, worse access conditions for both the population and business entities to various types of services, limited resource potential, worse natural and climatic conditions, remoteness from the markets for manufactured products, etc., so this accordingly affects the higher transaction costs that business entities bear in the process of carrying out their activities. The consequence of such negative conditions and factors is that only two communities were able to attract relocated businesses to their territories.

Conclusions

Economic assessment of the functioning and development of entrepreneurship in the Transcarpathian region showed that over the past decades there has been a positive trend in the development of the region's economy, there has been an increase in indicators characterizing the development of entrepreneurial and business activity, which over the past 2 years was primarily due to the relocation of business and the growth of the region's population due to internally displaced persons. Assessment of the dynamics of structural changes in terms of types of economic activities (by

indicators of their share in the production of gross value added and the number of employees) indicates that the structural profile of the economy of urban communities in the region is largely determined by the development of the service sector, while in rural areas of the region agricultural production primarily dominates. In the future, it is necessary to stimulate the development of entrepreneurial potential in the mountainous areas of the region, which are depressed, introduce innovations in the agricultural sector of the economy, stimulate employment in the IT sector, implement special youth employment programs and de-shadow the economy in order to improve the level and quality of life of the region's population.

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Halyna Skoryk

ORCID: <https://orcid.org/0000-0002-6637-7252>

PhD in Economics, Associate
Professor of the Department of
Theoretical and Applied Economics

Nataliia Ivanytska

ORCID: <https://orcid.org/0000-0002-3736-4110>

Senior Lecturer of the Department
of Theoretical and Applied Economics
Lviv Polytechnic National University
(Lviv, Ukraine)

**INCREASING THE
COMPETITIVENESS
OF TERRITORIAL
COMMUNITIES
BASED ON
SUSTAINABLE
DEVELOPMENT**

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Abstract

The article substantiates that solving the problems of increasing territorial communities' competitiveness contributes to realizing the tasks of their sustainable development. The factors that significantly affect the development of territorial communities, the formation of approaches to their management, and the content of the components of sustainable development are identified. The paper emphasizes that the economic component plays a decisive role in the triad of sustainable development of territorial communities, which requires authorities to concentrate their efforts on increasing the competitiveness of territorial communities based on their potential. The competitiveness of communities is viewed through the concept of high standards of community life, so its improvement is ensured, among other things, through the cooperation of neighboring communities. The management of communities following the sustainable development strategy involves the sustainable development of the community's strengths to gain competitive advantages.

The most significant tasks in administrating territorial communities, such as strategy development, social development, economic sustainability, environmental protection, housing and infrastructure, public participation, monitoring and evaluation, and international cooperation to achieve strategic goals, are substantiated. Measures to improve the management of sustainable development of territorial communities in Ukraine are proposed.

Keywords: *territorial communities, sustainable development, competitiveness, social development, economic sustainability, environmental protection.*

Introduction

Modern society is characterized by rapid changes in the economic and social spheres, territorial policy and public administration, environmental protection, and other areas that significantly influence its functioning and efficiency. The efficiency of social-economic policy implementation at the local level requires a deep understanding of all the factors that influence the development of territorial communities (TCs), whose role is constantly growing in meeting their own sustainable development needs. In the context of development, economic, financial, social, and administrative autonomy, and self-sufficiency TCs are increasing, which makes it necessary to improve their competitiveness. Providing an adequate level of social-economic efficiency and sustainable economic growth based on the principles of sustainable development of territorial communities largely depends on solving the problem of increasing their competitiveness.

Materials and Methods

The competitiveness of territorial communities, particularly in the context of their sustainable development, has recently become the subject of domestic scientists' research. Among Ukrainian scholars, we should highlight the work of A. Melnyk, Z. Gerasymchuk, N. Honcharuk, M. Dolishnyi, V. Kravtsiv, A. Maksymenko, R. Bilyk, Z. Varnalii, V. Zakharchenko, Y. Sharov, S. Shultz, and others. Theoretical aspects of the introduction of the sustainable development model have been considered in the works of D. Sultanov, L. Didkivska, Z. Gerasymchuk, O. Ralchuk, A. Lelechenko, P. Nadolishnyi, V. Potapenko, D. Stechenko, V. Trehubchuk, and others.

A review of scholars' work in this area shows a comprehensive study of sustainable community development and significant development in various aspects of their competitiveness. At the same time, given the rapid socio-economic changes and continuing decentralization processes, theoretical and applied aspects of increasing territorial communities' competitiveness based on

sustainable development remain relevant.

The methodological basis of the study is the principles and provisions of the theory of competitiveness, sustainable development, and management. The study uses general scientific methods: analysis, synthesis, systematization, and generalization, inductive, and logical.

The purpose of the study is to develop theoretical and applied principles for improving the competitiveness of territorial communities' basis of sustainable development.

Results and Discussion

The decentralization reform in Ukraine was aimed at forming a capable and closest to the citizen institution of power – local self-government. As a result, 1469 territorial communities were created (as of 2024), including 409 urban communities with a city center, 435 settlement communities with a city center, and 625 rural communities with a village center (based on laws and official government information).

A major goal of the creation of territorial communities was to increase their socio-economic development and competitiveness. Those territorial communities where there is not only a high and stable level of economic development but also conditions favorable for comfortable living and recreation can be considered successful and preferable. From this point of view, the competitiveness of TCs is expressed through their ability to accumulate resources of economic, social, and environmental components of sustainable development. The positive dynamics of the socio-economic development of the TG are due to the priority concentration of management on the triad of components of sustainable development (Rohozian, Zablodska, Liashenko, 2021), (Zablodska, Sieriebriak & Bielousova, 2020).

Sustainable development is based on people's right to a decent, full life and development, which ensures maximum satisfaction of the socio-economic needs of society today without limiting this opportunity for future generations (Derun, Kocherha, 2021). It is a system of mutually agreed administrative, economic, social, and environmental measures aimed at forming a system of social relations based on trust, partnership, solidarity, consensus, ethical values, a safe environment, and national sources of spirituality.

The concept of sustainable development reflects a comprehensive approach to the social-economic development of society aimed at ensuring economic progress based on environmental safety and preservation of natural resource potential and social justice, improving the conditions and quality of life of all segments of society, and a comfortable environment for both present and future generations.

According to the Resolution of the Verkhovna Rada of Ukraine (Concept of Sustainable Development of Human Settlements, 1999) sustainable development of human settlements is a socially, economically, and environmentally balanced development of urban and rural settlements aimed at creating their economic potential based on the rational use of resources, technological re-equipment and restructuring of enterprises.

In modern conditions, the development of territorial communities and the formation of approaches to their management are significantly influenced by factors shaped by globalization. They include (Vasylchenko, Parasiuk, Yeremenko, 2015):

- Economic factors (synchronization of the world's economies, increased capital mobility, reduction of the share of employment in the raw materials and manufacturing sectors and increase in the share of employees in the service sector, changes in the structure of production costs, changes in consumer behavior).

- Technological factors (improvement of logistics chains, growing importance of information services and technologies, increased production efficiency, growing requirements for employee qualifications).

- Regulatory and political factors (regional integration, increasing democratization, decentralization of government services).

The level of socio-economic development of TCs largely depends on the balance and distribution of powers between state, regional, and local levels of government. At the same time, high quality of life and economic development are conditioned by the powers and appropriate resources for their implementation delegated to local governments.

Taking into account the factors influencing the development of territorial communities and improving the efficiency of local self-government will ensure the implementation of sustainable

development components (Figure 5.2). The sustainability and balance of the TC are ensured by the economic and environmental components of sustainable development. The well-being, equality, justice, and quality of life in the community are ensured by the economic and social components.

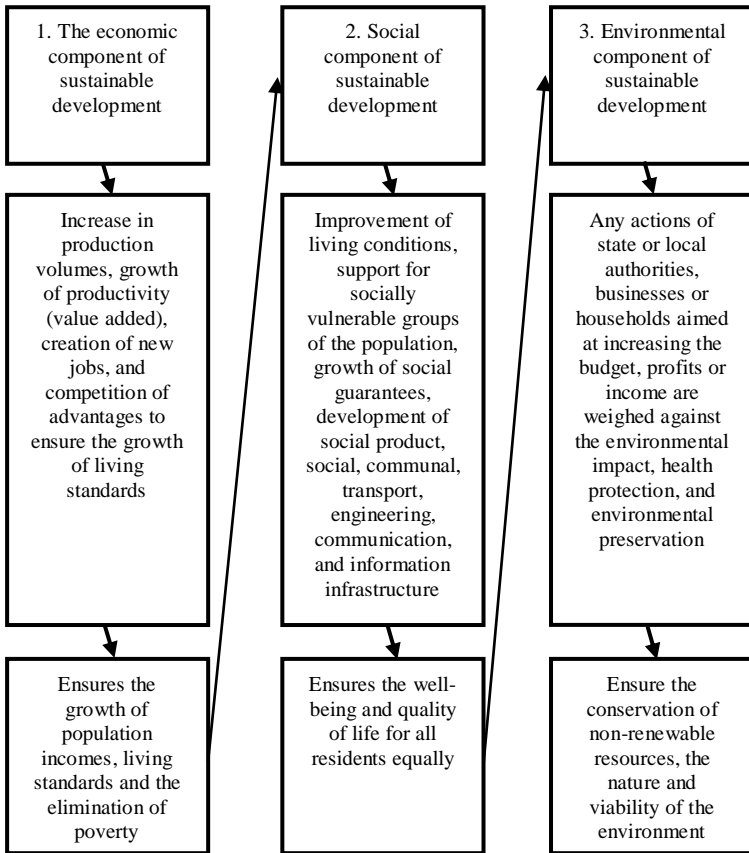


Figure 5.2 Formation of components of sustainable development

All three components of sustainable development are important, ensuring economic growth, higher incomes and welfare of citizens, improved comfort and quality of life, and environmental safety. They reflect the balance and completeness of development. The economic component is crucial in this triad, as economic development is the

engine and resource of the change process. At the same time, solving the economic issues of the TC should ensure a balance between the interests of business, social and environmental development in the future.

Development is impossible without the economy, which means it is impossible without successful business. Creating favorable community business conditions is a prerequisite for social and environmental development. The conditions for this are the maturity of civil society, the culture and readiness of local communities to assume responsibility for managing the development of the territory, the quality of life today and in the future, the flexibility of local authorities in management, strategic planning, etc.

This requires the authorities to focus on increasing the competitiveness of communities, which requires developing and supporting entrepreneurship, considering the community's potential, skilled workers, and innovation.

Competitiveness is seen as a key indicator of policy success or failure. The concept of competitiveness is relatively clear when applied to firms, but more difficult to define for regions or territorial communities. An industrial region, for example, is not a direct competitor to a predominantly agricultural region or financial center, so measuring its competitiveness is problematic. In addition, the term itself primarily refers to situations where one entity wins/loses concerning another, while cooperation and collaboration can be beneficial at the level of territorial communities.

The concept of competitiveness, as seen in the EU, can be summarized as “high and rising living standards” (Csilla Filo, 2008).

A. Melnyk's (2019) approach to determining competitiveness deserves special attention. The author notes that the competitiveness of a territorial community is the ability of its economic system to ensure social-economic optimality with the least possible involvement of external resources (in particular, the resources of the State budget). It is necessary to be resistant to economic and social crises, to achieve goals based on competitive advantages, and to ensure economic security. In other words, the features of such a territorial community are competitive advantages, self-sufficiency, and economic security. The factors that determine the competitiveness of a TC are its location, resources, economic

structure, level of infrastructure development, favorable investment environment, demographic characteristics, and competitive advantages. Given the place of TC in a region or country, competitiveness is defined as the ability to be the best, and to occupy a certain position and niche in the economic structure.

The management of TCs by the strategy of sustainable development involves the sustainable development of community strengths to gain competitive advantages.

The main areas and tasks of managing the sustainable development of territorial communities are strategy development, social development, economic sustainability, environmental protection, housing and infrastructure, public participation, monitoring and evaluation, and international cooperation to achieve strategic goals.

As a rule, territorial communities are not self-sufficient, regardless of their resource potential, geopolitical location, infrastructure, or economic development, as the experience of developed countries proves. Therefore, cooperation is one of the priority areas of community development, which will ensure an increase in the efficiency of managing the sustainable development of communities, rationalizing the use of their resources, and introducing new approaches to the implementation of local government functions. The new approach is primarily about strengthening the responsibility of local governments for their decisions and choosing ways to solve existing problems. The advantage of cooperation is not only the ability to pool resources and efforts, but also to develop infrastructure, improve the quality of administrative services, and the welfare and improvement of the community. This cooperation will result in long-term mutually beneficial economic neighborly relations (Vrublevskiy, 2020).

First and foremost, we are talking about cooperation with neighboring communities that share resources, traditions, and problems. This cooperation aims to implement the joint project “Together for Sustainable Development of Territorial Communities”. The project envisages the socio-economic, cultural, security, and educational development of communities, improving the quality and comfort of life, taking into account common interests and goals, and the effectiveness of the implementation of management functions by

local governments.

The lack of adequate funding plays an important role in the implementation of various initiatives and projects aimed at improving the lives of residents and ensuring sustainable community development, implementing infrastructure and innovation projects, creating jobs and investment attractiveness, ensuring efficient management, supporting small and medium-sized enterprises, and ensuring economic sustainability and competitiveness.

The overall goal of public administration of sustainable development is to ensure the harmonious development of the economy, society, and the environment to meet society's current and future needs without harming nature and preserving the ability of future generations to meet their needs (Skoryk, Ivanytska, 2024).

The main areas of activity and tasks that local governments should address are as follows:

- The full range of management decisions should aimed at achieving the main goal – improving the quality of life in the community.

- Management decisions should be based on adaptability, which involves considering regional and local socio-economic development patterns.

- Support and develop modern high-tech and innovative industries alongside traditional ones.

- Actively involve the public in the adoption of sustainable community development strategies, and develop cooperation with scientific institutions, educational institutions, and public-private partnerships.

- Strengthen community participation in the implementation of national projects, adapting them to local conditions, and resources, and bringing them in line with the goals of sustainable community development.

- To promote inter-budgetary relations as an innovative tool for the development of an effective socio-economic complex of the territorial community, and to finance the implementation of management functions.

Conclusions

To summarize, we would like to emphasize that increasing the competitiveness of territorial communities is the result of effective

management of sustainable development at all levels, especially at the level of communities themselves, and evidence of the success of administrative reform in Ukraine.

Territorial communities, in their desire to ensure the implementation of all components of sustainable development: economic, social, and environmental, using their competitive advantages, contribute to the growth of the TC's competitiveness. In the process of developing competition between communities, there is a risk of excessive competitive comparison. The ability of communities to develop their strategies for socio-economic development, taking into account their advantages and competitive opportunities, creates a prerequisite for cooperation.

By following the goals of sustainable development, territorial communities increase their competitiveness, ability to improve community well-being, and effectively address the problems of economic development and environmental safety. A rational combination of competition and cooperation between communities is the basis for realizing common goals of raising the level of social and economic development. This means that we should consider the competitiveness of communities as an ability to increase the level of well-being of citizens, on the one hand, and an opportunity to increase the economic efficiency of the development of TCs, on the other.

To ensure that competition between communities is constructive, excessive emphasis on direct competition between territories should be avoided, emphasizing instead a balance between competition and cooperation. Achieving the goals of sustainable development of a territorial community requires democratic mechanisms, the interaction of competition and cooperation, coherence of economic policy at all levels of government, and the goals of individual territories and society as a whole. Environmental, social, and democratic aspects have increasingly been recognized as inseparable from the economic aspects of development, and the analysis of the competitiveness of territorial communities must be based on the principles of balanced development within the region or country concerning individual depressed territorial communities.

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doc. Ing. **Michaela Staníčková**
ORCID: <https://orcid.org/0000-0001-6210-2377>

Ph.D.

Ing. **Lukáš Melecký**

ORCID: <https://orcid.org/0000-0001-8889-6400>

Ph.D.

VSB-Technical University of

Ostrava

(Ostrava, Czech Republic)

**STRENGTHENING
PROJECT MANAGEMENT
RESILIENCE IN
REGIONAL AUTHORITIES:
EFFECTIVE APPROACHES
FOR SUSTAINABLE
COMMUNITY
DEVELOPMENT**

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Abstract

This chapter explores the importance of resilience in project management within local governments and its impact on long-term sustainable regional development. Given the increasing complexity and volatility of today's environment, resilience in project structures plays a crucial role in the effective use of public resources, including EU funds, and in managing unexpected challenges. The study identifies key factors that foster resilience in project management, such as flexible organizational structures, decentralized decision-making, effective crisis management, and technological innovation. Drawing on case studies from European regions where adaptive strategies have been successfully implemented, the paper proposes measures to enhance the competencies of project teams and supports more effective cooperation between regional and national institutions. Recommended practices include the introduction of agile processes, training in crisis management, automation of monitoring systems, and sharing of knowledge and resources across institutions. This paper thus provides fresh insights into how public sector project resilience can be strengthened, which is essential for the long-term development and competitiveness of regions.

Keywords: *project management, regional authorities, sustainable community development.*

Introduction

Resilience in project management is the ability of projects and organizations to handle unforeseen challenges, learn from them, and

adapt for future success (Tashakkori & Teddlie, 2010; Creswell & Plano Clark, 2017). This dynamic process involves flexibility, innovation, and the ability to respond rapidly to both external and internal pressures. In the context of regional development, resilience is crucial for maintaining the sustainability and competitiveness of regions (Boin & van Eeten, 2013). For local authorities, resilience enables more effective planning and implementation of projects, helping them to withstand socio-economic, environmental, or political shocks and minimize adverse impacts (Boin et al., 2005). This is particularly vital when working with EU funds aimed at regional development (Comfort, 2007).

This chapter examines how resilience principles in project management can empower local authorities to address challenges and optimize EU funds for sustainable regional growth. Through a comparative analysis of European case studies, it identifies resilience factors, effective practices, and strategies to enhance project management capacity in local governments. Specifically, this study addresses the following research questions:

- *What are the main factors influencing project management resilience in local authorities?*
- *How can local governments bolster resilience during project implementation?*
- *What best practices and strategies promote resilience across different regions?*

The findings provide actionable insights into how local governments can foster resilience in project management to achieve sustainable, adaptive regional projects.

Methodological background of analysis

Chapter uses a mixed-methods approach, combining qualitative and comparative analysis, to explore resilience in project management within local governments (Tashakkori & Teddlie, 2010; Creswell & Plano Clark, 2017). It helps identify resilience factors and best practices applicable across regions. Research design is based on:

- *Exploratory Phase:* Selected case studies from European regions were analyzed to identify common themes and resilience-building strategies. Data was gathered from official

reports, regional plans, and project documentation to cover resilience practices comprehensively (European Commission, 2021; World Bank, 2024).

- *Qualitative Thematic Analysis*: Core themes related to resilience, e.g. flexible structures, crisis management, and EU fund utilization were identified through thematic analysis. This approach highlighted key resilience factors and best practices for adaptability and resource management (Boin & van Eeten, 2013; Comfort, 2007).
- *Comparative Case Analysis*: By comparing case studies, the analysis evaluated how different regions implement resilience strategies, allowing for cross-case insights. This structured comparison helped identify adaptable models that can be tailored for various contexts (Boin et al., 2005; OECD, 2017).

Data sources, resp. primary data was derived from European case studies recognized for effective resilience practices. Secondary data included research articles, policy papers, and reports from sources like the European Commission and OECD, ensuring a comprehensive view of resilience in local government project management (OECD, 2019; Snyder, 2019).

Methodological rationale means the mixed-methods approach offers a thorough understanding of resilience by integrating qualitative and comparative perspectives (Tashakkori & Teddlie, 2010; Snyder, 2019). The thematic analysis captures resilience patterns, while comparative analysis shows how these strategies perform in different regions, enabling practical recommendations for sustainable and adaptable project management in local governments.

Foundations of Resilience in Project Management

Resilience in project management has become crucial for local governments aiming to deliver long-term, sustainable projects amidst growing uncertainties. This chapter explores the foundations of resilience within project management, emphasizing its application in public sector initiatives.

- *Evolution of Resilience Theory*: Originally stemming from ecology and psychology, resilience theory has expanded into management to describe an organization's capacity to adapt, withstand, and learn from challenges. In the management context, resilience is associated with agility, the ability to

respond effectively to change, and a proactive approach to potential risks. Organizations with resilient frameworks can anticipate disruptions, absorb shocks, and adapt to maintain continuity.

- *Integrating Resilience into Local Government Projects:* For local governments, resilience in project management is essential due to the unique public sector constraints such as budget limitations, diverse stakeholder interests, and regulatory demands. Key resilience practices include flexible planning, integrated risk management, and stakeholder engagement, all of which enable local governments to adapt to socio-economic shifts and unexpected environmental or political changes. By embedding resilience, local governments can ensure that projects maintain stability and provide community benefits, even when faced with adversity.
- *Key Factors Influencing Resilience in Local Project Management:* Resilience in project management is influenced by various internal and external factors. Internally, factors like organizational culture, leadership quality, and team expertise play a critical role in shaping an organization's adaptability. Externally, elements such as legal frameworks, economic conditions, and technological advancements can impact project stability. Acknowledging and managing these factors allows local governments to respond to changes more effectively, ensuring project continuity and maximizing positive outcomes for the community.

Building resilience is not only about managing risks but also about fostering adaptability, stakeholder collaboration, and proactive strategies. This approach equips local governments with tools to strengthen their project management processes, making them better suited to promote sustainable regional development and improve the quality of life for their communities.

Project Management as a Catalyst for Regional Growth in Local Authorities

Project management is vital for local authorities as it directly impacts the implementation of regional development strategies and the quality of public services. Effective project management enables

local governments to use limited resources efficiently, address diverse community needs, and achieve sustainable outcomes that enhance residents' quality of life.

- *Role of Projects in Regional Development and Public Service Delivery:* Projects are instrumental tools for local governments to translate strategic goals into tangible improvements. Through projects, authorities can promote infrastructure development, social well-being, economic growth, and environmental sustainability. Well-managed projects in areas such as transportation, healthcare, education, and environmental conservation contribute significantly to regional competitiveness and social cohesion.
- *Typical Challenges in Local Government Project Management:* Local authorities often encounter specific challenges in managing projects, including budget constraints, political shifts, administrative hurdles, and limited human resources. Financial limitations can restrict project scope, while political changes may disrupt continuity or shift priorities. Additionally, navigating complex regulations and managing stakeholder interests can create delays or resistance. Addressing these challenges is essential for successful project implementation.

Table 5.3 below illustrates notable examples of successful projects within local authorities, demonstrating the transformative power of effective project management. These initiatives – ranging from urban infrastructure upgrades and digital public services to green space development – highlight how strategic project management contributes to economic resilience, environmental sustainability, and community satisfaction. Together, these examples showcase the potential of well-executed local government projects to deliver meaningful, long-term benefits to communities and improve overall quality of life.

Project management is essential for local authorities to achieve their development goals, requiring adaptive and efficient practices to address challenges and deliver impactful results that drive sustainable regional growth and improve public services. Through effective project implementation, local governments can create a resilient and thriving environment that benefits their communities.

Table 5.3

Local Government Projects and Their Community Impacts

Project	Description	Impact
Transport Infrastructure Modernization	Upgrading urban transport networks, including roadways, bike lanes, and public transit systems.	Improved mobility, reduced emissions, and promotion of sustainable urban transport options.
Historic City Center Revitalization	Restoration of historic sites to boost tourism and local commerce.	Increased tourism, job creation, and strengthened local cultural identity.
E-Government Implementation	Digitization of public services to enhance accessibility and efficiency.	Easier access to services, reduced administrative costs, and greater transparency.
Green Space Development	Creation and enhancement of parks and recreational areas within urban zones.	Enhanced environmental quality, improved community health, and stronger social ties.

Source: own elaboration (2024) based on Walker, Holling, Carpenter, Kinzig (2004), Pelling, Manuel-Navarrete (2011), OECD (2017, 2018, 2019, 2020, 2023)

Key Drivers of Resilience in Project Management

The resilience of project management in local governments depends on various internal and external factors that shape an organization’s ability to adapt, maintain stability, and continue delivering value in the face of unexpected challenges. This chapter consolidates these factors into a streamlined overview, emphasizing the key drivers that support resilient project management.

- *Institutional Structure and Governance:* A flexible institutional structure and supportive governance practices are foundational to resilient project management. Decentralization, empowering decision-making at local levels, allows for faster response times and better adaptation to specific regional needs. Furthermore, a strong organizational culture that promotes open communication, learning, and teamwork fosters an environment where project teams can effectively manage uncertainty. Table 5.4 below highlights the impact of institutional and cultural factors on resilience.

Table 5.4

Institutional and Cultural Factors of Project Resilience

Factor	Contribution to Resilience	Management Strategies
Decentralization	Enables rapid decision-making and adapts to local conditions.	Empower local teams, encourage local adaptability.
Organizational Culture	Fosters collaboration, innovation, quick responses.	Promote learning culture and open communication.

Source: own elaboration (2024) based on Brady, Davies (2014), Flexigrant (2024)

- Financial Planning and Crisis Management:* Effective financial management, including the ability to adjust budgets and maintain contingency funds, is critical for resilience. A flexible financial plan allows organizations to respond to changing conditions without jeopardizing project objectives, while emergency funds ensure resources are available to manage crises quickly, for more details see Table 5.5.

Table 5.5

Financial and Crisis Management Strategies for Resilience

Factor	Description	Contribution to Resilience
Budget Flexibility	Ability to adapt financial plans in response to changing conditions.	Ensures project continuity during financial shifts.
Contingency Funds	Reserves allocated for crisis situations (e.g., natural disasters, economic downturns).	Enables rapid response and mitigates negative impacts.
Cost Optimization	Efficient use of resources to minimize unnecessary expenses.	Maximizes available funds for priority areas.
Financial Monitoring	Ongoing tracking of financial performance against the budget.	Identifies financial risks early and improves decision-making.

Source: own elaboration (2024) based on Flexigrant (2024)

- *Technological and Human Resource Readiness*: Adopting digital tools and investing in team development are key to resilient project management. Project management software boosts efficiency and enables agile, real-time responses. Strong leadership and continuous skill-building foster innovation and problem-solving, equipping teams to manage uncertainty effectively. These elements enhance the organization’s adaptability and resilience, see Table 5.6.

Table 5.6

Technological and Human Resource Factors in Resilience

Factor	Description	Contribution to Resilience
Digital Tools	Use of project management software and digital tools for planning and monitoring.	Increases project efficiency, transparency, and adaptability.
Technology Training	Continuous training for staff on new tools and technologies.	Enhances skills to handle digital tasks, improving flexibility.
Adaptive Leadership	Leadership with skills in decision-making, strategic thinking, and crisis management.	Guides teams effectively through uncertainty and change.
Team Skill Development	Regular training and development to improve problem-solving and adaptability.	Strengthens team’s ability to respond innovatively to challenges.

Source: own elaboration (2024) based on Flexigrant (2024)

Project Management Resilience in Specific Local Governments

The success of project management in local governments hinges on their resilience – defined by their ability to adapt to unexpected challenges and changing conditions. This resilience supports sustainable regional development, competitiveness, and preparedness for future uncertainties. This section highlights case studies from European cities that have effectively utilized resources, including EU funds, to implement impactful, resilient projects tailored to specific local needs. The success of project management in local governments hinges on their resilience. Success factors include technological innovation, community engagement, and strategic funding.

Rotterdam faces climate challenges like rising sea levels and flooding, addressed through the “Rotterdam Climate Initiative”, which aims to transform the city’s climate resilience. *Turku* aims for carbon neutrality by 2029 through a comprehensive focus on sustainable energy, transport, and a circular economy. *Ostrava*, with an industrial legacy, has launched strategic transformation plan using EU funds to drive economic and environmental improvements. *Bilbao* exemplifies urban regeneration, leveraging culture and architecture through the “Bilbao Ria 2000” project to revitalize the city. *Copenhagen* aspires to be the world’s greenest city, integrating technology and sustainable practices funded by EU and other sources. These examples underscore how strategic EU funding, strong leadership, community engagement, and innovative solutions create significant economic, social, and environmental benefits. Key success elements include tailored local adaptation, an integrated approach combining economic, social, and environmental goals, technological advancement, and collaborative partnerships. As summarized in Table 5.7, these cases offer inspiration for other local governments to build resilience through strategic resource use, clear vision, and active stakeholder involvement.

Table 5.7

Overview of Key Aspects of Resilience in Each City

City	Main Resilience Strategy	Outcome
Rotterdam	Climate adaptation and water management	Increased flood resilience, environmental improvements
Turku	Renewable energy and sustainable mobility	Reduced carbon footprint, economic growth in green sectors
Ostrava	Economic diversification and green initiatives	Enhanced quality of life, economic shift from heavy industry
Bilbao	Cultural and infrastructure revitalization	Increased tourism, strengthened cultural identity
Copenhagen	Smart city technology and data-driven services	Improved service efficiency, greater public engagement

Source: own elaboration (2024) based on Rotterdam Climate Initiative (2013), City of Rotterdam (2019), City of Turku (2020), Statutory City of Ostrava (2020), Plaza, Haarich (2013), City of Bilbao (2020), City of Copenhagen (2020)

Successfully managing unexpected challenges in project management is a key factor in achieving the set objectives and maintaining project continuity. In this chapter, we focus on a detailed analysis of the strategies and practices identified in the previous case studies. We will explore how local governments have responded effectively to unforeseen events and what methods they have implemented to increase the resilience of their projects. This analysis will provide valuable insights and best practices that can be applied in other contexts and help strengthen project management resilience more broadly. The analysis shows that successful management of unexpected challenges is the result of an integrated approach combining proactive planning, flexibility, strong communication, technological innovation and human resource development. The analysis shows that project management resilience is not the result of one-off measures but of a continuous and integrated approach. Local governments that have been able to successfully manage unexpected challenges have systematically implemented strategies in different areas, see Table 5.8 for a closer look, which serves as a summary of the key strategies and practices identified in the analysis. They can be used as a practical tool in planning and implementing resilient project management in different contexts. The strategies are interlinked, and their combination creates a synergistic effect that strengthens project resilience.

Understanding the differences in project management resilience across various levels of government is essential for identifying best practices and facilitating knowledge transfer. This comparative analysis of local, regional, and national governments examines how institutional structures, authority, and resource allocation impact their capacity to effectively manage projects in uncertain environments. It also provides insights into how different levels of government can collaborate, with local authorities leveraging lessons from higher levels to enhance their resilience. Local and regional governments are instrumental in implementing regional development projects, yet their approaches vary significantly due to differing capacities and degrees of centralization. To illustrate how these structures affect resilience, this section compares strategies in Germany, France, and Sweden. Germany's decentralized federal system grants regions significant autonomy to respond to local needs,

Table 5.8

Key Strategies for Resilient Project Management

Category	Key Strategies
Proactive Planning and Risk Management	Scenario planning. Regular review of risks. Creation of risk teams.
Flexibility and Adaptability	Modular design projects. Agile management methodologies. Decentralization of decision making.
Communication and Stakeholder Involvement	Transparency. Participatory planning. Inter-organisational cooperation.
Technology and Innovation	Digital management tools. Innovative technology solutions. Cybersecurity.
Human Resources and Leadership Development	Continuous education. Supporting innovation. Adaptive leadership

Source: own elaboration (2024) based on European Commission (2021), Ferry (2021), Flexigrant (2024)

though it complicates national policy coordination. France’s centralized model ensures policy consistency and resource efficiency but limits local flexibility, often slowing responses to specific community needs. Sweden adopts a blended approach, combining decentralization with robust coordination mechanisms that promote innovation and adaptability while maintaining coherence with national policies. Table 5.9 summarizes the institutional structures and resilience strategies of Germany, France, and Sweden, highlighting the advantages and challenges each country faces in building resilient project management practices.

Conclusion

Resilient project management is essential for local governments to achieve sustainable development, enhance competitiveness, and navigate uncertainty. This chapter has outlined key factors that strengthen resilience, including adaptive governance, financial flexibility, technology adoption, and skilled leadership. By implementing these strategies, local authorities can better manage challenges, optimize resource use, and deliver lasting benefits to their communities.

Table 5.9

Comparison of Government Structures

Country	Institutional Structure	Resilience Benefits	Challenges
Germany	Decentralized (federal)	Tailored local responses, innovation	Coordination issues across regions
France	Centralized	Consistent policy application, resource efficiency	Limited local flexibility, slower adaptation
Sweden	Decentralized with coordination	Balanced innovation and policy coherence	Complex inter-governmental coordination

Source: own elaboration (2024) based on Page, Goldsmith (1987), Cole, John (2001), Bäck, Heinelt, Magnier (2006), Dyson, Goetz (2012), Dick, Gaesing, Inkoom, Kausel (2016)

The analysis of case studies from European cities illustrates how resilient practices – supported by EU funds, innovation, and community engagement – drive economic, social, and environmental outcomes. Effective collaboration between government levels further enhances resilience, allowing for tailored local solutions within a coherent national framework. Adopting these practices enables local governments to create a robust foundation for sustainable regional growth and community well-being.

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CONCLUSION

Ensuring the sustainable development of socio-economic and ecological systems in the face of structural transformation is a shared responsibility that requires both national and international commitments. At the national level, governments must implement policies that balance economic growth, social inclusion, and environmental protection. This includes fostering innovation, promoting equitable development, and safeguarding natural resources to build resilient societies capable of withstanding economic and ecological challenges.

On the international front, cooperation and collaboration are essential to address transboundary issues such as climate change, biodiversity loss, and resource management. Global frameworks like the United Nations Sustainable Development Goals and the Paris Agreement serve as guiding pillars for nations to work collectively toward a sustainable future. International imperatives, such as technology transfer, climate finance, and equitable trade practices, empower developing nations to pursue green development pathways while ensuring that no country or community is left behind.

Structural transformation presents both opportunities for growth and risks of ecological degradation and inequality. To navigate these challenges effectively, nations must integrate sustainable practices into their transformation processes while working together to create inclusive, fair, and environmentally responsible global systems.

In the face of structural transformation driven by globalization, technological innovation, urbanization, and climate change, it is essential to identify and address the key factors that influence sustainable development. Economic stability, equitable access to resources, environmental stewardship, and the adoption of innovative technologies play a pivotal role. Additionally, strong governance, cultural values, and ethical considerations ensure that policies are effectively implemented, fostering long-term resilience and progress.

The results of the authors' research in the scientific monograph are devoted to solving the problems of studying the determinants of sustainable development of socio-economic and ecological systems, the use of marketing and logistics tools, human resource management, social security and labour market development, the

introduction of innovation-oriented systems, improvement of public administration and development of territorial communities.

The sustainable development of socio-economic and ecological systems is shaped by a complex interplay of economic, social, environmental, technological, and governance determinants. These factors collectively influence the ability of societies to achieve long-term growth, equity, and ecological balance in the face of structural transformations such as globalization, technological advancements, and climate change.

Economic stability, resource efficiency, and inclusive growth form the foundation for sustainability, while social determinants – such as equity, education, and public health – ensure that development benefits all members of society. Environmental stewardship, including the management of natural resources and climate action, is essential for preserving ecosystems that underpin human and economic well-being. Technological innovation and digital transformation provide the tools needed to address sustainability challenges, while strong governance, institutional capacity, and ethical frameworks ensure effective implementation and accountability.

The results of the authors' research on the determinants of sustainable development of socio-economic and ecological systems have shown that such a category as sustainability is gaining importance. Attention is focused on the need for sustainable learning, structural transformations in the economy, counteracting the destructive impact of the internal and external environment, and ensuring economic security. With a view to diagnosing socio-economic and environmental processes, the models for analysing statistical data from various sectors of the economy are defined. The authors formulate recommendations for ensuring food and environmental security, overcoming the consequences of military aggression and post-war reconstruction of the country. The authors substantiate the priority directions of the European Commission to ensure sustainable development.

The integration of marketing and logistics into the management of socio-economic and ecological systems plays a critical role in advancing sustainable development. Effective marketing strategies help promote sustainable products, raise awareness, and influence

consumer behavior toward responsible consumption. By aligning market demand with environmentally friendly and socially inclusive products and services, businesses can drive economic growth while contributing to societal well-being and ecological preservation.

On the other hand, logistics ensures the efficient movement of goods, services, and resources while minimizing waste and reducing environmental impacts. Sustainable logistics practices – such as green supply chain management, optimized transportation systems, and circular economy approaches – play a crucial role in reducing carbon emissions, conserving natural resources, and improving cost efficiency. By leveraging innovative technologies and data-driven systems, logistics can enhance operational effectiveness while supporting environmental and social goals.

Accordingly, the authors of the scientific monograph investigated the challenges and prospects of the e-commerce market in Ukraine, the characteristics of sustainable marketing in Lithuania, and identified marketing measures to improve the company's operations. The authors propose a digital platform as a tool for improving the efficiency of company logistics management in the context of digitalisation. The authors conclude that marketing and logistics are key elements of strategic management in modern socio-economic and ecological systems and contribute to sustainable development.

Sustainable models of human resource management, social security, and labor market development are essential for achieving inclusive growth, social equity, and long-term economic stability. Human resource management that prioritizes employee well-being, skill development, and diversity ensures a productive and resilient workforce capable of adapting to changing economic and technological landscapes. By fostering a culture of continuous learning, innovation, and fair treatment, organizations can contribute to both individual growth and broader societal development.

Social security systems play a crucial role in safeguarding vulnerable populations, reducing poverty, and ensuring economic resilience. Sustainable social security models provide comprehensive protection, including access to healthcare, pensions, and unemployment benefits, while remaining fiscally viable. Such systems promote social cohesion, reduce inequality, and enable individuals to participate meaningfully in the economy, even in the

face of economic disruptions and demographic shifts.

Labor market development, supported by proactive policies and sustainable practices, ensures the creation of decent work opportunities, fair wages, and inclusive employment. By integrating digital technologies, promoting green jobs, and addressing skills gaps, labor markets can adapt to structural transformations and contribute to a more sustainable economy.

The authors of the scientific monograph applied the organisational modelling of Agile-transformation and Kaplan-Meier estimator to form sustainable models of human resource management. The problems and opportunities for the inclusion of people with disabilities in the active labour market, the role of social workers in promoting the successful integration of people with disabilities into society are explored. The use of strategic management in social security for the development of social services for the elderly and modern approaches to systematic solution of business and social issues are proposed.

The sustainable development of innovation-oriented socio-economic and ecological systems is essential for fostering a balanced and resilient future. By integrating innovation into economic, social, and environmental dimensions, societies can address complex challenges such as climate change, resource depletion, and social inequalities while driving growth and progress.

Innovation acts as a catalyst for sustainable development by promoting the creation of cutting-edge technologies, efficient processes, and adaptive solutions. It supports the development of green industries, renewable energy, sustainable agriculture, and circular economies, all of which contribute to reducing environmental impacts and enhancing ecological sustainability. Additionally, innovation-oriented systems empower communities through increased access to education, healthcare, and social inclusion, ensuring that no one is left behind in the pursuit of sustainability.

To this end, the authors of the scientific monograph analysed startup ecosystems, characterised approaches to the structure of industrial deep decarbonisation in sustainable Industry 4.0, and explored mechanisms for integrated land use management. The authors pay special attention to social innovations, in particular, they study the impact of social innovations on human resource

management in an organisation, and determine the influence of intercultural views on environmental ethics. The authors propose methodological principles and technologies for managing innovative development, including in the sectors of the economy.

Improving public administration and the development of territorial communities are essential for fostering sustainable, inclusive, and resilient regions. Effective public administration ensures the efficient management of resources, the implementation of policies, and the provision of quality services that meet the needs of local populations. At the same time, the development of territorial communities enhances social cohesion, economic growth, and environmental sustainability, contributing to the overall well-being of residents.

Mechanisms for improving public administration involve modernizing governance structures, enhancing transparency, and promoting citizen participation. Strengthening institutional capacity, adopting digital solutions, and fostering collaboration between local governments, businesses, and civil society are key to ensuring responsive and accountable administration.

In tandem, developing territorial communities requires targeted investments in infrastructure, education, healthcare, and social services. Supporting local development initiatives, encouraging community engagement, and implementing policies that address regional disparities are vital for creating thriving, self-sustaining communities.

The authors' research and generalisation of sustainable development of territorial communities are united by the need to attract foreign investment to strengthen the economic security of regions, the need to carry out an economic assessment of entrepreneurship development in cross-border regions, increase the competitiveness of territorial communities and strengthen the sustainability of project management in regional authorities.

In general, the success of sustainable development depends on a shared vision, strong leadership, and the commitment of all stakeholders – governments, institutions, businesses, and individuals. By aligning national priorities with international imperatives, we can achieve a balance that ensures prosperity, social equity, and ecological integrity for current and future generations.

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