Current issues of the management of socio-economic systems in terms of globalization challenges

Scientific monograph

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The authors of the scientific monograph have come to the conclusion that the management of socio-economic systems in the terms of global challenges requires the use of mechanisms to ensure security, optimise the use of resource potential, increase competitiveness, and provide state support to economic entities. Basic research focuses on assessment of economic entities in the terms of global challenges, analysis of the financial system, migration flows, logistics and product exports, territorial development. The research results have been implemented in the different decision-making models in the context of global challenges, strategic planning, financial and food security, education management, information technology and innovation. The results of the study can be used in the developing of directions, programmes and strategies for sustainable development of economic entities and regions, increasing the competitiveness of products and services, decision-making at the level of ministries and agencies that regulate the processes of managing socio-economic systems. The results can also be used by students and young scientists in the educational process and conducting scientific research on the management of socio-economic systems in the terms of global challenges.

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INTRODUCTION

The functioning of any socio-economic system requires management mechanisms. For the existence and effective functioning of an enterprise, region, country, etc. – it is necessary to maintain the system parameters, which is exactly what is done through management. Therefore, in the terms of global challenges, the problem of finding an effective model and mechanisms for managing socio-economic systems is becoming increasingly important. In the current environment, this problem is exacerbated by the preservation of socio-economic systems in the terms of security and state support. Implementation of the best practices of managing socio-economic systems in the terms of crises and pandemics around the world serves as an effective management mechanism.

Ensuring the effective management of socio-economic systems in the terms of global challenges requires the accumulation and optimal use of resources, capabilities of economic entities and state support mechanisms aimed at protecting enterprises, developing entrepreneurship and exporting products and services, sustainable development of territories using modern marketing tools, attracting domestic and foreign investment, introducing innovations and modern information technologies.

The purpose of writing this scientific monograph is to justify the theoretical and methodological foundations for the management of socio-economic systems in the terms of global challenges.

The object of the authors' research was modern global challenges and threats to security, the process of ensuring the competitiveness of economic entities, instruments of state support for sectors of the national economy, the formation of labour potential and migration processes, mechanisms for ensuring financial and food security, the efficiency of functioning of integrated territorial communities and sustainable regional development.

The subject of the study was decision-making models in the terms of global changes, tools for strategic planning, marketing and logistics, innovation and information technology, mechanisms for banking and insurance development, trade, agriculture, export capacity building, critical infrastructure development and national security regulation.

Chapter 1

IMPACT OF GLOBALIZATION CHALLENGES ON THE MANAGEMENT OF SOCIO-ECONOMIC SYSTEMS

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ASSESSMENT OF THE BALTIC COUNTIES E-TRADE IN GLOBAL ENVIRONMENT

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Abstract

The article analyses the topic of e-trade assessment in a global environment. Based on the data collected, a multi-criteria assessment of e-trade was carried out, dividing the factors into five dimensions: emotional (consumer satisfaction and trust), technological (internet accessibility, data security and privacy), financial (e-GDP, e-trade sales, impact of e-trade on overall company turnover), social (internet usage and purchasing volumes) and tax environment (VAT), and a comparative analysis of the countries to compare the results of economically similar countries (for that purpose, a comparative analysis of the Baltic countries – Lithuania, Latvia and Estonia – was carried out), to find out why the market leaders are performing so well in the e-trade sector, and to identify the methodologies and practices used in these countries, so as to identify the most effective methods and practices that can be applied in other countries. After carrying out a comparative analysis of the Baltic countries, it was found that Estonia is the leading country in the assessment of trust, technological and social indicators of electronic commerce. Lithuania surpasses Estonia in the field of financial indicators and consumer satisfaction when shopping online.

Keywords: *e-trade, globalization, global economy, e-trade assessment models.*

Introduction

Today, the internet is becoming an integral part of everyone's life and business life. During the COVID-19 pandemic, more and more operations are moving online, giving businesses the ability to reach their customers on a global scale and helping to reduce geographic boundaries. According to Huirong (2014), e-trade is changing the world's business model, influencing corporate governance, consumers' purchasing habits and becoming a key driver of economic growth. As e-trade removes time and space constraints, it increases international cooperation between different countries. For this reason, international standards and government regulations have an important influence on e-trade. It should be stressed that all these regulations are not defined on a statistical basis, but on a legislative basis, and it is therefore very difficult to incorporate these factors into a framework for assessing e-commerce. However, the increasing use of information and communication technologies makes it increasingly difficult to assess the effectiveness of e-trade. The assessment of e-trade needs to be carried out in the light of changes and trends in the global economy. The object of the study is the assessment of electronic commerce in the context of globalization and the global economy. This paper explores the issue of what factors are necessary to assess e-trade performance and what is the importance of applying e-trade assessment models in a global environment.

Materials and Methods

Defence expenditure as a part of government spending may serve to influence economic development in various ways. E-trade becomes an increasingly important phenomenon in the global business world. According to Murphy and Bruce (2003), the development of e-trade is important because it helps to improve the efficiency of the overall market, facilitating accessibility and market entry. The academic literature uses various terms to describe e-trade: online trade, electronic commerce (ecommerce), electronic commerce (e-trade), etc. It is worth pointing out that the most commonly used term is "e-trade", which does not have a single and precise definition (Table 1.1).

In the most general sense, e-trade is defined (Gangeshwer, 2013; Khan et al., 2014; Longo & Yonah, 2017; Villa et al., 2018) as the buying and selling of goods or services online. Other authors (Nanehkaran, 2013; Georgiadis et al., 2013; Khan, 2016) define e-trade in a broader sense that it is not only the buying and selling of goods or services online, but the concept encompasses the whole process from the description of the product, the posting of pictures on the internet, up to the point where the consumer receives the goods.

Although the majority of scientific works mention and examine the benefits of electronic commerce, some authors are more inclined to emphasize the disadvantages of electronic commerce. Therefore, various factors limiting the development of e-commerce can be found in the scientific literature (Table 1.1).

Table 1.1

E-trade limitations

Technical deficiencies	– Lack of generally accepted security and reliability standards; – Insufficient telecommunications bandwidth; – Constantly evolving software development tools; – Difficulty integrating e-commerce software with existing applications and databases; – Dedicated web servers are required; – Internet availability problem.
No technical limitations	– Lack of state regulation and e-commerce standards; – Distrust of customers; – Greater risk of financial fraud; – High development costs; – Security and privacy issues; – Inability to verify product quality; – Customer loyalty; – It is not possible to touch/view the product; – Delay in delivery of goods.

Source: Awais and Samin, 2012; Niranjanamurthy, Kavyashree, Jagannath et al., 2013; Paradkar, 2014; Deshpande, 2016

According to Koenig and Wigand (2004), the main driving force of e-commerce is the business-to-business (B2B) sector, where there is strong international competition and globalization. Multifaceted international trade links increase the speed of diffusion of standardized electronic transactions. Meanwhile, according to Palacios (2003), thanks to the development of the Internet, the increasing amount of information, which has become easily accessible to both consumers and businesses, has strengthened competition not only in local but also in international markets. Companies of all types and sizes have felt the need to update and improve their business practices in order to find new, more efficient ways to create added value. It was an inevitable condition to remain in the competitive market. So, over the years, more and more companies started using the World Wide Web to expand their markets or help integrate their business in foreign countries to help manage their supply chain. All these factors have led to the emergence of e-commerce, which has rapidly spread throughout the world and affected the economies of many countries.

Totonchi and Manshady (2012), examined in detail the relationship between globalization and e-commerce. It is claimed that the process of globalization and technological changes have created the basis for the emergence of a new economy operating on a global scale, which is based on knowledge and information. The study revealed that e-commerce helps strengthen a company's existing competition and helps expand it internationally.

According to Donici and Diacon (2011), electronic commerce will have an increasing impact on the global economy. Small and large businesses have become dependent on e-commerce to survive in the local, national and global economy. These companies have transferred communication with customers and suppliers to the Internet space, so that they can more easily enter into and create electronic transactions, and more effectively advertise their offered products.

Aydın and Savrul (2014), also examined the relationship between e-commerce and globalization. The authors argue that in the transition to a new form of economy that is based on knowledge and information, e-commerce has helped to remove the constraints of time and space, and has also provided an opportunity to reduce production costs. In the presented figure (Table 1.2), the authors propose, based on Aydın and Savrul (2014), such a representation of the globalization of e-commerce, which shows that the state policy of each country should be based on the promotion of e-commerce, which should be directed to business to business (B2B), and business-to-consumer (B2C), encouraging not only to expand the circle of customers, but also to strengthen international cooperation opportunities, which is easiest to do for large (large) or small companies.

Table 1.2

Globalization of electronic commerce

GLOBAL ENIRONMENT	✓ Global outsourcing ✓ Technological innovations (innovations) ✓ Market liberalization
NACIONAL ENVIRONMENT	✓ Sector structure ✓ Information infrastructure ✓ Financial systems ✓ Human Resources ✓ User needs ✓ Social/cultural factors
STATE POLICY	✓ Liberalization of telecommunications ✓ Investments in infrastructure ✓ Regulatory and legal environment ✓ Education ✓ Promotion of electronic commerce
EL.TRADE DEVELOPMENT	✓ Business to Business (B2B) ✓ Business - to Consumer (B2C) ✓ Large/small companies
SOCIAL /ECONOMIC FACTORS	✓ Employment ✓ Trade ✓ Productivity

Source: composed by the authors and Aydın ir Savrul, 2014

As the use of information communication and technology in business and everyday life intensifies, it is becoming more and more difficult to assess the effectiveness and benefits of e-trade, not only for the business, the country but also for the global economy. For this reason, evaluation is becoming more complex, as it is no longer enough to look at the technological characteristics of a website or customer satisfaction alone, but it is worth looking at the impact of e-trade on a national scale.

When looking at the benefits and drawbacks of e-trade, it has been noted that there is a strong focus on the emotional state of consumers. Emphasis is placed on the importance of consumer satisfaction (Awais & Samin, 2012; Delone & McLean, 2003; Molla & Licker, 2001; Brilliant & Achyar, 2016; Chaffey & Ellis-

Chadwick, 2012; Aydın & Savrul, 2014) and trust (Molla & Licker, 2001; Brilliant & Achyar, 2016; Gheiji, 2015; Christensen & Methlie, 2003; European Commission, 2016) in e-trade.

Since e-trade can be understood as the interaction between communication, data management and security systems that facilitate the exchange of commercial information related to the sale of products or services (Nanehkaran, 2013), it is useful to include technological factors in the measurement model for effective e-trade measurement (Totonchi & Manshady, 2012). The literature analysis has shown that the main factors related to technical characteristics of e-trade are security (Awais & Samin, 2012; Quayle, 2002; Brilliant & Achyar, 2016; Huirong, 2014, Chaffey, 2012), ensuring privacy (Awais & Samin, 2012; Brilliant & Achyar, 2016; Chaffey, 2012), and increasing the reach of the internet (Niranjanamurthy *et al.*, 2013).

The analysis of the assessment models shows that very few models include financial factors in the assessment framework. According to Wen et al. (2003), it is very important to include financial indicators in the e-trade evaluation framework, which are typical for a normal business Marginean (2015).

When examining the benefits, drawbacks and evaluation models of e-trade, it has been observed that only a small number of authors emphasise the influence of tax environment factors on the effectiveness of e-trade. Awais and Samin (2012), argue that changes in the tax environment, legal framework and regulations can affect e-trade sales.

In order to justify the application of the e-commerce evaluation model presented in the theoretical part in a global context, a comparative analysis of the Baltic countries (Lithuania, Latvia and Estonia) is performed. A statistical analysis of Baltic countries was carried out, looking at five dimensions: emotional, technological, financial, the tax environment, social, growth rates.

The comparative method is a set of logical procedures, with the help of which the empirical validity of alternative (competing) hypotheses about causal relationships between phenomena is systematically checked and those hypotheses are either confirmed or rejected (Norkus & Morkevičius, 2011).

This analysis is based on the data and results obtained in the multi-criteria evaluation method. The comparative analysis was chosen because it aims to compare the results of economically similar countries, to find out why the countries considered to be market leaders achieve such good results in the e-commerce sector, what methodology and practices are used by these countries, in order to discover the most effective methods and methods of operation and apply them to the activities of other countries.

Research results and discussion

This study uses an 11-indicator framework comprising indicators identifying five dimensions (Table 1.3).

Table 1.3

Multi-criteria evaluation indicator framework

DIMENSION	FACTORS	INDICATORS	SOURCE
Emotional	Consumer confidence in e-trade	Percentage of the population who have not bought goods or services online in the last year due to lack of confidence in e-trade (%)	Eurostat
	Consumer satisfaction with e-trade	Percentage of the population that did not experience any problems when shopping online, (%)	Eurostat
Technological	Internet accessibility	Internet accessibility (%)	Eurostat
	Ensuring security	Number of secure internet servers (pcs.)	World Bank
	Ensuring privacy	Cyber security, index	International Telecommunication Union
Financial	E-trade sales	E-trade sales, EUR (billion)	Statista
	Impact of e-trade sales on total turnover of the company	Share of turnover generated by e-trade revenues (%)	Eurostat
	Contribution of e-trade to GDP	E – GDP, (%.)	Ecommerce Foundation
Fiscal environment	National regulations, international/European standards	VAT – value added tax, (%)	Ecommerce Foundation
Social	Scale of e-trade purchases	Share of the population that buys goods or services online (%)	Eurostat
	Scale of internet usage	Percentage of the population that uses the internet (%)	Eurostat

Source: composed by the authors

Emotional factors include customer satisfaction and trust in e-trade. To measure these factors, Eurostat data on the proportion of the population (in percentage) that did not buy goods or services online in the last year (2017) due to a lack of confidence in e-trade is used, while the satisfaction criterion is best represented by an indicator showing the proportion of the population (in percentage) that bought goods or services online and was satisfied with the product and had no problems with the quality or delivery. As e-trade is the result of technological advances, technological factors, which include internet accessibility and data security and privacy issues, are of great importance in the study of this topic.

Internet accessibility is best described by data collected by Eurostat on the percentage of a country's population with access to the Internet.

Security is defined using data collected by the World Bank on the number of secure internet servers per million inhabitants. The privacy factor is represented by data collected by the International Telecommunication Union on a country's cyber security index. To reflect economic factors, we selected Eurostat, the Ecommerce Foundation and Statista collected data on the share of a company's turnover generated by e-trade revenues, the contribution of e-trade to the country's GDP, and the country's e-trade sales volume.

The countries Lithuania, Latvia and Estonia were chosen because they are similar in size and are united by the same historical events that influenced the development of the states. As separate polar units, these countries were formed at a very similar time in 1918, independence was restored in 1990-1991. Other country characteristics are presented in Table 1.4.

Thus, according to the data collected by the Ecommerce Foundation, Payments & E-commerce Report (2018), it can be said that the largest in terms of area and population is the state of Lithuania, where 65,300 sq. km 2.9 million people live in the area population (of which as many as 2.48 million are over 15-year-olds). The area of the state in neighbouring Latvia is very similar, where this figure reaches 64,589 square meters. km., but the population is almost 32 percent lower than in Lithuania and amounts to 1.98 million (where, respectively, as many as 1.68 million of the country's inhabitants are over 15 years old). The smallest Baltic state in terms of area and population is Estonia, where the country's area is only 45,226 square meters. km., and the population is 1.3 million (twice less than in Lithuania). In Estonia, even 1.1 million of the country's population is over 15 years old. All the Baltic countries joined the European Union in 2004, but Lithuania was the last country to change its national currency to the common currency of the European Union - the euro. It did this only in 2015, while Estonia changed its national currency to euros in 2011.

Table 1.4

Comparison of data from the Baltic States, 2018

Indicator/ State	Lithuania	Latvia	Estonia
Area	65 300 km²	64 589 km²	45 226 km²
Population	2,9 million	1,98 million	1.31 million
Population (+15 years old)	2,48 million	1,68 million	1,1 million
Accession to the EU	2004	2004	2004 m.
Changing the national currency to euros	01/01/2015	01/01/2014	01/01/2011
GDP per capita	$ 14 251,78	$ 13 654,85	$ 17 084,52
Number of Internet users	2,1 million	1,57 million	1,16 million
Average online spend, USD	$ 392,75	$ 324,00	$ 389,00
E-Commerce Market, Business-to-Consumer (B2C), USD (Billion)	$ 0,52	$ 0,28	$ 0,18
Digital Economy and Society Index (DESI)	13 place	19 place	9 place

Source: compiled by the authors based on data collected by the Ecommerce Foundation, Eurostat, Payments & E-commerce Report

GDP per capita is an economic indicator showing the country's level of economic development. The lower the gross domestic product per capita, the poorer the country's economy and the people living in the country. According to the GDP per inhabitant of the country, the leading state is Estonia, where the GDP per inhabitant reaches 17,084.52 US dollars, while in Lithuania this figure is equal to 14,251.78 US dollars. The lowest indicator is in Latvia, where GDP per capita is equal to 13,654.85 US dollars. This shows that Latvia is the economically poorest country in the Baltic region according to this indicator.

When comparing the number of Internet users in the Baltic region, the leading country is Lithuania, where the number of Internet users is the highest and reaches 2.1 million population, and an average of \$392.75 is spent online. 1.57 million people use the Internet in Latvia of the country's population (average online spending 324.00 US dollars), and in Estonia 1.16 million respectively population, where the average online shopping spend is \$389.00).

Evaluating the entire e-commerce business-to-consumer market, it can be noted that this market is the largest in Lithuania and amounts to 0.52 billion US dollars, while in Latvia and Estonia, respectively, this figure reaches 0.28 billion and 0.18 billion US dollars.

Digital Economy and Society Index (DESI) is a composite indicator used to measure progress in the digital field in Europe, which includes opportunities to use e-communication skills, internet usage skills, e-assessment of resource volumes, integration of key digital technologies and public sector electronic services. It is calculated by evaluating the countries of the European Union according to five aspects: Infrastructure connectivity (fixed broadband, mobile broadband, broadband speed and prices), human capital (internet use, basic and advanced digital skills. The digital skills of the population are assessed based on their ability to use digital services), use of the Internet (citizens' use of content, communications and transactions on the Internet), integration of digital technologies (digitalization of business and e-commerce. The use of digital technologies in business is measured taking into account the use of digital technologies – e-commerce in daily business processes), digital public services (public sector services are evaluated by recording the level of development of public electronic services in the country).

According to this indicator, Estonia is the leader, which ranks 9th in all the previously mentioned areas. Lithuania's results are better than the European Union average in all areas, except for human capital. In terms of infrastructure connectivity, Lithuania's indicators are among the best in Europe, especially in the field of fixed and mobile communication coverage, but Lithuania lags behind in terms of the utilization of opportunities and ranks 13th. In Latvia, the situation is even worse, it ranked only 19th out of all 28 European countries (D. Britain was a member of the EU at the time of the study).

In order to carry out a comprehensive assessment of e-commerce, it is worth examining the data of the indicators used during the multi-criteria assessment and comparing them on the scale of the Baltic region (Table 1.5).

Table 1.5

Analysis of e-commerce indicators in the Baltic States, 2017

Dimen-sions	Factors	Characteristics	Lithuania	Latvia	Estonia
Emotional	Consumer confidence in electronic commerce	Share of the population who did not buy goods or services online in the last year due to lack of trust in e-commerce, (percent)	11	12	6
	Consumer satisfaction in electronic commerce	Share of the population who did not experience any problems when buying online, (percent)	80	73	71
Technol-gical	Internet availability	Internet availability, (%)	75	79	88
	Ensuring security	Number of secure internet servers, (units)	13 061,40	11 957,29	29 173,38
	Ensuring privacy	Cyber Security, Index	0,504	0,688	0,846
Financial	The impact of e-commerce sales on the company's total turnover	Share of turnover, which consists of income received from e-commerce, (percent)	13	9	16
	E-commerce sales	E-commerce sales, EUR (billion)	0,515	0,29	0,25
	Contribution of e-commerce to GDP	E - GDP, (percent)	1,13	1,3	1,08
Social	Scales of Internet users	Share of the population who use the Internet, (%)	79	82	89
	Scales of e-commerce purchases	Share of the population who buy goods or services online, (percent)	38	46	58
Tax environment	State regulations, international/ European standards	VAT - value added tax, (%)	21	21	20

Source: compiled by the author based on the collected data to perform a multi-criteria evaluation

Evaluating the emotional dimension, it is observed that the highest trust in e-commerce exists in Estonia, where in the analyzed year, the smallest part of the population (percent) did not buy goods or services online due to lack of trust in e-commerce. The lowest distrust is in Latvia (even 12 percent of the country's population did not buy goods online due to distrust). However, satisfaction with e-commerce is the highest in Lithuania, here even 80 percent residents did not experience any problems when shopping online and were satisfied with their shopping. The lowest percentage of satisfied buyers is in Estonia, where only 71% of the country's residents were satisfied with online shopping.

Analyzing the factors included in the technological dimension, it can be seen that Estonia is the leading country in all areas: internet availability, the number of secure internet servers and the highest cyber security index. Lithuania has the lowest indicators in the areas of internet accessibility and cyber security.

The analysis of financial factors revealed that the largest share (percentage) of the turnover of the country's companies, which consists of income from e-commerce, is in the country of Estonia, and this number is correspondingly equal to 16%. However, it is worth noting that according to the number of e-commerce sales, the largest number is in Lithuania (EUR 0.515 billion), but in terms of the contribution of e-commerce to the gross domestic product (E-GDP), Latvia leads, where e-commerce accounts for 1.3 percent country's GDP.

In the social dimension, where the scale of the country's population using and shopping on the Internet is examined, Estonia leads the way. In this country, even 89 percent use the Internet, and 58 percent buy of the country's population. The worst results are in Lithuania, where only 79 percent use the Internet and only 38 percent buy of the country's population.

Examining the factor of the tax environment – the amount of value added tax in the Baltic countries, it was noticed that the lowest tax and a more favourable business environment is in Estonia, where this tax reaches 20%, while in Latvia and Lithuania – 21%. This fee shows what part of the shopping cart is taxed.

The payment and e-commerce report prepared by PPRO companies (2018) examined the e-commerce environment in individual countries of the Baltic region. This report mentions that

Estonia is a leading Baltic country because it operates an open, comprehensive economy based on a developing and digitally literate society. In Estonia, even 98 percent population have bank accounts and even 31 percent citizens of the country – credit cards. In the field of financial settlements, Estonia is on a par with Western European countries, as merchants have no problems choosing payment methods that are acceptable at the national level. Meanwhile, Latvia is named, like many Central and Eastern European countries, as a rapidly growing e-commerce market. The digital society is one of the essential features of the country, which makes the country attractive for expanding e-commerce. In Latvia, even 90 percent of the country's population have bank accounts and 22 percent of the population – use credit cards. Comparing all three Baltic countries – Lithuania is the least distant from the main e-commerce markets – good internet penetration, residents are used to shopping online not only in the local market, but also from foreign merchants. Although the banking system works well, 78 percent use bank accounts, and only 10 percent use credit cards of the country's population. Internet accessibility is still a pressing issue in the country.

In summary, it can be said that Estonia is the leading country in the assessment of e-commerce trust, technological (internet accessibility, security and privacy assurance), social (internet use and purchase scale in electronic space) indicators. These results could also be influenced by the business-friendly tax environment of the country. Lithuania surpasses Estonia only in the field of financial indicators (number of e-commerce sales, contribution to the country's GDP) and consumer satisfaction when shopping online. It can be assumed that Lithuania's results in the e-commerce market are not so good because there are still restrictions on Internet accessibility, security and privacy in the country.

Conclusions

The analysis of e-trade evaluation models shows that most of the models described in the literature have a number of limitations. One of the main ones is that they are only applicable at the company level without taking into account national or global indicators. It was observed that most models only look at the technical characteristics of an e-trade website or at indicators describing the state of the consumer (satisfaction, trust), which help to evaluate e-trade only from the point of view of the consumer or the seller, but do not take into account all the actors involved in the sector: the consumers (buyers), the organisations (sellers) and the government.

The article analyzed the scientific literature on the benefits and limitations of e-commerce in order to determine the most important factors influencing the evaluation of e-commerce. It was found that researchers tend to divide the benefits of e-commerce for sellers into tangible and intangible. From a material point of view, e-commerce has enabled sellers to reduce operating costs, increase investment return, business efficiency and profitability indicators. In an intangible sense, e-commerce has helped companies to make business processes more efficient, to provide better and faster customer service, and to increase their loyalty. Analyzing the limiting factors of e-commerce, it was found that the biggest limitations of e-commerce are: lack of internet availability, security and privacy assurance, and lack of user satisfaction and trust in e-commerce.

Taking into account the shortcomings observed, the authors propose to classify the constituent factors into five dimensions when developing an e-trade evaluation model: emotional (customer trust and satisfaction with e-trade), technological (internet accessibility and security, privacy), financial (impact of e-trade on business turnover, contribution of e-trade to the country's overall GDP, and the scale of e-trade sales), tax environment (government regulation, influence of international e-trade standards), and social (scale of internet usage and purchases). This assessment model allows for an analysis of e-trade at national and global level, comparing countries with each other.

After conducting a comparative analysis of e-commerce evaluation in the Baltic countries, it was established that Estonia is the leading country in the evaluation of e-commerce trust, technological (internet accessibility, security and privacy assurance), social (internet use and purchase scales in electronic space) indicators. This was also confirmed by the results of the multi-criteria assessment, according to which Estonia is the leading country in the Baltic region. These results could also be influenced by the business-friendly tax environment of the country.

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THE CONSTRAINTS AND OPPORTUNITIES OF COMMERCIAL ENTITIES FUNCTIONING UNDER THE CONDITIONS OF A DISTORTED MARKET ECONOMY

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Abstract
Understanding market concentration and its ramifications is one of the most important components of analyzing and evaluating competition challenges, and this is garnering greater attention in the sustainability research of businesses. This study's objective is to analyze the viability of evaluating the HHI in the implementation of company strategy in order to prevent market distortions. In this work, a literature review and analysis are used to assess the importance of market definition in establishing the concentration of a market economy, respectively Game theory, tested to find the optimal bargaining positions of market participants under the influence of the forces of a distorted market economy. The contribution of this study is the compilation of the HHI evaluation system, which aims to determine the market conditions of corporate entities and facilitate the achievement of long-term market competitiveness. A comparison of probability theories demonstrates that the market's HHI-based performance can be measured. It is more adaptive to the organization's actual method of decision-making. The operation of firms in markets with the least amount of distortion can be crucial for boosting competitiveness not only at the national level, but also at the global level, especially through enhancing reputation, decreasing costs, responding to market demands, and adapting to market expectations. The findings will be useful for policymakers entrusted with controlling market inefficiencies and encouraging sustainable economic projects.

Keywords: *competition, distorted market economy, HHI index, evaluation of concentration, market merger model.*

Introduction

This work has a social and economic impact as a result of its intention to create opportunities for commercial organizations to operate in a distorted market environment. Therefore, the partners and customers of these businesses receive a product or service that is economically beneficial. This work investigates the definition and evaluation of the market. For a preliminary evaluation of the extent of competition on a given market, competition agencies rely on an imperfect indication of market concentration. Due to the uncertain relationship between market structure and competition intensity in a given market, this is done with caution. Similarly, it would likely be impracticable to evaluate changes in the competitiveness of a sector or the economy as a whole in order to ascertain the true intensity of competition. This can be shown by studying the reference point in terms of market concentration data or industrial concentration data. However, if market concentration is an inconsistent measure of competition intensity, it is even less apparent what industry concentration can tell us about competition intensity inside a specific industry. To accurately define the processes, occurrences, and issues associated with business competitiveness, an examination of the market idea is conducted.

This study’s objective is to analyze the viability of evaluating the HHI in the implementation of company strategy in order to prevent market distortions. It is difficult for businesses operating in a market with distorted competition to achieve a balance of competitive forces. This adds to the difficulty of measuring the market concentration of business entities and stakeholders, as well as modeling and supporting strategic business decisions. This condition necessitates the development of novel modeling techniques to achieve a balance of market power and a deeper comprehension of the competitive environment. In addition, there is no universal market notion, therefore the factors that determine competitiveness in a distorted market are considered differently. The market concept is one of the most essential instruments for investigating and evaluating competition issues in order to balance corporate competitiveness. Thus, market concept, including the calculation of market shares and the measurement of concentration, is not an end in itself, but a very important tool for determining the strength of restrictions on competition, faced by the company, and assessing the creation or strengthening of market power as well as the chances and probabilities of potential anticompetitive effects. Other companies' goods and services, as well as several regional factors, limit competition.

Consequently, the relevant market needs must be specified in terms of product and geographic dimensions; market shares and concentration measures are trustworthy indicators of market power, and it is evident that the market must be characterized in this manner. In this work, a literature review and analysis are used to assess the importance of market definition in establishing the concentration of a market economy, respectively Game theory, tested to find the optimal bargaining positions of market participants under the influence of the forces of a distorted market economy.

Aspects of competitive evaluation in the market power system

It is stated that trade liberalization (in this example, the opening of product markets) is mutually beneficial and is contingent on the efficient interaction of various markets. If product markets are not competitive or if market signals do not effectively represent social costs and benefits (i.e., external outcomes), then the positive effect of openness may be little or nonexistent. In other instances, governmental solutions are required to solve these deficiencies, as an open competitive environment is frequently insufficient. In reality, under certain conditions, openness might exacerbate inefficiencies at the external activity or market segment in question (OECD, 2012; Ghosal and Tonin, 2018).

Existence of exclusive rights to manufacture or provide services indicates monopoly. It is frequently referred to as a natural monopoly. Long-term exclusive rights should promote considerable investments in infrastructure, the development of which would be unlikely in the absence of a guaranteed market. However, occasionally exclusive rights are employed in situations where a natural monopoly would not exist. In many circumstances, exclusive rights are one of the primary ways to market. Exclusive rights may permit monopolistic pricing and other instruments of market dominance. It is not possible to avert this predicament with regulatory measures alone, as they have a very poor success record in preventing market power abuse and protecting customers (OECD, 2016).

Access to the market is restricted by the applicable activity permits and authorizations. Qualification requirements may include minimum experience and academic levels, as well as requirements for a good reputation. In the pursuit of formal obligations within a firm or board, several aptitude tests are commonplace in the subject of finance. There may be a fixed number of licenses in some instances (OECD, 2016). Frequently, the standards for a license or permit are more stringent than necessary for consumer protection, which can decrease consumer opportunities and lead to fake shortages and price increases. When licensing structures are frequently founded on consumer protection purposes, such entrance restrictions shield local producers from competition. It is essential to ensure that license and permit requirements do not impose an undue strain on the situation and help accomplish the appropriate regulatory objectives (OECD, 2016).

Occasionally, rules restrict the movement of commodities, services, capital, and/or labor across international borders (OECD, 2016b). However, these constraints artificially limit the geographical extent of competition in the provision of products and services. This may restrict the number of providers who may engage in talks and allow other suppliers to increase prices using their market power. Potential constraints should be evaluated based on whether there is a clear connection between the constraints and the achievement of specific policy objectives, whether the restrictions are minimally required to achieve the objective, or whether a reasonable analysis indicates that the policy objective will be attained. When restricted limits apply for a limited time with explicit regulatory measures, there is a considerable chance that “temporary” precautions may be viewed as semi-permanent due to supplier lobbying, allowing them to profit from these restrictions (OECD, 2016b).

Due to the small number of providers permitted to engage in the discussions, there is a danger of extreme market dominance and diminished natural competition (OECD, 2016b). Due to diminished competition (or agreements) between the remaining suppliers, the risk of price hikes increases as the number of suppliers diminishes. The consequent decline in competition can limit the propensity to successfully solve consumer issues and can diminish innovation and long-term economic efficiency. Existence of exclusive rights to produce or deliver a service is always accompanied by monopoly. It is frequently referred to as a natural monopoly. It is not possible to totally avoid such scenarios by regulatory measures alone, as practice has shown that such measures have a very poor success rate in preventing the exercise of market power and protecting consumers. It is important to ensure that license and permit requirements do not overcomplicate the situation and help to achieve the desired regulatory goals (OECD, 2016b; Liu *et al.*, 2018; Schlosser, 2017; Kaplow, 2018; Kumar, 2018; Yasui and Haraguchi, 2018; Chen and Tanaka, 2018; Symeonidis, 2018; Uchiyama, 2018; Gamez *et al.*, 2018).

Typically, governments restrict prices in traditional monopoly industries, such as the public sector (OECD, 2016b). This price regulation is advantageous to customers and compensates for their lack of options. However, price regulation is occasionally implemented when a consumer has multiple prospective vendors. When minimum prices are established, providers with lower prices are barred from bargaining and acquiring market share, hence increasing the value for consumers. Similar situation occurs when setting the highest prices; in such instances, the incentives for suppliers to develop and/or produce innovative and/or high-quality items might be greatly diminished (OECD, 2016b). Occasionally, minimum price legislation is a response to intense price competition (OECD, 2016b). In such instances, minimum price regulation is commonly viewed as a means of shielding small suppliers from “unfair” competition. Frequently, the highest pricing requirements are imposed as a result of admission restrictions. The alternative would be to expand market access. Rarely is price regulation the most effective or efficient means of achieving the specified objectives (OECD, 2016b).

Often exist rules that limit suppliers’ ability to advertise or sell goods, in order to limit false or misleading advertising. Occasionally, advertising limits are intended to prevent the promotion of services or goods seen to have a socially negative value or to be overconsumed (OECD, 2016b). In practice, however, advertising and marketing limits are frequently too broad and too restrictive for competition. Advertising and marketing restrictions can be especially difficult for potential market players because they limit their capacity to inform prospective clients about their presence on the market and the nature and quality of the goods and services being supplied. Almost usually, consumer protection laws prohibit misleading and deceptive advertising (OECD, 2016b). This increases market efficiency and, in most situations, prevents the imposition of additional advertising restrictions on goods and services. When it is necessary to dissuade overconsumption, information campaigns are an alternative to advertising prohibitions (OECD, 2016b).

Under competition law, collusive agreements in competitive systems are deemed prohibited (OECD, 2015). The purported agreement may also be damaging. The distinctions between clear and implicit collusion and whether the enforcement of competition could be led by an implied agreement are the subject of discussion (OECD, 2015). Oligopolies are prevalent in many economic sectors (OECD, 2015). In these marketplaces, there are relatively few interconnected enterprises that can affect the market price to some degree. Recognizing this obvious dependency, profit-seeking enterprises in oligopolistic marketplaces tend to set pricing and other competitive variables in a manner that encourages rational and predictable behavior from competitors. Long-term interactions between oligopolistic firms can result in the maintenance of competitive prices, which undermines consumer welfare and economic efficiency (OECD, 2015). Cartel rules ban firms from suppressing competition explicitly (OECD, 2015). However, such an agreement may not be required for businesses to successfully coordinate their activity. The agreement can be carried out in a variety of ways, ranging from a well-organized structure to minimal or no communication between the parties (OECD, 2015). While there are legislative procedures to address oligopolistic markets with a clear agreement, it is currently being studied whether special measures are necessary and how to deal with oligopolistic markets in the absence of evidence of competitiveness-reducing behavior.

In this instance, there is a possibility that anticompetitive behavior will go unnoticed, and conversely, too aggressive action can kill competitive behavior (OECD, 2015). Cartel statutes document unequivocally that companies have reached an agreement

(OECD, 2015). In certain cases, there are additional specialized instruments for defining an implied agreement. However, these technologies operate in various economic and legal situations, making it impossible to generalize about their value. In substance, the legal phrase “agreement” or “coordinated acts” is fairly broad and may encompass parallel conduct (OECD, 2015). In practice, proof of coordination involves evidence of ties between suspected mergers, among other things. According to some experts, the approach to agreements can be too formal and reliant on communication. Certain jurisdictions acknowledge the “collective” or "common" concept of dominance. In theory, these requirements might be used to prohibit group exploitation that enables them to keep outcomes silently hidden (OECD, 2015).

In some jurisdictions, authorities of competition may, under specific situations, require coordination between enterprises in cases of parallel price hikes (OECD, 2015). This presumption of the agreement aims to decrease the burden of proof on the competition authority. This assessment takes into account such things as the characteristics of the goods or services, the impact of the applicable activities, and the frequency and manner of contact between enterprises (OECD, 2015). Alternative options include regulation for specifically simplified behaviors, such as disclosure of price information to competitors, or circumstances of concentrated market structure (OECD, 2015). Discussions demonstrate that the defense of competition is also crucial in oligopolistic marketplaces where, for example, policy can limit the number of competitors or alter their incentives. Market research helps to examine competitiveness in oligopolistic markets. They can provide important insights or evidence for further action. In some jurisdictions, public authorities have the capacity to conduct market research and utilize the means of rights defence if they have a harmful influence on competition. Market research is a useful complementary tool and does not change competition law enforcement (OECD, 2015). Competition authorities perform market studies where there are concerns that the market or sector may not function correctly for a range of reasons, including market structure, behavior or information. Market research can be useful for existing oligopolistic markets. One Competition Authority may see the damage if there is a presumption that the companies conduct coordinated behavior.

Merger control provides a potential predictable solution on implied agreements (OECD, 2015). Competition authorities can correct or prohibit mergers that could facilitate market coordination. However, few mergers are contested on the basis of the results of the coordinated impact assessment. Indeed, mergers can lead to coordinated behavior and have a significant impact on prices and consumer welfare (OECD, 2015). Merger control is a priority tool to combat with implicit coordination in oligopolistic markets. There are several reasons why agencies can give priority to merger control, as this is a key tool focused on the supposed interpretation of a collusive outcome. However, merger control does not solve all competition problems in oligopolies. For example, companies may be implicitly bound by mutual agreements and obligations even in the absence of a merger. On the other hand, not all mergers can be reviewed under the laws of jurisdiction. In addition, coordinated effects, results can be hard to prove (OECD, 2015).

Factors used to assess whether the market favors coordination include market concentration, uniformity of products, market transparency and coordination history. These factors may sometimes produce different results and are difficult to weigh. The assessment of the impact of the merger on coordination is based on the same factors. For example, coordination can be easier in a market with fewer businesses. When a merger implies that it will be strongly coordinated, for example due to the emergence of new economic incentives, the merger may increase the likelihood of coordination between companies (OECD, 2015).

Various merger modeling techniques may be used to compare the benefits of collaboration in pre- and post-merger analysis of results (OECD, 2015). These methods enable to measure the extent of potential incentive to collaborate, but do not prove that companies have actually cooperated. It is claimed that models and quantitative evidence used in predicting coordinated effects in mergers are not more complicated than those used for unilateral impact analysis, and are not stricter in terms of data requirements. However, in case of coordinated exposure scenarios, merger modeling may not give any clear indication of price increases expected after the merger (OECD, 2015).

In the event of unilateral impacts, scientific discussions indicate that quantitative modeling should be utilized as an additional or independent analysis (OECD, 2015). For instance, competition authorities could rely on comparable documents written for certain business conditions, which would indicate that businesses are attempting to coordinate. The competition authorities may also depend on theories of consistent harm based on reliable, but not necessarily intricate, models. Limiting the number of negotiators increases the possibility of exceptional market dominance and reduces natural competition. Due to diminished competition (or agreements) between suppliers, the risk of price hikes increases when the number of providers drops. Due to the consequent decline in competition, suppliers' capacity to effectively address consumer issues and innovation and long-term economic efficiency may suffer (OECD, 2016).

Numerous nations have legislation that permit competition authorities to combat abusive price discrimination and techniques that make this possible (OECD, 2016b). Since market power is the opportunity to raise prices beyond the marginal cost, which may be obtained, strengthened, preserved, and utilized, it is a sort of one-sided behavior. Abusive pricing discrimination occurs when a business or group of businesses with substantial market power sets prices to maximize their profits (OECD, 2016b). This does not diminish market dominance and leads to monopolization. However, there are inappropriate activities (or "distribution methods") that can assist a dominating corporation in altering the cost (s) of profit increase. Here, actions are planned based on price discrimination strategies, which allow corporations to enhance their markups while simultaneously increasing their market dominance and therefore creating a "more powerful monopoly" (OECD, 2016b). What is the scope of these strategies? They may include efforts to prevent arbitrage or collective purchasing, as well as the collection and analysis of data on the willingness of individual consumers to pay for products (OECD, 2016b). These efforts may be utilized by the business to improve market share, average revenue, and market dominance. If this exploitation (which may or may not be bolstered by the division strategy) occurs in the upstream market, there is a risk of competitive distortion.

The majority of governments base their unilateral enforcement of market regulations on the principles of consumer protection. At least in dominant firms, price discrimination can lead to a redistribution of consumer surpluses from consumers to shareholders, which will disadvantage consumers in the short term (OECD, 2016b). Dynamic incentives for corporations to grow profits are not always in the best interest of customers. There may also be "gaps" when firms create market power through anticompetitive mergers or behavior adopted through loopholes in regulations (OECD, 2016b). It seems conceivable that reasonable customers will be able to defend themselves against price discrimination by corporations. Companies with such market power may be concerned that consumers with a bias in their behavior may wish to pay more for the product than they are willing to pay (artificially moving the demand curve to the outside), and that market power can enhance this risk (OECD, 2016b). There is a presumption that markets can enhance and regulate self-regulation. In this instance, the duration of consumer harm may exceed a brief period. For instance, even if entry barriers are minimal, the monopolist may be able to continue charging the applicable pricing for as long as it takes other enterprises to establish themselves as competitors. There may be a detrimental effect on consumer supply when buyer intermediaries engage in exploitative price discrimination. End-users of an unfair middleman, for instance, will certainly pay higher rates if the broker is discriminated against at the end-user level (even if it's a relatively minor portion of the final price) (OECD, 2016b).

A particular set of scientist-economists asserts that finite resources are successfully dispersed through market exchanges – when individuals' decisions reflect their ideals and businesses prioritize profit maximization. Efficiency in this sense necessitates that individual buyers and sellers are unable to affect the market price at which they transact. Additionally, there must be marketplaces for all items. If these conditions are met, it is suggested, markets will be competitive and comprehensive, and this will be an efficient use of resources (OECD, 2012). Rarely are these prerequisites satisfied. Here are a few examples of deplorable situations (OECD, 2012): Some businesses are able to set their own prices because there are too few competitors or because the things they offer are branded, allowing them to do so. If businesses operate in secret, they can also affect prices; information flows may be biased. Asymmetric knowledge between buyers and sellers, for instance, might dramatically restrict market transactions; consumption is sometimes viewed solely through the lens of the consumer. Others may also have advantages. This situation may have positive externalities. In contrast, the corporation cannot evaluate its production expenses in isolation; environmental damage caused by industry must also be considered. In this instance, there is a negative external impact, as the cost to society of manufacturing this goods exceeds private expenditure. Even if there is no market failure, the economy can distribute income in some way. This is frequently the result of unequal economic distribution and unequal opportunities. Policies aiming at reallocating assets and promoting equal opportunities (such as education, health care, etc.) can assist in achieving a socially acceptable allocation of assets without major market and incentive distortions. The market failure conditions listed above are required (but not sufficient) conditions for government intervention. However, it is essential to examine the relationship between public activities and good policymaking and production and commerce (OECD, 2012).

When considering competitiveness policy, just a few aspects should be emphasized. First, greater resource allocation efficiency is the metric by which trade, competition, and environmental policies are evaluated for coherence. The objective of trade liberalization is to distribute resources to the most productive markets and target them for the most efficient use. This occurs when nations specialize in the production of commodities and services for which they enjoy comparable competitive advantages. The primary purpose of competition policy is to restrict market operations of businesses. A company’s aim to maximize profits might build barriers between alternative costs and customer pricing. The objective of the optimal allocation of environmental resources is to guarantee that people value these resources appropriately and do not hoard them. Therefore, the coherence of trade, environmental, and competition policies must be evaluated based on their contribution to resource allocation and efficiency utilization.

The worldwide aspect of competition and environmental policy is also crucial. In the event of cross-border mergers, for instance, disparities in competition regulation frameworks and principles may lead to conflicts. Evaluation of various merger situations can provide varying outcomes. International collaboration amongst competition authorities is required for the expansion of international, global trade.

When the nature of the competition problem is global, such as in cases of multinational cartels where prices are set to effect consumers on national markets, international collaboration is also required. When environmental repercussions are global rather than national, international cooperation is the most efficient means of problem management. International compatibility is also required to prevent disputes between various international legal systems, such as multilateral environmental agreements and multilateral commerce regulations.

Thirdly, the whole is greater than the sum of its parts. Individually, trade, environmental, and competition policies increase resource efficiency. However, the policy in each area is less effective than other policy approaches. If domestic law permits anticompetitive conduct by domestic enterprises, the nation will not get the benefits of maximum open commerce. There is no convincing evidence that a nation with the most stringent competition regulations is giving up significant structural and dynamic competitive advantages. Public action is not a panacea for all disasters, despite the emphasis on optimal policies that complement openness to commerce. Although a company’s market dominance is generally undesirable in the marketplace, it may be the only feasible outcome given consumer preferences or technology constraints. Mergers, for instance, can result in economic benefits through economies of scale and the sharing of know-how, as well as an increase in the market power of the merged organization. Such substances can be regulated and prohibited by regulators. Compliance with rules necessitates the establishment of suitable expenditures, including the preparation of regulations. In order to monitor and implement environmental regulations, it is required to expend and utilize a number of resources. When considering whether or not to intervene in external causes, the costs of government action must be taken into account. While a more open economy improves competition, it does not necessarily limit the chances for domestic and foreign firms to engage in anticompetitive behavior. In fact, internal competitiveness may even intensify in some instances. Alternatively, foreign enterprises attempting to enter a market may engage in anticompetitive conduct. In any situation, it is obligatory to create and implement an effective competition policy. Given the competition problems that do not fall under the jurisdiction of the domestic authority alone, further measures are required. Problems involving worldwide competition increasingly necessitate international solutions. The scope of such determinations, which includes whether or not they must be legally binding, is quite vast. Over the past decade, the interplay and relationship between competitiveness and trade policy have received considerable attention. There are good grounds for this, particularly when both policies are viewed as having the same purpose of generating and fostering active and competitive markets. The objective of trade policy is to eliminate tariff and non-tariff barriers imposed by governments. On the other side, competition policy seeks to prohibit behaviors between corporations and their groupings, thereby creating competition barriers (OECD, 2012).

Typical market research techniques examine the number and size of businesses. The more companies in an industry, the more competitive it is. In the early 1980s, this perspective shifted, resulting in a more nuanced view of industrial organizations. To accommodate new insights into corporate behavior, instruments drawn from game theory have been created. Instead of focusing on the quantity and size of industries, emphasis has been placed on their behavior, specifically market entrance hurdles. To further comprehend market entrance hurdles, a monopoly case study is initiated. If there is just one company in an industry, it will limit output and raise prices in order to maximize profits. This company’s substantial revenues motivate competitors to enter the industry. Under the assumption that they can enter the industry, the incumbent monopolist would be compelled to alter its pricing and production practices. If the new entrant has compelling justifications to enter the business, it may be legitimate to expect the incumbent monopolist to alter its commercial practices as a matter of urgency. This signal’s dependability is greatly dependent on the level of market entry barriers; the lower the barriers, the greater the chance for new entrants to enter the market. In contrast, the greater the entrance barriers, the fewer the chances (OECD, 2012).

There are two entry hurdles that can be overcome: regulatory and structural barriers. Regulatory barriers are frequently associated with government regulations that restrict or control industry access. This includes the need to seek permissions or licenses in order to engage in a given market. In some instances, authorization may be granted, but the associated fees may be prohibitive. Measures that restrict or prohibit imports, such as tariffs or quantitative restrictions, are other instances of regulatory obstacles to competition. Not all entry obstacles are imposed by governments. Frequently, impediments might also be structural in nature. For instance, a specific industry can make the required investment in a business. In such a scenario, the fees incurred can result in a loss if the exit to a new country is particularly onerous, hence increasing the danger of arrival. Similarly, a large set entrance cost can discourage participation. Scale economies and network effects are two more potential structural impediments. As regards structural obstacles to market entry, there are also instances in which only one company in the market can function efficiently due to structural impediments. Such natural monopolies are prevalent in businesses requiring large-scale investment, such as distribution networks, electricity generating, etc. In such circumstances, political policies cannot facilitate market entry, as doing so would be absurd. Instead, the behavior of natural monopolists must be regulated so as to strike a balance between the public interest in acquiring a product on the market and their own commercial interests (OECD, 2012). There may be additional obstacles to entry associated with the incumbent operator’s response to the introduction of a new competitor. Even if the regulatory and structural impediments were small, the current corporation may take advantage of its potential to restrict competition. Pricing policies, for example, can be both aggressive and malignant (OECD, 2012).

Effective competition policy is a crucial foundation for a productive economy. There is no unifying strategy to competition policy at present. Different nations employ distinct strategies. In certain nations, mergers, reviews of merger procedures, dominance evaluations of firms or groups of corporations, and anti-competitive practices are governed by extensive legislation, but in others, basic pricing legislation is applied. Competition policy should be viewed as encompassing not only antitrust regulation, but also other competition policies that affect market structure, business unit conduct, and economic activity (OECD, 2012).

On occasion, it is suggested that the goals of competition policy can be attained, at least in part, through open trade and investment policies. A small, open economy, for instance, can foster the growth of competition by allowing foreign providers to operate in its marketplaces. It is probable that an open investment strategy will diminish the capacity of national businesses to control markets and gain monopoly prices. The notion that free trade and investment policies can alter competition policy rests on the premise that external factors will abolish anticompetitive market structures. This is not necessarily always the case.

Increasing market openness is not always able to increase competitiveness between enterprises; in fact, the opposite outcome is possible in certain situations. Therefore, competition policy plays a crucial role. Some industries have lower levels of competition than others. Due to the large immediate costs of industries such as electricity and water delivery, it is difficult to intervene in such a market, and it is improbable that the market can develop competitive structures with or without foreign participation. In such instances, competition regulation is crucial (OECD, 2012). When purchasers have access to several suppliers, they and the economy as a whole will benefit (OECD, 2004). Their power to select stimulates competition between businesses. Competition between businesses leads to higher productivity and economic growth, which is advantageous for both consumers and businesses. Moreover, sectors with higher levels of rivalry see greater productivity increases. The influence of increasing competition in a given area may also be felt in other industries. For instance, there may be productivity increases in the service sector and a growth in employment, and this can have a far larger impact on the economy as a whole (OECD, 2004). The primary reason is that competition stimulates more effective deployment of finances, allowing more efficient firms to enter the market and take market share from less efficient firms. Therefore, rules and anti-competitive conduct that impede market access and development can be especially detrimental to economic growth.

Additionally, competition increases the productivity of productive businesses because competitive businesses are better managed (OECD, 2004). Additionally, competition fosters creativity. Unlike monopolies, companies encounter competition and innovate more frequently (OECD, 2004). However, such corporations can also establish a patent monopoly. The most inventive markets are those with moderate competition, as innovation is weaker in monopolistic and highly competitive markets. As competition policy focuses on boosting the competitiveness of inadequately competitive markets and introducing or strengthening competition in places where it is not yet present, innovation is still a major driver of competition policy (OECD, 2004).

Existence of exclusive rights to produce or supply services constitutes monopoly, often known as a natural monopoly. Long-term exclusive rights should promote large investment in infrastructure, which would be improbable in the absence of a guaranteed market. In instances when there is no natural monopoly, however, exclusive rights may also be granted. Exclusive rights are, in many respects, one of the key means to enter the market. Exclusive rights can give rise to monopoly pricing and other concerns linked to the use of market power. This cannot be totally avoided by regulatory measures alone, as these efforts typically reach a very low success rate by limiting the use of power on the market, so safeguarding consumers.

A limited number of supplier markets lead to the risk of generating exceptional market strength and less natural competition. As the number of providers diminishes, the lessened competition (or agreements) amongst the remaining suppliers raises the risk that price will increase. Due to the consequent decline in competition, providers may be less able to effectively address consumer issues and creative and long-term economic efficiency may suffer.

Licenses or authorizations shall restrict access to the market. Qualification requirements may include minimal levels of experience / education and may include requirements of good repute. In the pursuit of formal obligations inside a firm or on a board, it is typical in the field of finance to administer a number of aptitude tests. In some circumstances, a number of licenses may be fixed. Frequently, license or permit requirements are more stringent than necessary for consumer protection, which can unduly limit consumer options and generate artificial faults that drive up prices. Licensing schemes are frequently based on consumer protection goals, and entry obstacles are frequently designed to protect local manufacturers from competition. It is essential to ensure that license and permit requirements do not complicate the issue beyond what is necessary and contribute to the achievement of the appropriate regulatory goals.

There are two barriers to entry: regulatory and structural impediments. Regulated barriers are generally tied to government initiatives to restrict or control access to industry. This includes the need to seek permissions or licenses in order to engage in a given market. In some situations, authorization may be allowed, but such expenses may be prohibitive. Other examples of regulatory barriers to competition are policies that reduce or prohibit imports, such as tariffs or quantitative restrictions. Not all entry obstacles are imposed by governments. Frequently, impediments might also be structural in nature. For instance, a specific industry can make the required investment in a business. In such a scenario, the fees incurred can result in a loss if the exit to a new country is particularly onerous, hence increasing the danger of arrival. Similarly, there is a large set entry cost, which can discourage entry. Other potential structural impediments include economies of scale and network effects. There are instances in which structural obstacles to market entrance are such that only one company in the market may operate efficiently. Such natural monopolies are prevalent in businesses requiring large-scale investment, such as distribution networks, electricity generating, etc. In such circumstances, political policies cannot facilitate market entry, as doing so would be absurd. Instead, the behavior of natural monopolists must be regulated so as to strike a balance between the public interest in acquiring a product on the market and their own commercial interests (OECD, 2012).

An successful competition policy is a crucial foundation for a productive economy. There is no unifying strategy to competition policy at present. Different nations employ distinct strategies. In certain nations, mergers, reviews of merger procedures, dominance evaluations of firms or groups of corporations, and anti-competitive practices are governed by extensive legislation, while in others, simple pricing regulation is enacted. Competition policy should be viewed as embracing not only antitrust policy, but also other competition policies that have an effect on market structure, business unit conduct, and economic activity.

In some instances, the scientific literature asserts that the goals of competition policy can be attained, at least in part, by open trade and investment policies. The notion that free trade and investment policies can alter competition policy rests on the assumption that external factors will abolish anticompetitive market structures. This is not necessarily always the case. Increasing market openness is not always able to increase competitiveness between enterprises; in fact, the opposite is possible in certain cases. Therefore, competition policy plays a crucial role.

The search for balance and equilibrium of negotiating powers under distorted market competition

Business agreements face increased difficulties as a result of distorted market competitiveness. It changes the balance of negotiating powers between the parties involved. Such circumstances frequently result in bad outcomes for both buyers and sellers. Consequently, it creates additional opportunities for international business as a result of the emergence of other market participants in the relevant markets, which can provide additional alternatives for both buyers and sellers by reducing the negative impact on competition distortion and balancing the negotiating powers of the negotiating parties (Ewa Kiryluk-Dryjska, 2016; Jeanne Brett, Leigh Thompson, 2016; Magorzata Przybya-Kasperek, Alicja Wakulicz-Deja, 2016). For the effective use of the potential of business negotiations – the negotiating power – it is essential to develop and implement an effective international business negotiation strategy, as well as to assess the negotiating powers of the parties involved and the essential components of their deviation from balance. When resolving the scientific problem, it is vital to ensure that the answers help to consider the balance of negotiating power among participants, allowing them to reach the balance and ensuring the most effective formulation and implementation of their negotiation strategy.

A increased number of vendors and providers provides the buyer with a greater selection of options and alternatives. In this situation, the buyer can benefit from competitive tension. However, the situation is entirely different when there is no competitive tension. One of the causes for the absence of competitive tension in the market is that there are insufficient providers to produce a free and open competition, as in the case of a monopoly. Therefore, market distortion might be defined as the absence of free and open competition. Free competition indicates that market participants are competing against one another rather than combining to form and maintain a cartel. Open competition denotes that market entry barriers are sufficiently low, hence reducing the profits of established competitors, as new entrants would otherwise attempt to sell at lower margins, which would be primarily beneficial for customers and so secure their sales.

There are two sorts of buyer power: market-based power (monopsony, oligopoly, monopoly) and bargaining power. If the buyer is able to drop the price below the level of market competition among suppliers, he has monopsony power. The bargaining strength exhibited by the buyer during communication and negotiations with suppliers determines their negotiating power. Monopsony power makes it easier to obtain a cheaper price than negotiation power. Only when the provider has market power that can be leveraged with negotiation power is negotiating power used. In each scenario, the effects of utilizing negotiating leverage are substantially different. In monopsony and oligopsony marketplaces, buyer power reduces sales volume and productivity in the supply market, which has a detrimental impact on the consumer market. The buyer’s negotiating leverage is mostly of a compensating character. It might enhance the market situation on the consumer market by increasing the volume of production on the supply market.

The significance of the study and the quality of the research. This study’s significance has both theoretical and practical dimensions. The theoretical relevance relates to the evaluation and development of negotiating power among participants in international business negotiations, as well as the scientific search for measures to ensure their effectiveness and the creation of a scientifically-based, sustainable and effective negotiation power balancing system. Such a technology could increase the productivity of bargaining teams in distorted markets. The practical relevance relates to the challenges of organising business, the increasing purposefulness of recent developments, which manifests in an increasing number of alternative business solutions and the need to seek out new business partners, resulting in greater expediency of business transactions, their efficiency, and, ultimately, an increase in the competitiveness of business entities in the international business environment. Thus, the theoretical and practical significance of this research can be summed up by the necessity to identify and develop a scientific basis for measures used to balance the negotiating forces of commercial negotiation players. They should contribute to an objective evaluation of the negotiating powers and relationships between international business negotiation participants and their competitors, establishing and utilizing the negotiating powers of the negotiating team strategically and successfully. Taking into account the variables that distort market competition, these steps should ensure the successful formulation and implementation of an effective business negotiation strategy in the context of international business development and boost its competitiveness.

A number of scientists have emphasized the need of seeking for alternate means of enhancing bargaining power: Mažeikienė et al. (2010); Mažeikienė, Peleckis (2012, 2010, 2009); Charles Antaki, Alexandra Kent (2015); Andrea Petriwskyj *et al.* (2015); Claude Alavoine, Caroline Estieu (2015); Kiryluk-Dryjska (2016); Brett, Thompson (2016); Przybyła-Kasperek, Wakulicz-Deja (2016); Schaerer et al. (2016); Peleckis (2016); Ghavami *et al.* (2016); Rufo *et al.* (2016); Jager *et al.* (2017).

The following scientists have investigated distorted market rivalry and its circumstances: Dassiou, Glycopantis (2008); OECD (2008); Jordan D, Matsudaira (2014); Leif Danziger (2010); Alessandro Bonanno, Rigoberto A. Lopez (2012); Eric Strobl, Frank Walsh (2007); Tavis Barr, Udayan Roy (2008); Julio J. Rotemberg (2008); Timothy J. Brennan (2011); Strobl, Walsh (2016); cases of monopoly – Leonard J. Mirman *et al.* (2014); Paul (2017).

Monopsony power is the opposite of monopoly power: it is the buyer’s market power as opposed to the seller’s market power (Dassiou, Glycopantis 2008; Matsudaira 2014; Danziger 2010; OECD 2008; Bonanno, Lopez 2012; Strobl, Walsh 2007; Barr, Roy

2008; Rotemberg 2008; Brennan 2011; Strobl, Walsh 2016). Monopsony power is both directly and indirectly determinable. In circumstances of the former, it is decided by comparing the buyer's price to the competitive market price. The level of the prevalent market prices, as established by competing businesses, does not correspond to the actual purchase price. In contrast, the indirect monopsony power evaluation technique incorporates market, market segmentation, entry obstacles, and other pertinent characteristics.

Purchasing firms' ability to influence trade interactions with sellers and suppliers is indicative of their buyer power. The buyer's power can show itself through both monopsony power and negotiation power. The distinction between these two types of buyer power derives from the structure of their sources and the totality of the measures.

A business is deemed to have monopsony powers when its market share of purchases is reasonably high and it has the ability to set prices based on sales volumes. The variances in the use of negotiation power are reflected in the discounts gained. The buyer's negotiation power indicates his bargaining strength in relation to the seller. Both sorts of buyer power facilitate the lowering of sales prices. In the case of monopoly power, this can be accomplished by highlighting smaller purchase volumes when negotiating with the intent to purchase less (Brennan 2011; Strobl, Walsh 2016). In the event of bargaining power, the seller still operates at a competitive level, however in the case of monopsony power, prices are reduced below the competitive level (OECD 2008; Bonanno, Lopez 2012; Strobl, Walsh 2016). Assuming there is no price discrimination, monopoly and oligopoly lead to market distortions. Generally speaking, this is detrimental to both direct sellers and suppliers, as well as additional parts in the supply chain (Matsudaira 2014; Danziger 2010; OECD 2008).

Monopsony power supply on the market distributes profits from the supplier to the consumer. Companies having monopsony power behave as if they have higher marginal costs than businesses that do not have monopsony power. This ultimately results in a higher price for the end customer, even though the costs are smaller. Having market dominance in the supply market as well, monopolists cause considerably more harm than they would if they did not.

Customers who use their negotiation strength as a compensatory factor (for instance, when their negotiating power totally or partially compensates the market power of sellers) may raise the volume of output in the market and benefit the final consumers. The amount to which customers can leverage their negotiating position relies on the form of contracts with suppliers and the degree of competition on the consumer market. Increased consumer competition and their scope result in this negotiating strength securing higher wholesale price savings and providing consumers greater benefits (OECD 2008; Bonanno, Lopez, 2012; Strobl, Walsh, 2007).

Monopsony power in practice can be established by the number of options available to sellers, which in turn determines the buyers' monopsony power. If it is simple to discover alternative purchasers, then their monopoly strength is limited. Other vendors may be located in other geographic regions, engage in different activities, and have distinct market requirements, yet their items may still be able to meet the same demands. Also, when searching for new markets, it is important to identify the presence of monopsony power in smaller geographic areas with a smaller number of products, where a hypothetical monopsonist could influence a price decrease in that territory (Antaki & Kent, 2015; Petriwskyj *et al.*, 2015; Alavoine & Przybya-Kasperek, 2016; Schaerer et al., 2016; Ghavami & Rufo).

When the number of buyers and sellers is minimal, buyers and sellers may negotiate (according to their respective skills) over any potential extra profit. The distribution of extra profit depends on the relative strength of the parties involved. This profit surplus is the purpose of the buyers and sellers, which motivates them to reach an agreement without exploring other options. The more efficient buyers are in negotiations, the more options they have, resulting in the sellers having fewer options and receiving a higher share of the surplus profit. The profitability of deals for purchasers is contingent on their ability and willingness to seek out alternative suppliers. Similarly, sellers' transactional profits are contingent on their capacity and willingness to seek out additional buyers. The fact that purchasers can readily switch suppliers without incurring considerable additional costs (buyers operate as middlemen in the consumer market) is the most important aspect affecting their negotiating strength and demonstrating that they have more options than sellers (Matsudaira, 2014; Danziger, 2010; OECD, 2008; Bonanno, Lopez, 2012; Rotemberg, 2008; Brennan, 2011; Strobl, Walsh, 2016).

Monopsony power is affected by the model of the present suppliers. Ricardian, quasi, and monopoly market models exist for suppliers (Matsudaira, 2014; Danziger, 2010; OECD, 2008; Bonanno, Lopez, 2012; Strobl, Walsh, 2007; Barr, Roy, 2008; Rotemberg, 2008; Brennan, 2011; Strobl, Walsh, 2016).

The Ricardian model refers to vendors who offer differentiated raw material supplies. In this instance, the monopsony power depends on the supply’s adaptability. More flexibility offers more opportunities to exercise monopoly power, which causes production output interruptions on the supply market and is detrimental to end consumers. On the supply market, firms with monopoly power tend to behave as if they incur more expenses than firms without monopoly power. Monopsony in the supply market hurts both supplier and consumer productivity. Possessing monopsony powers necessitates determining whether your seller has a viable alternative; this is what determines monopsony power. Monopsony power is diminished if the seller can easily locate other purchasers in the local market or in other regions, or customers who would utilize these products as substitutes.

The Quasi model refers to the gap between total revenues and short-term expenditures. This may be used temporarily by a monopsonist. Any attempt to leverage suppliers’ circumstances could discourage them from concluding an agreement over the long term, as they would not be able to recoup their investments. If suppliers’ market engages in fair competition, monopsonists will be unable to maintain their monopoly power over the long run.

In the case of the Monopoly model, providers and purchasers will be more likely to cooperate in order to maximize the total profit for both parties, as opposed to refusing to do so. In the case of the Monopoly model, the formation of compensatory power may result in lower pricing for end customers. In the event that one of the parties withdraws, however, the transaction may fail. This would urge the buyer to investigate alternative markets.

Oligopsony of purchasers. Frequently, oligopoly among buyers and a high amount of supply result in Nash equilibrium. In instances of Nash equilibrium in procurement, all purchasers determine the value of their goods based on the values determined by all purchasers. The Nash equilibrium will allow for the exploitation of buyers' market power, which will depend on the product's threshold price, the number of competing buyers, and the supply's flexibility (Dassiou, Glycopantis, 2008; Matsudaira, 2014; Danziger, 2010).

Cartel monopsonists. Oligopsonic Nash equilibrium does not optimize customer profits, necessitating the need to coordinate purchases by using collective market power, hence raising profits, decreasing purchasing and selling prices, and maximizing customer profits (OECD, 2008; Bonanno, Lopez, 2012).

Refusal to complete the transaction. Monopsonists can threaten to reject their transactions in order to obtain more favorable terms. For instance, suggesting to get a larger number of items for a price that corresponds to a much lower amount. In such cases, suppliers only reimburse their manufacturing costs, guaranteeing that their capacity is utilized (Strobl, Walsh, 2007; Barr, Roy, 2008; Rotemberg, 2008; Brennan, 2011; Strobl, Walsh, 2016).

In cases of monopsony and oligopsony, we analyzed a variety of market competitive distortions. Utilizing the potential presented by international business talks, we also outlined techniques for minimizing or eliminating their negative impact. It would be useful to investigate the monopoly power of suppliers, methods for identifying and evaluating them, and the tools to shift the balance of power in favor of the buyer.

Purchasing procedures of numerous commercial entities stipulate that at least three parties must submit bids for a procurement. This supposition implies that a greater number of vendors permits a wider range of solutions. In this instance, the buyer utilizes the competitive pressure. However, the absence of competitive tension drastically alters the circumstance. One of the causes for the absence of competitive tension in the market is that there are not enough suppliers to create a free and open competition, as in a monopoly. Therefore, market distortion might be defined as the absence of free and open competition. Free competition indicates that market participants are competing against one another rather than combining to form and maintain a cartel. Open competition denotes that market entry barriers are sufficiently low, hence reducing the profits of established businesses, as new competitors would otherwise attempt to sell at lower margins, which would be beneficial for customers and thus ensure their sales (Mumuni *et al.*, 2016; Lai *et al.*, 2016; Shin, 2017).

We will now analyze the causes of various market distortions, including market structure, market concentration, and market competitiveness.

Market architecture. How many market players are required to maintain fair and open competition? Frequently, the number “three” is referenced in business procurement regulations. However, the presence of three vendors does not necessarily ensure competition. Monopoly refers to a circumstance in which there is only one provider on the market; nevertheless, there are other factors that may place the buyer in de facto monopoly circumstances (Rogers, 2013; Mendoza, 2016; Matsumoto, Szidarovszky, 2015; Ková, igig, 2017; Shin, 2017):

– restrictions for patents or intellectual property, which limit the ability of other suppliers to offer the same or a similar solution;

– the end user wants a particular supplier (with agents), thus limiting the freedom of choice;

– other solutions in the market are technically unacceptable for business;

– the costs of the supplier change are too high, making it impossible to change the supplier, as the costs would never pay back, forcing the buyer to stay with the current supplier;

– the costs of the supplier change are too high, making

The concentration of the market. The idea that there are just three vendors on the market may conceal the fact that two of them may have divided the market, giving them the ability to set prices. The number of market suppliers is not always the best indicator of the intensity of rivalry among market participants. Examining at least four market participants is necessary for a comprehensive examination of the market’s structure. Oligopoly is characterized by a concentration ratio of four entities if the concentration ratio of these four entities’ market competition is greater than 40 percent (Matsumoto, Szidarovszky, 2015; Rogers, 2013; Ková, 2016; Shin, 2017).

Competition level. In addition to the quantity of suppliers on the market and the structure of the market, the conditions under which suppliers compete with one another are a significant consideration. And these are considerably more difficult to quantify than the quantity of market players or the market structure. Participants in an auction may compete under the buyer's regulations and within the restrictions mutually agreed upon by various suppliers (Lai *et al.*, 2016; Mendoza, 2016; Shin, 2017). Although activities designed to reduce competition are illegal, this does not mean cartels do not exist. Often, the benefits of such agreements far outweigh the prospect of a fine. And finally, it is quite difficult to locate and identify a cartel.

Manifestations of cartel behavior. There are three different forms of cartels (Rogers, 2013; Lai *et al.*, 2016; Mendoza, 2016; Matsumoto, Szidánszky, 2015):

– cartel of fixed prices;

– cartel of market sharing;

– cartel of procurement parties operating in secret.

A further option to a fixed-price cartel could be territory sharing, in which suppliers agree not to submit offers within the territory of another supplier. Therefore, a particular supplier can raise prices knowing that rivals will not make counteroffers (Mumuni *et al.*, 2016; Shin, 2017). Another, even simpler, approach to organize a cartel is to agree not to sell to specified consumers or clients in a given region. Arrangements for market sharing might take various forms. Suppliers may collectively determine the amount of contracts that each can win. Therefore, all suppliers participate in procurements, but it is already known who will sign the contract. Markets with multiple dominant suppliers and dispersed, uncoordinated purchasers frequently experience market sharing (Lai *et al.*, 2016; Mendoza, 2016; Matsumoto, Szidarovszky, 2015).

In such situations, it is difficult to demonstrate that anti-competitive conduct is the result of geographic, logistical, or other market features. In addition, markets may incorporate price ceilings or discount levels. It is easier to deceive buyers who are predictable when making proposals. Here are numerous examples:

– one or more participants refuse to submit proposals in order to help their competitor win;

– suppliers make offers that are not competitive or do not comply with procurement conditions;

– suppliers submit proposals, but participate in an agreed rotation on who will offer the best price, based on who should win the contract.

For instance, the procurement winner changes every two years even though the participants' competitive advantages remain identical.

Making a deal is simpler than breaking one. There may be businesses attempting to eliminate unprofitable consumers in order to concentrate on profitable ones. Even if suppliers raise their rates, it may be impossible for clients to replace them since the replacement costs would outweigh the potential benefits of working with a different provider. Thus, present vendors continue to exploit their lucrative clients (Braido, Shalders, 2015). Regardless of whether the market is distorted or not, suppliers may continue to exploit their clients. In the next section, we will examine potential questions that may indicate whether a client is being exploited (Matsumoto & Szidarovszky, 2015; Ková & igig, 2016; Rogers, 2013):

– Influenced by inflation, do the prices of suppliers increase faster than the price level of the services?

– Did the increase in supplier costs represent an improvement in service quality?

– Are the requirements and/or extra fees greater than those of other suppliers in the same industry?

– Does the company's accounting account for the influence of supplier services on the company's profitability?

– Is there evidence that supplier reps are attempting to influence the decisions of our company's employees?

– Is the vendor attempting to limit our ability to receive these services by imposing limits via the contract terms and specifications?

– Does the supplier exhibit unsuitable conduct during negotiations, such as refusing to offer concessions and striving to maximize profits?

These questions and responses help us determine whether providers exploit clients for their own benefit.

Purchasing procedures frequently mandate competitive pricing and frequently need three quotes. If there are ten possible suppliers in the relevant category, but only three are requested to make proposals, there is a 30% chance that the best provider will not be found. No procurement regulations need ten offers, and procurement specialists will never invite only three suppliers at random, so it is vital to do a thorough market analysis and examine potential suppliers from untapped markets. Even in the event of a monopoly, some new entrants may have recently joined. To find suitable suppliers, one must evaluate the following potential suppliers' sources (Rogers, 2013; Mumuni *et al.*, 2016; Lai *et al.*, 2016; Shin, 2017):

– global catalogues of a specific category of online supply goods;

– consultations with specialists of a specific category of suppliers;

– communication with suppliers of the same category in other countries;

– exhibitions and presentations in other countries;

– market cooperation agencies or consulta.

Increasing a buyer's negotiation leverage by seeking out new suppliers through the expansion of available options. Additionally, having more options implies extending the present market (Antaki, Kent, 2015; Alavoine, Estieu, 2015; Kiryluk-Dryjska, 2016; Brett, Thompson, 2016). This can be accomplished by analyzing comparable or related markets, which may serve as possible supplier markets. Sometimes it is quite tough for other market participants to switch to a different market. Therefore, purchasers seeking potential cheaper suppliers from different markets should consider potential negotiation ideas that would make it simpler to convince potential future partners to work in a new market (Rogers, 2013; Shin, 2017):

– sharing experience, such as by attaching project managers or sharing a portion of the technology during joint meetings;

– subsidizing certain costs of entry, purchasing appropriate measures, or otherwise investing in mutually-beneficial cooperation;

– offering a longer contract;

– gradually increasing the volume of orders and their complexity, thereby allowing the supplier to adapt their own technology to more complex work.

When buyers need their suppliers more than their suppliers need them, they often find themselves in a difficult position. Small clients may contemplate the possibility of a closer relationship with a monopoly business, so strengthening their reliance (Jablanovic, 2013; Willington, Ning, 2014). This is applicable in instances where providers hold a monopoly in certain but not all business areas. These actions can enhance the available bargaining leverage. Obviously, it is vital to avoid circumstances in which a single provider can give an entire suite of services. Therefore, it is essential to divide the required service into parts, allowing customers to choose from a wider range of suppliers without granting exclusive negotiating power to a single provider. Or other versa – if the supplier makes a better offer, it may be a negotiation strategy to offer to sell more to them.

Suppliers' repute. Some monopolistic suppliers maintain a solid grip on their market position, responding harshly to any allegations that they are exploiting the situation for their own gain (Mirman *et al.*, 2014; Braido, Shalders, 2015; Sarafopoulos, 2015). Antitrust laws were enacted in the United States, Europe, Australia, and Lithuania to control markets and prevent the abuse of dominant market positions. For instance, the United States has the Sherman Antitrust Act, whose objective is not to prevent some corporations from obtaining a dominant position in certain industries, but rather to prohibit artificial price increases in both supply and trade. When analyzing the market scenario, negotiators usually address the following (Rogers, 2013):

– Is there proof of improper conduct on the part of the supplier(s)?

– Does the market feature an equilibrium of diverse negotiating positions?

– Do suppliers take advantage of their advantageous position?

– Is it feasible to form an alliance and cooperate with another group of buyers?

Typically, buyers concentrate on business-related factors, whereas sellers concentrate on personal factors and may affect business through specific individuals. This comprises identifying important decision-makers, analyzing their function, opportunity, and position, as well as identifying the appropriate opportunities to influence them and other pertinent procedures. Several significant factors must be considered (Rogers, 2013):

– Is the management structure of the supplier familiar?

– Exist any connections with decision-makers?

– Do we know anyone who has a relationship with the provider, and if not, who should we contact?

– Which details should we provide?

These questions result in a greater comprehension of the supplier and the present state of the business entity.

Suppliers may boost their pricing if they believe that their clients or customers will not be able to obtain the product or service elsewhere. Suppliers are more likely to give better pricing to client groups than to individuals. Obviously, suppliers may also make non-price-based offers. Price is not the only factor that may be negotiated; many others can affect the final outcome. Purchasing managers are frequently merely third- or fourth-level employees inside their firms, allowing them to have an impact through influencing those in higher positions (Mendoza, 2016). Having influence requires involving other project-related people. When buyers collaborate with representatives of their or their suppliers' organizations who share a similar outlook on potential cooperation opportunities, opportunities develop. Persons responsible for creating procurement specifications typically have a profound effect on the freedom of choice and on transactions.

It is vital to evaluate the necessity of each specification parameter, as they may bind the buyer to a single vendor. In addition, suppliers have experience in other industries, which creates potential for collaboration in order to enter a new market. In cases of monopoly, businesses confront scenarios in which they cannot obtain the product or service from any other source if they refuse to purchase from a certain supplier. Therefore, it is probable that the corporation will begin offering a given product or service to itself and other market participants. However, this scenario is highly improbable, as entry costs into a particular industry may be prohibitively expensive.

Depending on sales conditions, a variety of methods may prove useful. These decisions are more tactical than strategic and may compel a monopolist or cartel to become more flexible. In the event that we have a recurring need for specific non-perishable products, we can purchase amounts that exceed our current needs and then abruptly terminate or drastically cut the supply contracts. Suppliers may be disturbed by such acts and be obliged to renegotiate, although the excessive number of purchases will buy some negotiation time. Purchasing a larger quantity for a longer period, such as six months, could be a sufficiently long duration to attract the attention of suppliers and so aid in negotiating better terms. However, storage costs would also need to be evaluated in this case. Ordering more or less at the end of the fiscal year may also attract the attention of suppliers, since regular quantities were likely already planned. However, it is of the utmost importance to consider the long-term implications.

Companies may get into long-term contracts if the demand for a product is anticipated to be persistent. This is helpful for suppliers seeking to secure a consistent, albeit modest, revenue. Therefore, contract conditions may contain the following (Rogers, 2013; Willington & Ning, 2014):

– delivery terms, which must be evaluated financially for future profitability;

– influence on prices (of course the supplier may raise them, but you need to minimise the changes).

The price can be pegged to a certain index, but care must be used while selecting them, particularly those that are consistently rising;

– instances of price drops;

– price increase limitations over a defined time period;

– instances of price increase over a specific time period.

In some instances, it is possible to organize a consortium of purchasers with comparable demands, allowing them to purchase on behalf of all consortium members and granting them additional negotiating leverage. How long does it take to achieve market dominance? Years and even months. Thus, prior to having any effect on the market, it is essential to evaluate the potential response of the enterprise's project managers. However, it takes a considerable amount of time to restore the equilibrium of market power. Naturally, prices may be the outcome of fierce competition as opposed to a cartel. The following are symptoms of price fixing agreements (Braido & Shalders, 2015; Rogers, 2013; Willington & Ning, 2014):

– a certain price, applied only in certain regions or to specific customers;

– the same suppliers increase their prices at the same time, offering similar explanations for the rise;

– changes in prices of individual suppliers with no changes in determining factors;

– minor adjustments to the discount system;

– one of the leading companies typically makes the first offer, with the other companies following suit.

As an alternative to a price cartel, businesses may share areas or clients. For instance, selecting customers in specific regions. Or reaching an agreement on which business will obtain a certain contract. Indicators of such contracts include the following (Sarafopoulos, 2015; Rogers, 2013; Willington & Ning, 2014):

– suppliers, competing in one territory, refuse to supply other areas, thus encouraging to buy from another supplier (with no specific reason);

– suppliers offering different prices in different areas and thus demonstrating their competitiveness, which is not explained by market differences;

– supplier's confidence in success or that the other participant will not participate or will not offer competition;

– supplier's confidence in success or that the other participant will not participate or will not offer competition (which is possible only in case of being in contact or potential agreements with the other competing participants).

In markets with a few dominating suppliers and disorganized buyers, market division is common. Frequently, suppliers assert that geography, transportation, and other market considerations make them less competitive in some sectors. There may be agreements in which suppliers make offers in accordance with common supplier agreements, understanding the minimum bid threshold, discount scheme, or pricing levels. More predictable buyers make it easier for providers to deceive them in order to determine who will win (Bryde, Shaldon, 2015; Sarafopoulos, 2015; Rogers, 2013; Willington, Ning, 2014):

– suppliers opt not to bid to allow another supplier to win;

– suppliers make uncompetitive offers or do not fulfill standards;

– suppliers submit proposals, but participate in a rotation to determine who will win the contract.

Concerned that they may fall prey to unfair competition, purchasers should take note of the unusual conditions. These can be products, services, or projects (Bryde & Shaldon, 2015; Sarafopoulos, 2015; Rogers, 2013; Willington & Ning, 2014):

– proposals that are less acceptable than usual (indicates that there is no tendency to reach an agreement);

– proposals that are completely different from the company's available options;

– the same suppliers always provide the lowest price (over an extended period of time);

– the winner of the contract hires other suppliers, which did not win the tender, as contractors;

– one supplier offers a very low price, making it difficult to explain, why the rest are soaring;

We explored characteristics of distorted market competition in cases of monopsony, oligopsony, and monopoly that are relevant to the development and implementation of negotiating leverage in international commerce. One of the causes for the market's lack of competitive tension is that there are insufficient suppliers to form a free and open competition, as in a monopoly. Consequently, we might refer to a market distortion as a lack of free and open competition. Free competition implies that market participants are competing against one another rather than coordinating and forming cartels. Open competition denotes that market entry barriers are sufficiently low, hence reducing the profits of established competitors, as new entrants would otherwise attempt to sell at lower margins, which would be primarily beneficial for customers and so secure their sales.

The buyer power refers to the ability of purchasers or users to affect the terms of transactions with providers. Monopsony power and negotiating power are two types of power. If the buyer is able to drop the price below the level of market competition among suppliers, he has monopsony power. The bargaining strength exhibited by the buyer during communication and negotiations with suppliers determines their negotiating power. It is monopsonic power, not negotiating power, that results in a lower price. Only when the provider has market power that can be leveraged with negotiation power is negotiating power used. In each scenario, the effects of utilizing negotiating leverage are substantially different. Monopsony and oligopoly lower sales volume and productivity in the supplier market, which has a detrimental impact on the consumer market. The buyer's negotiating leverage is mostly of a compensating character. It might enhance the market situation on the consumer market by increasing the volume of production on the supply market.

In addition, we analyzed approaches that reduce the detrimental impact of market competition distortions on the balance of power in international commercial negotiations. In defining the balance of negotiating power, market structure, market concentration, and competition are among the most crucial factors. Solving instances of distorted competition creates chances for international business, as the presence of other market participants might offer additional options for mitigating the detrimental impact of distorted competition on the balance of negotiating powers between parties. When the number of buyers and sellers is limited, the discussions may center on the potential extra profit between the buyer and seller, based on their respective capacities. Distribution of excess profits is contingent on relative negotiating strength. Profit is the objective of both buyers and sellers, which drives them to reach an agreement rather than explore other options. Greater negotiation efficiency on the part of the buyer provides him with more options, hence limiting the number of options for the seller and resulting in the buyer receiving a larger portion of the extra profit. The transactional profit of buyers is contingent on their capacity and willingness to seek out other providers. Similarly, the transaction profit of sellers is contingent on their capacity and willingness to seek out additional customers. In order to maximize the negotiation potential – the negotiating power – it is important to evaluate the negotiation powers of the negotiating parties prior to developing and implementing a successful international business negotiation plan.

The hunt for new suppliers can increase the number of accessible options, hence enhancing the negotiating strength of purchasers. Additionally, having more options expands the existing market boundaries. This can be accomplished by analyzing comparable or related markets, which may serve as possible supplier markets. Sometimes it is quite tough for other market participants to switch to a different market.

Therefore, buyers seeking potential cheaper suppliers from other markets should consider potential negotiation ideas that would make it simpler to persuade potential future partners to collaborate in a new market: Sharing experience, such as by attaching project managers or sharing a portion of the technology during joint meetings; subsidizing certain costs of entry, purchasing appropriate measures, or otherwise investing in mutually-beneficial cooperation; offering longer contracts; gradually increasing the volume of orders and their complexity, thereby allowing the supplier to adapt their own technology to handle more complex work.

When buyers need their suppliers more than their suppliers need them, they often find themselves in a difficult position. One may contemplate the idea of increased cooperation with a monopoly business, hence growing dependence. This is applicable in instances where providers hold a monopoly in certain but not all business areas. These actions can enhance the available bargaining leverage. Obviously, it is vital to avoid circumstances in which a single provider can give an entire suite of services. Therefore, it is essential to divide the required service into parts, allowing customers to choose from a wider range of suppliers without granting exclusive negotiating power to a single provider. Or, alternatively, a strategic move in the discussions may involve agreeing to sell more to the supplier if they make a better offer.

International business negotiations in a regulated and incomplete information market

When markets are relatively competitive, the economy is thriving because it drives businesses to be efficient and innovative. Better resource allocation, cheaper pricing, a stronger competitive position in negotiations, and increased economic growth and affluence can have lasting consequences on the national economy. Traditionally, while drafting rules, governments disregard the impact of restrictions on market competitiveness. While the consequences of market competition cannot trump some of the desired socioeconomic goals attempted by laws, it is becoming increasingly apparent that limiting the negative effects of competition can provide substantial returns. In recent years, many national governments have taken measures to evaluate the pros and cons of various rules and regulations in an effort to minimize economic growth and prosperity (Blume *et al.*, 2018; Borne *et al.,* 2018; Brooks & Lesieutre, 2019; Cimon & Garriott, 2019; Croutzet & Lasserre, 2017; D'Aertrycke, Ehrenmann, & Smeers, 2017; Denis, 2012).

While measures to increase the efficacy of regulations are gaining momentum, there is no guidance on how to evaluate the effects of various rules and regulations and government action on competition. Competition assessment, which focuses on evaluating the impact of government policies and rules and restrictions imposed by professional organizations on market outcomes, can make a significant contribution to enhancing the efficacy and efficiency of rules and regulations and, for consumers, to greater economic well-being. Governments attempt to encourage competition and create an appropriate competitive environment through the prohibition or restriction of certain company practices and negotiations that unfairly restrict competition. In general, the goals of competition policy can be summarized as the promotion of innovative and competitive markets that influence prices, prosperity, and economic growth.

There is always the pressing question of which services should be provided by the government and which should be left to private companies. Numerous governments have opened state monopolies to private participation (Maravillo *et al.*, 2019; Motalleb, Annaswamy, & Ghorbani, 2018; Moye-Holz *et al.*, 2019; Murto *et al.*, 2019; Niu *et al.*, 2012; OECD, 2017a, 2017b, 2017c; Phillips & Menkhaus, 2010; Pinto & Falco). It included railways, highways, water, postal and telecommunications businesses, as well as education and health services. Mixed results have resulted from these privatizations, and it has often been more difficult than anticipated to coerce private corporations to perform as desired. There are two primary obstacles.

First, many marketplaces are dominated by multiple enterprises, all of which impact prices, quantities, and quality during negotiations. This situation, known as oligopoly, is not addressed by conventional economic theory, which assumes a single monopoly or ideal competition. The second difficulty in negotiations is the absence of information regarding the costs and quality of the regulating body's goods and services. This lack of negotiation skills is frequently a natural advantage for regulated enterprises. Regulations have altered the prices of goods and services on markets such as energy, cable television, healthcare, telephones, airlines, taxis, and rental housing in all nations. In the case of natural monopolies, unfettered markets result in undesirable price increases. Historically, this category has included industries such as electricity, telecommunications, natural gas, and postal services, as well as different forms of government price regulation designed to protect customers from unreasonable price increases.

Governments may restrict pricing to protect consumers, but if corporations are forced to accept lower rates in negotiations than they would prefer, they may reduce the quality of their services. Existing enterprises may have little motivation to offer new product variety if prices are regulated, which can lead to a reduction in product diversity. As price constraints have been relaxed in some nations, businesses such as airlines and telephones, among others, have experienced changes in quality and variety. In addition, diminished profit incentives in marketplaces with price regulation may discourage market entry. In general, the literature demonstrates that although governments may pursue valid social and economic aims to control pricing in specific markets, these policies can have a variety of negative long-term repercussions (Brooks & Lesieutre, 2019; Cimon & Garriott, 2019; Croutzet & Lasserre, 2017).

When policymakers decide to intervene in the market, there are reasons to prioritize "asymmetrically paternalistic" approaches, such as price control, that foster competition rather than impose it. These tools can provide substantial benefits to consumers who make errors. Possible substitutes:

– providing user-friendly sources of comparative information (e.g. websites comparing average prices of mobile phone users from various existing offerings; food labeling requirements; labeling of in-store goods; requiring breakdown of estimates and invoices);

– standards for providing information to consumers (such as the general rule for calculating the annual percentage rate of charge) to improve the comparability of financing offers;

– postponement periods (a week to a month) to improve the comparability of financing offers;

– disclosure requirements (for example, require mortgage lenders to provide an annual percentage rate and monthly payment).

It is difficult to make information more accessible to users. Users could experience information overload. Complex contracts structured in a specific legal language can help reduce the cost of resolving possible contractual disputes; but, the language of such contracts and their disclosure cannot assist ordinary users in making informed decisions. Providing the correct information that can help negotiators agree on better bargains can sometimes confound their evaluation of the desirability of other alternatives. It is difficult to ensure that users receive the information they require in a timely manner, yet enhancing the information available to consumers can improve consumer welfare and potentially save enormous sums of money.

Some policies, regulations, and processes that allow negotiators to communicate information and coordinate on specific activities can create an environment that diminishes company competition incentives. These factors may lead to cartel-like conduct, resulting in higher pricing, less output, and diminished diversity. These conditions differ significantly from those pertaining to the amount and variety of suppliers or business possibilities. In addition, corporations from formerly regulated industries, such as electricity, telecommunications, and natural gas, can pursue specific business practices that create hurdles for negotiations and limit incentives to compete. Instances in which competition incentives may be diminished include (Maravillo *et al.*, 2019; Motalleb *et al.*, 2018; Moye-Holz *et al.*, 2019):

– creating self-regulatory or co-regulatory regimes;

– requiring or encouraging publication of information on suppliers' production, prices, sales, or costs;

– national competition laws do not apply to the activities of a particular industry or group of suppliers;

– customer mobility between suppliers of goods or services is reduced by increasing explicit or implicit switching costs.

It is of particular concern since expenses incurred by market leaders were previously unregulated. Because they can facilitate innovation and develop universal technical regulations, standards, and business practices, numerous information exchange techniques and corporate collaborations are permitted. In a number of nations, businesses and industries have been granted partial or complete exemptions from competition legislation in an effort to boost their growth and exports. In certain instances, economic and social goals are justifiable, while in others they may be incorrect.

Self-regulation has several possible advantages (Blume *et al.,* 2018; Borne *et al.,* 2018; Brooks & Lesieutre, 2019; Ritter *et al.,* 2019; Willems & De Corte, 2008; Yang *et al.,* 2019):

– It affords the possibility for increased regulatory collaboration. The inclusion and endorsement of the recognized industry group as an active player in the regulatory system may boost the regulatory system's legitimacy. These impacts have the potential to increase compliance;

– Involves business and other stakeholders in the regulatory process and permits the use of low-cost or free resources, involving these nations in supervisory monitoring and, in some instances, enforcement activities.

– Participants in talks with specialized knowledge are attracted to the architecture of the regulatory system, believing that it should be well-suited to its intended function and minimally regulated.

Self-regulation exists in the following areas:

– Product characteristics, including quality and safety.

– Compatibility of Designs

– Standardization of technical specifications.

– Ethical practice norms

– Pollution control.

The absence of a formal regulatory mechanism suggests that self-regulation in its form and technique is potentially more adaptable than government regulation, and that it is easier to modify over time in response to problems that arise.

By limiting the number of providers, there is a risk of establishing market dominance and lowering bargaining competition (Willems & De Corte, 2008; Yang *et al.,* 2019). The market dominance of suppliers affords them the option to increase prices profitably, lower quality, or limit innovation relative to levels that would prevail in a competitive marketplace. There is a possibility of a decline in competition (or collusion) between the remaining providers as the number of suppliers decreases, which can increase the power of individual suppliers to raise prices. Reduced competition may reduce the incentives to properly address consumer wants and may reduce innovation and long-term economic performance. Although policymakers may have valid reasons for limiting the number or diversity of suppliers, the benefits of entrance limitation must be carefully weighed against the possibility that easy entry by new providers will prevent incumbent suppliers from exercising market power or engaging in collusion.Granting an exclusive right to produce a particular good or to provide a service implies the creation of a private monopoly. Historically, exclusive rights have often been granted under “natural monopoly”. A monopoly exists when a good or service can reasonably be obtained from only one supplier. In a “natural monopoly”, one supplier can produce the desired output more efficiently and at a lower cost than two or more suppliers.

Excludive rights, especially when granted for extended periods of time, are frequently viewed as a way to encourage big infrastructure expenditures, which cannot occur without a definite market incentive. However, exclusive rights are sometimes employed in circumstances when they are not justified by a natural monopoly (Borne *et al.,* 2018; Brooks & Lesieutre, 2019; Cimon & Garriott, 2019; Croutzet & Lasserre, 2017; Ritter *et al.,* 2019; Willems & De Corte, 2008; Yang *et al.,* 2019).

The largest barrier to market entry is exclusive rights, which can lead to monopoly pricing and other issues associated with the exercise of market power. These effects are not always averted by regulation, as authorities are frequently unable to curb market power and safeguard consumers. Consequently, such rights should be limited and defined only after careful assessment of the taxable pricing, the duration of the rights, and the alternatives available to achieve the same goals.

In the lack of other options, regulators may auction off exclusive rights. In the majority of instances, the split of exclusive rights between two or three parties can sustain the dynamics of competition to some degree, so achieving the desired benefit. Licenses or licences required for the activity restrict access. Positivity-based requirements may be incorporated into the minimal requirements for formal education and/or work experience. In the banking industry, for instance, so-called aptitude exams are frequently required prior to official company and board posts. In some industries, potential market participants are required to perform a “public interest” test to demonstrate the “need” for additional services and, if applicable, to demonstrate that their entry will not negatively impact the existing business (Moye-Holz *et al.,* 2019; Murto *et al.,* 2019; Niu *et al.,* 2012; OECD, 2017a, 2017b, 2017c; Phillips & Menkhaus, 2010).

In certain circumstances, the number of license holders can be capped. Frequently, license or permit requirements are more stringent than necessary for consumer protection, which can unduly limit consumer choice or cause artificial scarcity that drives up prices. Despite the fact that licensing systems may have legitimate consumer protection goals, such obstacles frequently protect incumbent firms from competition. It must be ensured that the requirements for licenses and permits do not grow more burdensome than necessary to achieve the targeted regulatory goals. The product quality criteria that guarantee consumer safety should not exceed what is required. Similarly, supplier size constraints should not be imposed at levels that have major anticompetitive or inefficient impacts. Similarly, when contemplating mandatory insurance, performance guarantees, and similar restrictions, the nature and amount of the damage to the consumer that may come from the service provider’s improper conduct or failure should be considered (Phillips & Menkhaus, 2010).

To safeguard customers against potential harm, they must be allowed to make rational decisions when selecting a service provider. There should be alternate strategies for enhancing customer knowledge. Increased admission or exit expenses will discourage potential entrants, resulting in a gradual decline in the number of entrants. This sort of regulation is characterized by strict product testing standards and excessively high educational or technical criteria.

Governments will sometimes provide specific exclusions to mitigate the harmful effects of such laws on competition. For instance, small automobile manufacturers are frequently excluded from or subject to less burdensome vehicle testing standards and test methodologies. To better inform consumers before they make a decision, alternatives such as giving additional information or evaluating product disclosure requirements could be utilized. In some instances, regulation may be necessary, even if it increases the cost of entrance. The focus should be on minimizing anti-competitive potential by ensuring that rules are in place to maintain the minimum essential degree of consumer protection (OECD, 2017a, 2017b, 2017c; Ritter *et al.*, 2019; Willems & De Corte, 2008; Yang *et al.*, 2019).

Occasionally, legislation restricts the cross-jurisdictional flow of commodities, services, capital, and/or labor, frequently as an instrument of regional policy. However, these constraints reduce the geographical area of competition in the provision of products and services. This can lower the number of providers and allow suppliers to increase prices by using their market strength. Possible constraints should be evaluated based on the following criteria:

– Is there a clear connection between the constraints and the achievement of certain policy objectives?

– Are limits required to achieve the objective?

– Does a credible analysis suggest that the policy objective will be attained by means of restraint?

– Are the limits time-bound in accordance with stated regulatory provisions?

There is a significant possibility that "temporary" protection will become a quasi-permanent accord due to the lobbying efforts of suppliers who will benefit from restrictions. Regulation can impact a supplier's capacity to compete in a number of ways, including restrictions on advertising and marketing, standard measurement of product or service quality, and price regulation for goods and services. These restrictions may lessen the intensity and scope of competition, resulting in higher consumer costs and less product variety. Governments frequently regulate prices in traditionally monopolistic industries, such as utilities (OECD, 2017a, 2017b, 2017c; Phillips & Menkhaus, 2010; Pinto & Falco-Reis, 2019; Ren & Zhang, 2014; Ritter *et al.*, 2019; Willems & De Corte, 2008; Yang *et al.*, 2019). These types of pricing limitations are undoubtedly advantageous to customers and serve as a counterbalance to the dearth of consumer options.

However, price control is occasionally implemented when there are numerous prospective suppliers for the same consumer. When minimum pricing are established for low-cost suppliers who offer superior value to consumers, they are prevented from gaining market share. Similarly, adopting maximum prices can dramatically diminish suppliers' incentives to innovate with new and/or high-quality items, allowing suppliers to effectively align their prices with maximum prices.

Sometimes, minimum price legislation is a response to intense price competition. In these situations, minimum price regulation is commonly viewed as a measure of shielding small suppliers from "unfair" competition. It is important to assess the consequences of such price restriction, as it is likely to result in increased prices for consumers or unmet demand. Frequently, maximum prices are established as a result of market entrance restrictions. The alternative is to increase market access freedom. Rarely is price regulation the most effective or efficient method for accomplishing the specified goals. In the taxi business, for instance, removing supply constraints by adding roadside surveillance services is a superior consumer protection approach. In terms of predatory pricing, general competition law is likely a superior alternative. Consequently, regulations providing price control should be subjected to the strictest scrutiny (Lee *et al.,* 2018; Lohmann & Trischler, 2017; Maravillo *et al.,* 2019; Motalleb *et al.,* 2018; Moye-Holz *et al.,* 2019).

It is essential to identify the various categories of new entrants in order to comprehend their effect on market entry. There are three broad categories of entrants. New company engaged in the development of a new plant (production facility) in the manufacturing or services industry. A new machine tool company, for instance, was founded by entrepreneurs with no prior commercial expertise. Due to the information technology revolution and the surge of biotechnology and nanotechnology, it has become apparent that many companies are entering these areas with no prior commercial expertise. Also included in this category is the legal practice of new law graduates.

Diversification of the firm by altering the range of goods manufactured in existing plants. In the same flexible manufacturing facility, for instance, a car business that has historically manufactured mid-size and large vehicles also builds compact, fuel-efficient vehicles. A steel firm that manufactures machined steel and alloy steel also produces steel bearings and gears. A software company that previously specialized in network security software is now offering online games.

Entrepreneurs can learn from past business experience, market knowledge, and regulatory hurdles (D'Aertrycke *et al.*, 2017; Denis, 2012; Gissey *et al.,* 2018; Hu *et al.,* 2018; Gissey *et al.,* 2018).

In general, business experience enables entrepreneurs to learn from past experience, market knowledge, and regulatory hurdles. Failure (or departure) rates are typically quite high, and:

– normally, more than sixty percent of people entering a group fail and leave the industry within five years;

– type 1 market participant (new company with new plant) exit rates are seven to eight times greater than type 2 participants (diversifying company with new company).

If market negotiations are inherently dangerous, new entrants will pay significant exit costs, creating an extra barrier to entrance and deterring entry.

Various laws and regulations established by governments and professional organizations restrict market access. Regulations might be explicit, such as total entry limitations, or indirect, as in the case of total entry restrictions. Explicit limits are the most detrimental to competition because they are the most direct. Numerous nations set restrictions on the number of retail establishments permitted in a certain geographic area or for a certain population density.

There are implication restrictions that indirectly hinder market entry. To compel the market to share its network with new competitors, competition rules would be required for unregulated telecommunications markets, for instance. Moreover, players cannot provide (good) services (online or over the phone) while competing. Similar issues arise in energy markets when entry to the incumbent's transmission network is required for considerable competition to exist. Nonetheless, the non-sharing requirement does not necessarily imply that the incumbent will not grant access to its network, but it will do so for the entrant/potential competitor if the business outlook becomes more uncertain (Yang *et al.,* 2019):

– Quality standards and certification regulations, including those issued by professional organizations such as the legal, accounting, or medical fields, can erect formidable entrance barriers.

– Significant administrative and bureaucratic barriers can delay or impede admission.

While in many instances the initial argument for rules and regulations in the public interest was well-founded, it is crucial to keep in mind that they may negatively impact consumer welfare and impede the growth and development of markets over the long term. Market access restrictions should be avoided, especially those associated with market structure regulation.

However, laws such as those based on land use regulations may be deemed acceptable under specific conditions. In the case of a natural monopoly and in the context of universal service, for instance, exclusive rights should not be included in the contract. If they are to be included in the contract, they should be examined and revised in light of changing market conditions and circumstances. When governments apply entrance limitations based on stability concerns, such as financial markets and banking, there should be clarity and transparency, and the principle of minimum limits should be adhered to. Any laws or regulations that result in explicit or implicit scrutiny must be carefully reviewed by regulators in light of the potential for major harmful repercussions.

In numerous domains, governments grant businesses exclusive rights to ideas, the manufacturing of things, the purchasing of goods, and the supply of services. In the past, electricity, natural gas, telecommunications, water, postal services, and railways were granted legal monopolies or exclusive rights to provide services. This can occur via defense contracts and raw material delivery. Numerous justifications exist for granting or extending exclusive rights. In some businesses, giving genuine monopolies (or exclusive rights) is justified by economies of scale resulting from high overheads. As markets and technology advanced over time, several nations deregulated, privatized, and permitted national enterprises to compete (Blume *et al.*, 2018; Borne *et al.*, 2018).

In addition, more sophisticated regulatory approaches have made it possible to identify industry-specific factors prone to natural monopoly and to differentiate them from other potentially competitive aspects (both upstream and downstream). Beneficiaries of exclusive production rights for goods and services are obtaining enormous market influence. In the case of natural monopolies, the price or rate of return in the utilities industry has addressed the problem.

There are legitimate arguments for issuing patents, but the “extension” of patents has generated considerable discussion and worry. Pharmaceutical corporations, for instance, have aggressively sought to extend patents. Extending patent protection periods may have significant drawbacks:

– it extends the period during which consumers will pay higher prices;

– patent owners can fight aggressively for the extension of potential market participants, such as generic companies, incurring high costs (such as litigation costs) and reducing the likelihood of future market entry. Long-term adverse consequences on competition can be substantial.

Although the rationale behind the granting of legal monopolies was sound, the literature on regulatory impact demonstrates that there were significant shortcomings in terms of lack of innovation, inefficiency in production, and introduction of newer technologies, which were detrimental to the long-term growth of these industries. In other instances where governments award exclusive rights, the pros and downsides are unequal and should be examined case by case. In the preceding example of solid waste disposal, governments are becoming increasingly conscious that allowing competition in these markets can have a favorable effect (Lohmann & Trischler, 2017; Maravillo *et al.,* 2019).

In many instances, government-granted exclusive rights can be revoked by closely observing these markets. There is accumulating evidence that giving or extending exclusive rights in specific regions may not inevitably increase welfare. In light of the increased popularity of generic medications, for instance, patent extensions must be carefully considered. Obviously, there are instances in which extensions should be granted, such as when lengthy regulatory enactments prolong the approval procedure, drastically shortening the patent’s duration. In some instances, patent owners may aggressively increase prices and charge generic manufacturers hefty fees. Some incumbents have large pockets and may engage in protracted litigation, whereas challengers may not always be able to do the same. In such instances, the extension of the patent could restrict people from acquiring cheaper generic medications, so compromising their health. In a number of other areas, such as waste collection, the quality and cost of services have increased significantly as a result of market competition experiments. In general, the granting or extension of exclusive rights must be carefully evaluated because it can substantially limit competition (Lee *et al.,* 2018; Lohmann & Trischler, 2017).

Historically, the movement of products between regions and states has been subject to tolls. Although many of these restrictions have been eliminated over time, there are still instances in which they persist. Arguments for establishing such rules include:

– protection of state or regional companies from competition;

– charges have been levied on the weight of goods and the size of trucks from other regions and states that could move through that region or state, since the roads in the region or state are typically the responsibility of the local government;

– consumer protection, for example, through the adoption of laws prohibiting the sale of non-status drugs;

– environmental protection, for example, through the imposition of restrictions on the importation of

Legislation restricting the geographical flow of products may take quite explicit forms, such as an outright ban on the importation of goods and services from outside the country or region (Willems & De Corte, 2008; Yang *et al.,* 2019). It is crucial to remember that the free movement of products, services, and capital throughout the nation's regions is essential for consumers to take advantage of competition and for firms to sell to and flourish in larger markets. If the regions or states of the countries legalize the flow of goods and services, these benefits could be lost. This entails that proposed rules and regulations that restrict the flow of goods and services must be thoroughly examined and evaluated for their anticipated benefits, costs, and effects on competition. Typically, these constraints should be eliminated.

Governments and professional groups are able to establish rules and regulations that can reduce competition in market discussions, increase prices, and reduce the diversity and quality of goods and services.

It is not easy to enhance user access to information. A negotiator could experience information overload. Complex contracts structured in a specific legal language can help lower the expense of resolving possible contractual disputes, but the language of such contracts and their disclosure cannot assist average users in making informed judgments. Providing the correct information, which could assist negotiators in reaching better agreements, may mislead their evaluation of the desirability of other alternatives. It is difficult to ensure that consumers receive the information they require in a timely manner, but improving the content of the information provided to consumers has the potential to improve consumers' well-being and save considerable sums of money.

Some rules, regulations, and systems that allow corporations to exchange information and collaborate on specific operations might create an atmosphere that discourages corporate competition. These factors may lead to cartel-like conduct, resulting in higher pricing, less output, and diminished diversity. These conditions differ significantly from those pertaining to the amount and variety of suppliers or business possibilities. Previously regulated expenditures incurred by prominent market participants are of particular importance.

Numerous information sharing systems and collaborative efforts amongst negotiators are permitted because they stimulate innovation and establish uniform technical regulations, standards, and business practices. In a number of nations, corporations and industries have been granted partial or complete exemptions from competition regulations in an effort to boost their growth and exports. In some instances, economic and social objectives may be justifiable, while in others they may be inappropriate. Due to the absence of a formal regulatory mechanism, self-regulation in its form and technique is theoretically more adaptable than government regulation, and is easier to modify as difficulties develop.

Exclusive rights are a significant barrier to entry for negotiators and can lead to monopoly pricing and other issues associated with the exercise of market power. These effects are not always averted by regulation, as authorities are frequently unable to curb market power and safeguard consumers. Consequently, such rights should be limited and determined only after careful evaluation of the taxable prices, the length of the rights, and the alternatives available to achieve the same objectives. In the lack of other options, regulators may auction off exclusive rights. In a number of instances, the distribution of exclusive rights among two or three companies might sustain the dynamics of competition to some degree in order to obtain the intended benefits. Licenses or licences necessary for the activities restrict the market's accessibility.

Positivity-based requirements can take the shape of minimal standards for formal education and/or experience, as well as minimum standards for formal education and/or experience. Occasionally, minimum price legislation is a response to intense price competitiveness in negotiations. In these situations, minimum price regulation is commonly viewed as a measure of shielding small suppliers from "unfair" competition. Such price regulation must be carefully considered, as it is likely to result in increased consumer costs or unmet demand. Oftentimes, entry restrictions necessitate the imposition of maximum pricing. The alternative is to let market entry more freely. Rarely is price regulation the most effective or efficient method for accomplishing the specified goals.

A direct prohibition on the purchase of goods and services from within a country or region is one kind of legislation that restricts the geographical movement of products. It is necessary to remember that the free movement of products, services, and capital between regions of the country is essential for consumers to reap the benefits of competition and for businesses to get access to larger markets in which to sell and expand. If the regions or states of the countries legalize the flow of goods and services, these benefits may be lost. This entails that the proposed rules and regulations restricting the flow of products and services must be carefully examined and evaluated in terms of their anticipated benefits, costs, and effect on competition.

Assessment of competition in business negotiations under fraudulent market conditions

Among the activities of national competition authorities are efforts by entrepreneurs and professional organizations to find barriers to market entry, increase costs for corporate competitors, and coordinate (as opposed to compete) the pricing and production tactics of competitors. Some businesses are out of control as a result of diminished competition, which can result in higher pricing for consumers, loss of product variety and quality, loss of innovation, and loss of corporate negotiating strength. Knowledge of the concepts and fundamentals of competition is useful for gaining a comprehensive understanding of the effects of government regulations and policy initiatives. If we examine the history of rules and regulations issued by governments and limits imposed by professional groups, we find that they frequently restrict market access and cause numerous distortions that result in inefficient market results.

The rules and regulations are designed to meet a variety of socio-economic objectives pursued by governments and can: identify barriers to competition, such as restrictions on access or flow of goods and services within regions; facilitate price and production coordination between competitors; impose higher costs on participants and small businesses compared to incumbents or larger businesses; shield companies partially or entirely from national competition laws.

The establishment of cartels is one of the corporate practices that is most detrimental to competition (Niu, Dong, & Chen, 2012; OECD, 2017a, 2017b, 2017c; Phillips & Menkhaus, 2010; Pinto & Falco-Reis, 2019; Ren & Zhang, 2014; Ritter *et al.*, 2019; Willems & De Corte, 2008; Yang, Zhang, & Gao, 2019).

As a result of cartels, of hidden or concerted behavior, there are rising costs, diminishing quantities of goods, potentially less diversity and innovations, an obvious loss of well-being, and the bargaining power of the parties is diminished. Today, collaboration is banned in the majority of nations. In some industries, for instance, businesses collaborate to establish standards and compatibility guidelines, in addition to performing research and development (R&D). Historically, certain professions and producers of goods and services have had the option to engage in self-regulation (or co-regulation) in areas such as product properties, including quality and safety, coordination of technical standards, ethical standards of professional practice, and pollution control. Obviously, giving emphasis to some sorts of collaboration can result in more efficient market outcomes and lessen the need for more formal regulation, resulting in major benefits.

Due to regulation, some suppliers occasionally increase their pricing relative to their competitors during discussions. The rule that unduly mandates the adoption of one production technique over another contributes to cost asymmetry. A second source is “propagation of old players”, which exempts incumbent suppliers from the legislation but applies to new entrants. The source consists of grants or preferential financing for state-owned or favored businesses. Such agreements have the potential to distort bargaining competitive relationships in the industry, affecting the costs of some suppliers more than others (Maravillo *et al.*, 2019; Motalleb, Annaswamy, & Ghorbani, 2018; Moye-Holz, van Dijk, Reijneveld, & Hogerzeil, 2019; Murto *et al.*, 2019; Niu *et al.*, 2012; OECD, 2017). This can lead to inefficiencies, impede market entry, diminish corporate-led innovation, and lessen the intensity of competitive bargaining on the market, so altering the equilibrium of bargaining power. Although establishing cost gaps can be harmful, this does not imply that equal supplier prices should always be pursued in legislation.

A legislation mandating the registration of specific professional experience may offer exemptions for former participants, allowing people with substantial professional experience to register even if they lack the training or credentials required for new applications. When it comes to productive technology, these restrictions are frequently imposed to ensure that prior investments have sufficient time to amortize hidden costs. It is possible to lessen the anticompetitive consequences of grandparent clauses by ensuring that their duration is not perpetual. Particularly, the duration of the exception should be strictly proportional to the reservation it attempts to justify. In general, however, it is prudent to view arguments with scepticism due to the need for grandparents' clauses, as they frequently reflect attempts to shield interests from prospective competition.

Subsidies can be advantageous in a variety of situations, but when they fundamentally alter the competitive terms of negotiations by favoring inefficient enterprises, they might drive business to less efficient providers. Restructuring may be used as an alternative to subsidies in order to eliminate uneconomic activities and increase firm productivity, but special subsidies may occasionally be required to assist such a transition. In some countries, subsidies are restricted to guarantee that they are not constant, that they are truly intended at enhancing the performance of promising enterprises and eliminating market flaws, and that their detrimental impact on competition during negotiations is minimal. Regulations can influence the conduct of suppliers not just by altering their ability to compete in negotiations, but also by altering their motivation to act as strong rivals. Cogley *et al.* (2018), Borne *et al.* (2018), Brooks & Lesieutre (2019), Cimon & Garriott (2019), Croutzet & Lasserre (2017), D'Aertrycke, Ehrenmann, & Smeers (2017) find that the main reason suppliers may be less competitive in negotiations is due to regulations that may facilitate coordination between themselves or reduce customer willingness, ability, or incentive to switch to different suppliers. Profit or market share thresholds that restrict potential rewards on competition are other factors. Self-regulation or co-regulation can facilitate cartel conduct by raising the output and price information of some suppliers or by exempting the industry or branch from competition law. A cartel develops when rivals agree to limit competition during talks, for as by fixing prices, limiting supply, sharing profits, or competing, so boosting their overall earnings. Cartels are harmful because they restrict production and increase costs, which harms consumers. There must be a balance between the risk of cartel actions and the possible benefits of self-regulation, such as faster certification of innovative technology. When a business or professional association assumes complete responsibility for regulating the behavior of its members without government support (which is typically required), the phrase "self-regulation" is employed. However, "common regulation" is used when the government offers legislative norms that are at least largely created by industry/professional associations. Self-regulation and common regulatory frameworks can provide considerable benefits by ensuring that technical standards are adequate and are evolving in tandem with technological advancements. Nevertheless, these structures may have substantial anti-competitive impacts (D'Aertrycke et al., 2017; Denis, 2012; Gissey, Dodds, & Radcliffe, 2018; Hu *et al.*, 2018; Lee *et al.*, 2018; Lohmann & Trischler, 2017). Particularly, industrial and professional groups frequently adopt regulations that diminish incentives or chances for aggressive competition among providers of products or services, such as advertising bans and rules prohibiting discounts. In addition, too stringent requirements for qualification can impede market entrance. Governments should maintain the ability to prevent industry/professional associations from exercising regulatory authority in an anti-competitive manner. This may be accomplished either by ensuring that self-regulation or common regulation remains subject to competition law enforcement or by granting the relevant governmental authorities the authority to approve or reject the association's rules and, if necessary, change them if the association continues to propose rules that are unacceptable. Regulations requiring market participants to publish information on their prices or output levels can significantly contribute to the formation of cartels, as the fundamental requirement for the functioning of a cartel is that participants can effectively monitor the market behavior of their competitors (or other conspirators).

Cartels and implicit coordination are more likely to occur when (Cimon & Garriott, 2019; Croutzet & Lasserre, 2017; D'Aertrycke *et al.*, 2017; Denis, 2012; Gissey *et al.*, 2018; Hu *et al.*, 2018; Lee *et al.*, 2018; Lohmann & Trischler, 2017): there are fewer players in the market; entry barriers are high; supplier products are It is possible to accept legislation requiring the publication of information such as pricing and output levels in order to promote consumer information and, on occasion, market efficiency. However, as the cartel matures, these constraints are expected to have an increasingly unfavorable impact. There are various alternatives where it is not essential to publish all acquired data.

When information is collected exclusively for government policymaking, its publication may not be necessary. When the objective is to assist users or provide broad statistics, general statistics provide less support for cartels than company-specific statistics, and historical statistics provide less support than current data. General corporate statistics deter cartel members from recognizing suppliers breaching the cartel agreement, however company-specific statistics can unambiguously identify the company that deviated from the cartel agreement in terms of price or quantity. As cartels must share the most up-to-date information to distribute output and set target prices, they find historical statistics and data less useful (Niu *et al.*, 2012; OECD, 2017a, 2017b, 2017c; Phillips & Menkhaus, 2010; Pinto & Falco-Reis, 2019; Ren & Zhang, 2014; Ritter *et al.*, 2019; Willems & De Corte, 2008).

Certain sectors are subject to sector-specific competition legislation (Borne *et al.*, 2018; Brooks & Lesieutre, 2019; Cimon &

Garriott, 2019; Croutzet & Lasserre, 2017; D'Aertrycke *et al.*, 2017; Denis, 2012; Gissey *et al.*, 2018; Hu *et al.*, 2018; Lee *et al.*, 2018).

In all other instances, anti-competitive activity is permitted. If the essential exception to the general application of competition law exists, there is a possibility of cartel abuse and anticompetitive mergers.

A merger is the coming together of two (or more) previously independent companies to form one larger entity. When an exception has a concrete basis for subsequent application, its impact should be minimized. For instance, a statutory monopoly that requires all producers to sell specific commodities to a licensed wholesaler may be more restricted than enabling manufacturers to sell by arrangement.

The "switching costs" – the explicit and implicit costs of a consumer transferring from one supplier to another – may be affected by legislation, which may make consumers more or less eager to move suppliers (Brooks & Lesieutre, 2019; Cimon & Garriott, 2019; Croutzet & Lasserre, 2017). Replacement costs can arise for a variety of reasons, including lengthy contract periods or inconveniently attaching assets to suppliers, such as identifying a phone number with a specific service provider. When consumers have high switching costs, suppliers may charge higher prices for their goods or services, and they may also push regulations designed to assure high replacement costs. The benefits of increasing competition in negotiations, reducing or eliminating replacement costs can be substantial, thus policymakers should avoid enacting measures that increase replacement costs for customers. Where there is a clear possibility that replacement costs will be calculated, the regulatory framework should contain restrictions or prohibitions on their usage.

The replacement costs of legitimate consumers should be taken into account. Even though the supplier incurs large expenses as a result of the switching process, if the pro-competitive effects of the cost reduction or elimination are substantial, the regulatory authority may prohibit suppliers from plainly passing these costs forward to consumers. Before a buyer makes a purchasing choice, business competition can lessen the negative impact of replacement costs.

Governments' thorough understanding of the benefits of competition is a significant factor in market reforms. In many unregulated industries, such as telecommunications, electricity, and airlines, one of the purported competitive advantages was overcapacity resulting from regulation, which would ultimately lead to a reduction in efficiency, thereby increasing production efficiency and lowering consumer prices. Cogley *et al.* (2018) underlines that as a growing number of industries are privatized or liberalized across the globe, governments comprehend the competitive advantages.

Business competition can increase manufacturing efficiency and provide consumers with newer and better products through innovations, thereby promoting economic growth and consumer welfare (Croutzet & Lasserre, 2017; D'Aertrycke *et al.*, 2017; Denis, 2012; Gissey *et al.*, 2018; Hu *et al.*, 2018; Lee *et al.*, 2018; Niu *et al.*, 2012; OECD, 2017a, 2017b, 2017c). In general, supplier rivalry leads in cheaper pricing and a greater selection. There are a few instances that highlight the overall benefits of competition without necessarily emphasizing regulatory limits in order to illustrate how these benefits directly benefit consumers. Customers, as well as the economy as a whole, gain from the availability of several service providers. Their alternatives force businesses to compete with one another. Competition between enterprises contributes to greater productivity and economic progress. Customer choice is positive. It may be challenging to quantify the direct effect of, say, competition law on economic growth. Nonetheless, each of the connections below is supported by substantial evidence.

Moreover, it is evident that industries are expanding quicker with increased rivalry (Maravillo *et al.*, 2019; Motalleb *et al.*, 2018; Moye-Holz *et al.*, 2019; Murto *et al.*, 2019; Niu *et al.*, 2012; OECD, 2017a, 2017b, 2017c). Numerous empirical studies of industry and even businesses have proved this. This discovery pertains not only to the Western economy, but also to study conducted in Japan, South Korea, and underdeveloped nations. In many cases, adjacent sectors are negatively impacted by the repercussions of greater competition. Strong competition in supplier sectors can "boost" productivity and employment in consumer sectors and throughout the economy. This is largely due to competition, which improves distribution efficiency by allowing more efficient firms to enter the market and take market share from less efficient firms. Therefore, rules or anticompetitive conduct that hinder market entry and extension may be particularly detrimental to economic progress. In addition to enhancing enterprises' productivity, competition appears to result in better-managed businesses. It is fair, and can be implemented in sectors with significant social and economic benefits; for instance, there is growing evidence that competition in healthcare can enhance quality outcomes. There is also evidence that competition-enhancing interventions improve innovation; firms that face competition innovate more than monopolies. The relationship is not straightforward: it is possible that, on average, competitive markets have the most innovation, whereas monopolies and highly competitive markets include innovation that is less robust. Nonetheless, as competition policy concentrates on the introduction or strengthening of competition in badly functioning markets as opposed to moderately competitive sectors, which would become hypercompetitive, the majority of competition policies are still intended to promote innovation. Increased market competition results in greater productivity. Market competition will increase as a result of the implementation of competition legislation and the elimination of barriers to competition (D'Aertrycke *et al.,* 2017; Denis, 2012; Gissey *et al.,* 2018; Hu *et al.,* 2018; Lee *et al.,* 2018; Lohmann & Trischler, 2017). Many deregulation cases have led to comparisons between industries and countries throughout time, strengthening the evidentiary base supporting deregulation of the product market. In addition, regulatory regulations intended to promote competition, particularly in online activities, have enhanced productivity.

Obviously, there are other policy objectives besides GDP growth, and the OECD has assessed and examined these objectives with greater rigor when formulating policy (OECD, 2017a, 2017b, 2017c).

Less research has been conducted on the consequences of competition on inequality, and it is commonly believed that these effects are negative because competition creates winners and losers. However, the constraints of competition harm the majority of society, while the profits typically accrue to the minority. Frequently, the most vulnerable members of society are the poorest because of restrictions on competition, increased costs, or diminished quality and variety.

Similarly, when concerns arise due to the loss of employment as a result of increased productivity, it should be noted that redundancy is frequently a result of competition and other types of technological advancement (D'Aertrycke *et al.,* 2017; Denis, 2012; Gissey *et al.,* 2018; Hu *et al.,* 2018; Lee *et al.,* 2018; Lohmann & Trischler, 2017). In addition, it has been demonstrated that competition restraints limit output and employment, making it imperative to invest in new and alternative kinds of productive employment.

Increased competition and the opening of markets to competition through a comprehensive evaluation of new or existing laws and regulations will lead to economic growth, higher productivity, and better wealth in general (Ritter *et al.,* 2019; Willems & De Corte, 2008; Yang *et al.,* 2019). As we have seen, competition assessment is the process of assessing government laws, regulations, and/or regulations in order to (1) identify those who unduly block competition and (2) modify the rules to avoid unnecessary competition distortions. To effectively adapt this method to government operations and institutions, the following five considerations must be taken into account:

– Which policies should be evaluated for competition?

– When should competition evaluation be conducted during the policymaking procedure?

– Who should be in charge of designing and reviewing the competition evaluation project?

− How can politicians who do not assume responsibility for the quality of regulation or competition be incentivized to make accurate evaluations?

− What resources are required to assess the competition?

It will become evident that there is no straightforward formula for the institutional implementation of competitive evaluation. Depending on variables such as the existence of a federal system, the staffing levels, and the political climate, the predicted solutions will vary considerably between jurisdictions (Willems & De Corte, 2008; Yang *et al.,* 2019). Although the toolbox draws on previous expertise in finding viable prospects, it is not exhaustive. As evidenced by the OECD study (2017a), the toolkit was deemed quite useful for conducting a variety of assessments, including impact assessment integrated into regulatory impact assessment, optional assessment that may be advantageous to competition, and market and sector studies. The evaluation of competition should be proportional to the policy’s possible adverse impact on competition. The competition check list enables the rapid review of policies and the identification of potential elements that may have an undue influence on competition. Generally speaking, distinct laws or other legislation do not have this potential and, as a result, do not require a complete review of competition. Competition evaluation may be conducted in the context of the evaluation of laws and regulations during the implementation of policies and rules. Some governments and independent public entities (such as national competition authorities, audit courts, etc.) have opted to investigate subsidies or preferential treatment of competition for state-owned firms. Not all governments respect their own laws from a competitive standpoint, but those that do were the most competitively successful.

Some governments have begun to evaluate new and current policies in relation to competition. This is the most effective strategy to significantly alter the competitive climate, but it requires an enormous amount of political will. Other governments have created a competition evaluation form that is only focused on new policies.

Evaluation of competition at the national, regional, and local levels has a solid economic foundation (Moye-Holz *et al.*, 2019; Murto *et al.*, 2019; Niu *et al.*, 2012; OECD, 2017a). Evaluation is essential for every government policy that could unnecessarily restrict competition. Such policies are occasionally established at the national level, but can also be produced at the regional or local level. For instance, anticompetitive regulations for taxi services are frequently established at the municipal level, whereas consumer-harming specialized regulation is frequently imposed at the regional level.

Some countries have begun to evaluate new and existing policies on competition (Yang *et al.*, 2019). This is the most effective technique to significantly enhance the competitive environment, but it takes tremendous political will. Other governments have established an evaluation form for competitions that focuses exclusively on new policy. The evaluation of competition at the national, regional, and local levels has a solid economic foundation. Evaluation is essential for every government policy that could unnecessarily restrict competition. Such policies are occasionally established at the national level, but can also be produced at the regional or local level. For instance, anticompetitive policies in taxi services are frequently established at the local level, but consumer-harming regulation of specialists is typically carried out at the regional level.

But “frontline” policymakers do not take the competition evaluation process seriously without an external review (D’Aertrycke *et al.*, 2017; Denis, 2012; Gissey *et al.*, 2018; Hu *et al.*, 2018; Lee *et al.*, 2018; Lohmann & Trischler, 2017). Control may be exercised by supervisors, officials with understanding of competition expertise, such as those employed by competition authorities, in one of the two aforementioned variations. Better Regulation Executive (BRE), the Regulatory System Manager in the United Kingdom, is responsible for monitoring the impact of new regulatory measures. The regulations were examined in accordance with the recommendations provided by the Business Department in March 2015, had a good effect on competition and resulted in net zero costs, and are closely monitored during the impact assessment procedure. Policymakers are also at liberty to evaluate whether or not their proposal will harm competition.

Departments may seek guidance from the Competition and Markets Authority (CMA) if their proposals raise competition issues requiring a more in-depth review (Lee *et al.*, 2018; Lohmann & Trischler, 2017). If ministers are concerned about the potential impact of legislative proposals on competition, the CMA has the authority to make recommendations to them. A larger and more extensive review than the Competition Checklist typically involves market definition and competition analysis skills. Before enacting relevant rules, some nations require their competition authorities to assess any new laws and regulations that are anticipated to have an economic impact. In Mexico, for instance, the competition authority must assess any new secondary legislation that could have an impact on competition. In Korea, it is the responsibility of the competition authority to assess a selection of new regulations. The competition authority in Hungary is mandated to comment on proposed regulations.

Prior to the adoption of the new legislation, horizontal consultations were conducted in many other nations (D’Aertrycke *et* *al.*, 2017; Denis, 2012; Gissey *et al.*, 2018; Hu *et al.*, 2018) When competition commentators can begin the process early, the consultation is more effective. They are not compelled to comment on the policy as a whole, but they may interfere if they believe a big potential problem may occur.

The degree of the review body's independence is also crucial. In 1995, a new agency was established in Australia to manage the national and state or territory laws of the National Competition Policy and examine other legislation. The National Competition Council was established as a separate and independent organization to supervise the competition service's new regulations and acts.

Some national competition authorities, such as the former Spanish Comisión Nacional de la Competencia, have examined and issued annual reports on grant schemes.

Involvement of a competition authority or other governmental authority in the competition assessment process should not obstruct any future government legal action under the jurisdiction's competition legislation. Competition assessments are, by definition, based on forecasts, and in practice, predictions can indicate minimal or excessive competition harm.

Review of competition assessment aims to discover a policy alternative that allows the policymaker to accomplish the desired outcome with the least amount of competition distortion possible. On occasion, the reviewed policy may be the correct object, but on other instances, less restrictive alternatives may be more appropriate (Phillips & Menkhaus, 2010; Pinto & Falco-Reis, 2019; Ren & Zhang, 2014).

Therefore, if the checklist reveals that the policy under consideration is likely to distort competition, attention should be given to employing alternative, less distorting measures to achieve the same objective. This exercise necessitates the identification of all strategies for achieving the objective, the evaluation of each strategy's competitive impact, and the selection of the strategy with the largest benefit. Next, we will provide direction on how to explore less restrictive alternatives to fulfill the stated goal.

Identifying less restrictive alternatives to certain policies is a task for a particular fact that requires a thorough understanding of the policy and a high level of expertise in that area (Brooks & Lesieutre, 2019; Cimon & Garriott, 2019; Croutzet & Lasserre, 2017; Hu *et al.*, 2018; Lee *et al.*, 2018; Lohmann & Trischler, 2017; Maravillo *et al.*, 2019). The first stage is to establish a clear policy objective. If the policy is pursued to eliminate market failure, a mechanism is required. A concise explanation of the market failure that the policy attempts to correct or mitigate. Additionally, it is essential to comprehend the regulatory environment as a whole. Sometimes, the policy purpose can be discovered in the regulation itself, in higher-level legislation, or in complementary legislation when it was accepted.

Many policies are not implemented due to market failures, as opposed to social or other factors. If other policies in the sector seek the same objective, it is essential to uncover any possible connections between them and the policies at hand. This factor should be considered when constructing alternatives. Frequently, anticompetitive measures are motivated by powerful economic and political interests. Currently, businesses in the industry may attempt to exploit the regulatory process to protect themselves from rising competition. When there is more competition, it is probable that such efforts will result in a loss of profit. Considering the significance of the interests of existing market participants, it is essential to comprehend why anti-competitive rules exist.

In identifying the objectives to be sought by the Regulation, the critical aspect of this solution is that they are not defined in any way, so that less restrictive techniques are rejected unnecessarily in order to reach the same overarching objective. This can occur when the stated aims determine the technique that will be used to attain the primary objective, rather than allowing for the consideration of all choices.

A pollutant such as sulphur dioxide, for instance, may originate from multiple sources. Identification of the precise regulatory factors that produce competitive concerns. The next step is to identify the nature of the competition issues produced by the proposed policy and whether or not they are required to achieve the target. This is possible using a checklist. Also required is the identification of particular policy features or clauses that pose competition issues. The question is whether these characteristics or clauses are essential to achieving the goal or whether they may be adjusted to diminish or eliminate their anticompetitive consequences. This procedure enables the development of alternatives that help achieve the same objective as the policy in question, without distorting or less distorting competition.

The alternatives available may depend on the technical aspects of the regulated subject. The sorts of technical competence required for the drafting of rules will vary depending on the proposed regulation. The ministry or government agency managing the regulation may possess technical expertise. Occasionally, this expertise can be prejudiced in favor of the prevailing regulatory regime. Alternate sources of technical expertise may exist outside the ministry, such as inside the academic community or abroad, if it turns out that country-based specialists are biased in one direction or another. Companies may have relevant expertise, but they may also have a bias in favor of the rules they believe protect them. Potential start-ups, which are more difficult to launch due to legislation, may be less biased in blaming competition constraints than established businesses. Possible conclusions can be offered to technical experts and existing interest groups at an early stage before the recommendation is finalized, and consultation can be ensured prior to the introduction of a new law. Not only can evaluators request feedback in paper, but also at meetings; face-to-face dialogue is frequently highly productive. To acquire the most valuable expert opinion, the assessors may host a brief lecture for experts on competition evaluation and the checklist. Occasionally, specialists will be able to impose competition limits when it is difficult for non-experts to extract them from the applicable regulations.

To establish alternatives, it is crucial to evaluate not only the regulation at hand, but also the network of relevant rules, including general regulations, which have an impact on the market in question.

When analyzing the proposed rule or providing alternatives, it is essential to consider how business conditions have evolved since the last time the policy was implemented. Any initial restriction could be reevaluated if market conditions change. Consideration may be given to the necessity of a more stringent rule, such as in the case of keeping the current regulation or repealing it entirely.

The purpose of the competition assessment review is to select a policy alternative that achieves the considered objective with the least amount of competition distortion possible. If the checklist indicates that the proposed policy is likely to distort competition, it must be determined whether the same purpose can be attained in a less distorting method. This includes assessing all other possible policy options targeted at attaining a less distorting purpose and possible ways to adapt the proposed measure to reduce its impact on competition while still pursuing the policy objective. Identification of potential policy alternatives is a fact-based process that frequently necessitates a comprehensive understanding of the subject and much experience in the sector.

When the circumstances are analogous, experience in other jurisdictions can often be helpful in establishing alternatives. In this manner, intriguing solutions can be developed in consultation with stakeholders, who have a thorough understanding of the sectors and the options that can and cannot be realized. In the majority of instances, however, these examples indicate less stringent alternatives that may be substituted for stricter ones.

External effects are the costs or advantages of a product in terms of the environment, economy, health, and safety that are not represented in its price or price tag (Ritter *et al.*, 2019; Willems & De Corte, 2008; Yang *et al.*, 2019). Consequently, it is doubtful that the purchaser will accurately evaluate the external impact. If a product or activity incurs external expenses, they will tend to be excessive since not all costs are represented in its market price or return. If the product generates external benefits, it will typically not be sold since its benefits do not represent its price or return on the market.

Regulating the quantity, price, or qualities of the things or activities that produce the outside is one strategy to attempt to remedy their exterior consequences. Use of general economic incentives such as subsidies, taxes, or fees to internalize the externalities of these products at their market price is an alternate method. This strategy can harness competitive market forces to identify effective prices, volumes, and product qualities, if feasible and provided it does not cause unreasonable distortion among enterprises. By providing emission permits and allowing these rights to be sold, for instance, the government can introduce hitherto nonexistent market solutions.

Consumer protection is frequently invoked as a justification for mandating certain product attributes (Maravillo *et al.*, 2019). Occasionally, it may be sufficient information, such as with fat labels on food products. Some customers may be more risk-averse than others, and it is not always the government's responsibility to prevent this, but the government can give consumers with information to help them make informed decisions.

In many markets, door-to-door and direct consumer sales are prevalent methods (Yang *et al.*, 2019). However, their use, particularly in freshly deregulated markets, frequently generates complaints or worries that many consumers purchase items based on deceptive or inadequate door-to-door or end-to-end information. One solution would be to prohibit door-to-door or direct sales.

In order to offer consumers with the knowledge they need to make informed product decisions, an alternate method is to establish door-to-door requirements or to guide vendors. Another solution would be to mandate that contracts contain discount clauses that allow consumers to reconsider their purchase decisions. A maximum contract duration or prohibition on automatic renewal can protect vulnerable or misinformed users. Such approaches can help to preserve the advantages of door-to-door and direct sales while ensuring that consumers are adequately informed.

As an alternative to advertising prohibitions, advertising content control can be used to reduce detrimental components of advertising while preserving beneficial aspects (Niu *et al.*, 2012). For instance, offering a product with a decreased price relative to a previous or recommended pricing may be deceptive. An alternative to restricting price discounts is enforcing laws to limit the marketing of false discounts (e.g., a corporation raises the price of a product from € 20 to € 40, and then advertises a product with a 50% discount the following day).

As a result of unfair or inappropriate competition, aggressive or creative business activities frequently generate complaints necessitating remedial legislation (Brooks & Lesieutre, 2019). For instance, price ceilings are frequently established to safeguard vulnerable enterprises against excessively low competition prices. As an alternative to regulation, competition law provides a fundamentally effective framework for prohibiting business actions that are likely to harm competition and customers, while allowing such behaviors where they encourage competition, innovation, and consumer benefits.

For instance, low-price methods can only be predatory or create significant competition issues under specific conditions. Instead of curbing abusive company practices, price limitations can discourage consumers from taking advantage of reduced pricing.

Although mandatory standards require that all relevant products comply with minimum performance, reliability, or other standards, voluntary standards, if feasible, can be a way for suppliers to inform them that some of their products meet minimum standards while allowing them to continue providing other products that do not meet the standards in cases where some consumers prefer such products (OECD, 2017a, 2017b, 2017c). Compared to legislation, voluntary company standards may be a less restrictive approach of addressing consumer-related market challenges. Instead of mandating that all businesses adopt the same business standards and procedures, voluntary codes can provide information to less-informed or more-interested consumers, allowing them to select superior suppliers.

The weight of legal scrutiny and filing requirements can be disproportionately difficult for small enterprises, causing them to stop or cease operations, thereby impeding their ability to enter the market and perhaps reducing competition. To ensure that these rivals can continue or become operational when they are otherwise effective, less severe regulatory oversight or filing requirements may be necessary.

Always include a “do nothing” option as a standard for evaluating options in a set of alternatives. There may be many or few options; it is not required to have numerous options if all potential solutions are investigated. There may also be instances in which viable alternatives cannot be identified, given that those portions of the policy that distort competition are crucial to achieving the goal. However, before arriving at this conclusion, all viable options must be thoroughly evaluated.

Regulations can affect the conduct of suppliers not just by affecting their ability to engage in negotiations, but also by modifying their incentive to act as strong rivals. Regulations that encourage coordination between suppliers or decrease customers’ inclination, capacity, or motivation to transfer suppliers are primarily responsible for suppliers' diminished ability to compete in negotiations. Profit or market share thresholds that restrict potential rewards on competition are other factors. By raising the proportion of suppliers' output and price information or by removing competition law from the industry or branch, cartel conduct can more readily lead to self-regulation or co-regulation.

In negotiations, the repercussions of greater competition frequently influence sectors close to those in which competition is intense. Specifically, robust rivalry in upstream industries can "boost" productivity and employment in downstream sectors and the economy as a whole. This is largely due to competition, which improves distribution efficiency by allowing more efficient firms to enter the market and take market share from less efficient firms. Therefore, legislation or anticompetitive market entry and expansion practices can be particularly detrimental to economic progress. In addition to enhancing enterprises' productivity, competition appears to result in better-managed businesses.

In practice, the majority of decisions are qualitative, as opposed to quantitative assessments of alternatives. Relevant quantitative comparison data are not always accessible, and even when they are, analysis may be impossible. It is conceivable for extremely significant competitive impacts to be practically quantifiable. Changes in the conditions of competition, for instance, may impact the incentives to innovate and develop new products. However, it is extremely difficult to assess an innovation's increased or diminished impact. A qualitative analysis combines evidence and logic to justify which options are superior.

Analyzing reform alternatives qualitatively is an example of critical thinking. Qualitative analysis has the advantages of being widely understood, using less data, being as quick as feasible, and finally being applicable. However, qualitative analysis does not assess the value of expanding competition, thus missing rules may be one of the primary pro-competitive justifications.

Quantitative analysis entails the judicious and thorough use of numbers to determine the relative benefits of various alternatives. Despite the fact that quantitative analysis may need less comparison of answers, the methodologies employed may require more technical expertise than qualitative research, and data must be readily available. For highly significant or disputed subjects, quantitative analysis is preferred wherever possible. For instance, quantitative analysis can provide estimates of the advantages of social reform, such as how much less customers would spend for products after the reform or how many new jobs will be generated. In many instances, quantitative analysis cannot be undertaken due to a lack of available data or sufficient time for comparisons. In addition, it may be challenging or impossible to evaluate the user value of product diversification and increased service. Thus, while quantitative analysis may aid in the selection of pro-competitive options, it is frequently invalidated by qualitative evidence.

Negotiation strategy: market definition's importance

The level of market competition influences the equilibrium of market actors' bargaining positions. This frequently has negative repercussions for both buyers and sellers. More competition creates prospects for the growth of international business since, with more market participants, more business options emerge, thereby mitigating the detrimental effect of distorted competition on the balance of negotiating power of international business negotiators. The research explores the potential use of Nash equilibrium to the formulation of negotiation techniques in search of the optimal result function.

Widespread usage of the market definition as an analytical framework for analyzing and evaluating competition issues that have an impact on the formulation of negotiating strategy. The relevant market should be characterized such that the company's competitive restrictions, i.e. potential replacements in the demand and supply regions, are captured as precisely as feasible. Typically, the relevant market is established using a hypothetical monopoly test (also known as the SSNIP test), in which the "market" encompasses all items and places where the hypothetical profit monopoly achieves a minor but considerable price increase (Kaplow, 2018; OECD, 2012; Ghosal & Tonin, 2018).

The market definition provides multiple alternatives for defining the market's degree of competition, which is crucial for formulating negotiation strategy. The primary objective of market definition is to evaluate the existence, emergence, or consolidation of market power by characterizing the dynamics of market power metrics. Market power is the capacity of an organization to sustain a price above the long-term competitive price level (OECD, 2012; Liu *et al.,* 2018; Schlosser, 2017; Kaplow, 2018; Kumar, 2018; Yasui and Haraguchi, 2018; Chen & Tanaka, 2018; Symeonidis, 2018, Uchiyama, 2018, Gámez *et al.*, 2018). The market shares of the concerned companies are indicative of their market power, which must be evaluated prior to the formulation of negotiating strategy.

The defining of a market helps the identification of pertinent rivals and is useful for assessing risk associated with potential coordinated effects and mergers. In addition to determining the breadth and coverage of competition, it is also necessary to investigate other significant competition concerns, such as the research of potential market entrance obstacles. This test provides a consistent conceptual framework for defining the relevant market, even in the lack of sufficient data for a hypothetical monopolistic test.

The significance of market definition extends beyond its role in analyzing competition issues; the idea is also utilized as a basis for computing fines to quantify the impact of intra-EU trade and as a procedural model for cross-cutting coverage (Schlosser, 2017; OECD, 2012). However, market definition is a challenging process, and its applicability in some instances may be contested (Kumar, 2018; OECD, 2012). Even precisely computed market shares and market concentration in particular markets may be of limited significance. Determining the market strength of enterprises and the potential impact of competition might overestimate or underestimate market shares and concentrations in various types of marketplaces.

In differentiated product markets, for instance, the intensity of rivalry and product substitution is a more significant indicator of market strength than market share when evaluating the effect of a merger. Similarly, competition between market participants is a more informative idea in bidding or auction markets. Due to indirect network effects, it is difficult to apply market definition to bilateral markets that incorporate platforms serving individual user groups. This is also true for industries undergoing fast innovation, as defined market borders may be unstable and lead to quick shifts in market shares (Symeonidis, 2018; Schlosser, 2017; OECD, 2012).

In the case of monopolization or misuse of a dominating position, market share cannot be a particularly reliable indicator of market strength if the company has already drastically raised prices above the level of competition (Kaplow, 2018; OECD, 2012). In such instances of misuse of a dominating position, a comprehensive definition of the market is challenging since the uncontrollable opposite price must be employed to account for market uncertainty. With present prices, the market will be defined too broadly, making it impossible to identify circumstances in which companies might use their market dominance. In light of these particular market definition flaws, new measures have been created (Kumar, 2018; OECD, 2012).

The initial plan was to evaluate mergers using price pressure indices and other instruments. For monopolization or abuse of dominant cases, direct effects of anticompetitive behaviors or other persuasive proof of abuse was suggested. As the first representation of merger analysis, price pressure indices have lately been established, particularly for differentiated product marketplaces. In the event of expansion, the pricing pressure index (UPP) focuses on the incentive for the merged business to raise prices after the merger and is computed using the referral ratio and profit margins prior to the merger. The UPP also considers the merger’s productivity gains, which lessens the motivation to increase prices through standard data (Symeonidis, 2018; Kumar, 2018; OECD, 2012). The UPP does not, however, provide performance and size projections for price hikes. The global overall pricing pressure index for development (GUPPI) is comparable to the UPP, but does not take its efficacy into consideration (Kumar, 2018; OECD, 2012). The pricing indices can be used with the demand function to quantify the price level after the merger; however, the results are very sensitive to the specified demand function’s shape and may be erroneous. The compensatory marginal cost reduction approach (CMCRs) is intended to eliminate the need to define the demand curve by estimating the marginal cost reduction required to maintain the pre-transaction pricing. However, CMCR is designed for price-competitive marketplaces, and efficiency calculations are limited to cost-reduction analyses (Symeonidis, 2018; OECD, 2012). Other limitations on pricing pressure indices stem from the fact that they do not account for potential supply dynamics, targeted metrics, and margin measurement issues.

Taking into mind operating limits imposed by competition authorities, it is difficult to collect trustworthy and accurate information on targeting indicators, as evidenced by remarks from France and Korea. Nonetheless, the limited empirical evidence implies that pricing pressure indices are effective (Kumar, 2018; Schlosser, 2017; OECD, 2012). In addition to price pressure indices, and particularly under conditions of high competition, other market defining instruments may be utilized. Due to the difficulty of data needs and complexity of application, simplified versions of familiarization simulation models are typically utilized for the initial evaluation. Another recently established method for evaluating potential alternatives is a comparison of pricing and cost factors between the two items (Kaplow, 2018; OECD, 2012). In circumstances of monopoly and abuse of a dominant position, it has been advocated to circumvent the definition of the relevant market and instead create a dominating position based on the direct consequence of the disputed activity. Although new technologies have been developed to minimize the gaps in market definitions, there are still numerous markets, such as those with quantitative competition, where the best available indicator is used to determine market share. If evaluations are used in situations for which they were not intended, new instruments may provide unreliable and possibly unsuitable outcomes (Kaplow, 2018; OECD, 2012). The ability to introduce new tools for this purpose varies by jurisdiction and depends on the sort of law and executive structure in place (Symeonidis, 2018; Kumar, 2018; OECD, 2012).

The market is defined in terms of legal certainty. New initiatives can enhance the justice component. In jurisdictions where the concept of market definition is deeply ingrained in competition law, the application of additional or alternative measures may be more complicated, as it is necessary to amend or repeal legislation in order to abandon market definition, unlike in jurisdictions that place a greater emphasis on market power (Kumar, 2018; OECD, 2012). In the first instance, “relevant market” may be defined in legislation, including basic sources of law and competition law rules. Its definition dictates its application procedure (Schlosser, 2017; OECD, 2012). Even if there is no legal necessity, the courts can compel the determination of relevant market definition case law (OECD, 2012). For instance, if the law must prove a dominant position, direct evidence of harm prior to analyzing anticompetitive conduct cannot be an adequate substitute for market definition. Joint courts may be more likely to establish new precedents than civil law systems based on the interpretation of the law.

As competition authorities typically begin to develop new instruments, the breadth of judicial review is also crucial. However, the practice of competition authorities may be voluntary, and competition authorities and courts may have distinct practices (Kaplow, 2018; OECD, 2012). If the requirements for judicial review of market definition are limited, as in the case of the European Union, judgments can be better understood (OECD, 2012). The legal ramifications of withdrawing from the market definition in order to construct negotiation methods where there may be greater uncertainty regarding the criteria that will regulate competition concerns and the evaluation of their outcomes (OECD, 2012).

The definition of the market is utilized in nearly all jurisdictions and has been so for quite some time. As market definition takes precedence, market players can conduct more precise self-evaluations if the market does not undergo rapid changes and if its definition is useful (Kaplow, 2018; OECD, 2012). In contrast, the recently produced metrics are specialized and cannot be properly matured, tested, and empirically founded on strong legal concepts; a similar argument has led to the market definition being criticized in a similar fashion (Symeonidis, 2018; Kaplow, 2018; OECD, 2012). The availability of several methods enables competition authorities to select the best appropriate instrument in a given circumstance, but this freedom of choice is also a source of ambiguity, particularly when different methods generate contradictory results (Kumar, 2018; OECD, 2012). Increasing numbers of countries are reevaluating the role and significance of market definition and implementing new techniques to address its limits.

In some countries, it is underlined that market definition is not the most important objective, that it should not be the first step in any competition study, and that it should not be used in all situations

(Schlosser, 2017; OECD, 2012). Rather of discarding the market definition, the majority of jurisdictions combine it with supplementary methods. While market definition is usually regarded as a beneficial strategy in all countries, a growing number of public authorities are deemphasizing its significance and introducing different ways where market definition is challenging. In this regard, the BIAC report emphasizes the need for international practice compatibility in order to limit the risk of mismatches in the evaluation of cross-border mergers and other cross-border commercial transactions (Kaplow, 2018; OECD, 2012). In several jurisdictions, competition authorities have already implemented new measures to augment or alter the definition of the market (Kaplow, 2018; OECD, 2012).

In 2010, the US Horizontal Merger Guidelines stated that market definition is only one of many available damage assessment tools, alongside more sophisticated economic instruments that are not based on the definition of a particular market for competition dynamics, and emphasized that the analysis of competition's impact must not begin with market definition. In addition, these new standards permit the inclusion of direct evidence of anti-competitive actions and provide a comprehensive definition of the permitted categories of evidence.

In the United Kingdom, the standards for the evaluation of concentrations reflect the shift from the definition of the relevant market to the evaluation of competition intensity (Kumar, 2018; OECD, 2012). The application of new procedures in both the United Kingdom and the United States has produced a mixed image, which in certain instances raises worries over new measures.

Several other national competition agencies are also examining an increasing number of new approaches and measures; for instance, the merger guidelines in Ireland are presently being reviewed. When analyzing competitive effects in practically every jurisdiction, a variety of additional significant factors, such as time zones or market entry hurdles, development barriers, etc. are considered (Kaplow, 2018; OECD, 2012). Typically, competition authorities employ new methods to supplement market definition rather than to replace it (Schlosser, 2017; Symeonidis, 2018; OECD, 2012). This additionality can be bolstered if the applied methodology and data requirements for new instruments are comparable to those pertaining to the market definition for price pressure indices. Many competition authorities continue to struggle with the clarity of procedures and technical solutions. In addition, additional study is required to develop new instruments to enhance their reliability and the suitability of performance measurement relative to the market defining indication. Effective adaption of new tools may also demand skills and resources that competition authorities and experts lack at present. In order to resolve this issue, the competition authority, such as Norway, collaborated with the university to acquire experience in implementing new measures and established an internal organization to share information about these new techniques (OECD, 2012). Additionally, courts are becoming increasingly conscious of market definition’s limitations (Kaplow, 2018; OECD, 2012). It should be emphasized that the Court of Justice of the European Union’s recent judgements represent a transition to a less formal approach, which was prevalent in the early 1990s. A market is defined by its limiting practices. In the United States, courts occasionally use direct damage evidence to evaluate the collaboration of competitors. Nonetheless, market definition is one of the most significant analytical tools for analyzing and evaluating the competitive limitations faced by organizations and measuring the influence of these restrictions on their competitive behavior (Kaplow, 2018; OECD, 2012). The individual market should be defined by competitive constraints: capturing as closely as possible the equilibrium between demand and supply. Typically, the relevant market is identified by a hypothetical monopoly test, according to which the “market” encompasses all products and places where the hypothetical maximum profit of the merchant has negligible effect on price rises. Market definition aids in determining the level of market rivalry. The primary objective of market definition is to evaluate the existence of market power, as well as the market’s capacity to produce or strengthen it. This is the company’s ability to maintain a higher pricing in the face of long-term competition. The market share of a specific company provides vital insight into its market dominance.

In addition to facilitating the identification of relevant competitors, the market definition is important for analyzing the possible exposure risk of business entities. In addition, other relevant competition issues, such as market access impediments, can be used to address competition concerns (Schlosser, 2017; OECD, 2012). Even when there is insufficient information to conduct a hypothetical monopolistic test, this test might serve as a conceptual foundation for defining the relevant market. This notion is used as a basis for computing fines in order to evaluate the impact on commerce between EU Member States, which serves as a model for other legislative processes.

However, market definition is a challenging undertaking, and its legitimacy may be questioned in some instances. Even when precisely computed, market concentration and market share are limited in particular markets. In markets, the influence of enterprises on the market and the potential impact of competition may be overestimated or underweighted by its constituents and concentration metrics.

For instance, the intensity of competition and product substitution is a more significant measure of market strength than market share when evaluating the impact of a merger in diverse product markets. Similarly, competition between competitors is more instructive for mergers in bidding or auction marketplaces. Thirdly, it is difficult to apply the market definition to bilateral markets, which comprise platforms serving specific user groups with indirect network effects. Finally, industries characterized by rapid innovation and well-defined market borders may be unstable and susceptible to quick shifts in market share. In cases of monopoly or misuse of a dominating position, the company's current market share may not be a credible reflection of its market power if it has already far surpassed the competitive level (Kumar, 2018; OECD, 2012).

As the initial tool for merger analysis, price indices have just been produced. This technique is crucial for analyzing markets for distinct products. However, price indexes do not account for the competitive impact's extent. The increase in pricing pressures in the index study focuses on the merged entity's motivations to raise prices after the merger and is derived using the pre-merger referral ratio and profit margin levels. Also considered is the merger's effect on productivity, which lessens the motivation to increase prices through standard deductions. However, neither efficiency nor price increases are taken into account.

Tools for analyzing differentiated product marketplaces are examined as part of the research approach. On the basis of an analysis, the competitive issues that influence the design of the negotiation strategy are appraised. In formal cases under examination by competition authorities, market definition is given with market competition evaluation (Symeonidis, 2018; Kumar, 2018; OECD, 2016b). But precise application thresholds for market definitions are ambiguous since it is difficult to determine when market definitions should serve as the basis for judging competition (Kaplow, 2018; OECD, 2016b).

All of the discussed factors are relevant to the definition of the geographic market, but the majority of them may also be associated with competitive assessment. Typically, competition authorities decide whether to evaluate evidence based on a geographic market definition or a competitive assessment, or to evaluate either of these parameters. A hypothetical monopolistic test of the definition of a geographic market is typically straightforward, and this may necessitate a diverse variety of pertinent information (Kaplow, 2018; OECD, 2016b).

Defining the geographic market is a crucial and difficult undertaking, particularly in terms of establishing bargaining techniques. This is the practice of concentrating on markets that may extend beyond national borders. It also analyzes the conformity of the geographic market definition with competitive evaluation and the tendency of some authorities to abandon the definition when there is no competition-related issue (OECD, 2016b). In evaluating the geographical breadth of markets, it is necessary to take into consideration a variety of facts. Due to significant price disparities in all nations, there may be heterogeneity in the conditions of competition, resulting in a narrower definition of the market; nevertheless, pricing analysis can also lead to erroneous conclusions. It may also be important to take import flows and their evolutional dynamics into account. Nonetheless, this method can be speculative, and some competition authorities are skeptical of it. Due to the intricacy of utilizing pricing and import data, competition authorities and their experts should also carefully analyze the supplementary evidence. Despite being inextricable from product features, product attributes, transit costs, regulatory and trade barriers, consumer preferences and market dynamics play a significant impact in determining geographic market volume (Kumar, 2018; OECD, 2016b).

In the next market definition examinations, new obstacles may emerge. When evaluating mergers, different governments take different approaches to foreign competition. Despite the fact that these discrepancies do not appear to result in fundamentally different decisions in different jurisdictions, they may cause some confusion. The definition of a geographical market that is excessively broad (or superfluous) may have an impact on future interconnections and reduce the effectiveness of competition remedies. This risk is amplified by present market conditions, which may indicate that global market definitions (or at least global market declarations from reporting countries) are expanding. Therefore, the authorities of various nations must be cautious and utilize all available facts when defining international geographic markets, including through cooperation. Merger reviews or the definition of the geographic market for antitrust proceedings may be a contentious matter (Kaplow, 2018; OECD, 2016b). As with the definition of the product market, the parties may be motivated to provide a geographical definition that minimizes concerns about concentration or other effects of competitive behavior (often by defining the market as widely as possible). This might lead to problems with competition authorities, especially if the market is likely to extend beyond national borders. The competition authorities must carefully monitor decision-making, taking into account the broad market definition for future cases relating to the same market; for instance, market definition as "global" as opposed to "regional" or "continental" or others can significantly impact future merger approvals within and outside the competition authorities' jurisdiction (Kaplow, 2018; OECD, 2016b). Competition authorities and specialists must establish competition rules in order to analyze the competitive consequences of mergers or behavioral strength. The OECD has provided the following summary of the market definition procedure (Symeonidis, 2018; OECD, 2016b):

"The market definition serves multiple purposes in establishing the level of market competition. The primary objective of market definition is to evaluate the existence, development, or strengthening of market forces, which is defined as the company's capacity to sustain a higher price than its long-term competitiveness. The market share of a company demonstrates its market dominance. In addition to identifying significant competitors, market definition is useful for assessing the potential harmonized effects of merger risk. In addition, other significant competition issues, such as potential entrance obstacles, might be considered while examining the setting area of competition.

The market is defined by both the product in question and its geographic region (OECD, 2016b). Competition arena affected by the merger may be geographically constrained if geography restricts the willingness or ability of some customers to replace specific products or the desire of some suppliers to service some customers. This might have repercussions for both suppliers and customers. The recommendations suggest that geographic marketplaces are often based on the location of suppliers, unless the suppliers have the ability to discriminate against consumers. In turn, the European Commission (EC) has emphasized the role of consumers, emphasizing that "the market definition is fundamentally a customer-oriented task: to determine which alternative suppliers are relevant to clients in a given area". If customers cannot rely on providers situated outside of this region, the other suppliers do not belong to the relevant geographic market" (Kaplow, 2018; OECD, 2016b).

The hypothetical monopolistic test is the most popular instrument for defining markets (Symeonidis, 2018; OECD, 2016b). This test normally defines a geographic market as the smallest area in which a hypothetical monopolist may profitably set a tiny but continuous price rise over the competitive price. Due to:

– Customers' inability (or unwillingness) to travel to alternative stores outside the region;

– Businesses' inability to supply customers outside the region, the narrowest area where a single business entity could profitably increase prices by 5 to 10% for their customers would result in the most distant territory.

In certain high-tech industries with only a few manufacturers and complicated users globally, the geographic market might be described as global since a hypothetical monopolist in a narrower geography could be unprofitable due to the availability of foreign substitutes (Kumar, 2018; OECD, 2016b).

The competition authorities assessing instances in which there are no competition-related issues, without considering the geographic breadth of the market, and the courts frequently utilize an indicator of openness of geographic market definition (Symeonidis, 2018; OECD, 2016b). Keeping the geographic market definition open can save time and money for competition authorities when they analyze mergers without analyzing the geographic breadth of the market when there is no competition issue. Additionally, it precludes authorities from pursuing a superfluous market definition that could effect future cases based on a cursory study (Kaplow, 2018; OECD, 2016b). However, this strategy is not always the best option; as stated previously, it is confined to situations where no competition-related issues are identified (OECD, 2016b). Without justifying the definition of the global market in contentious situations involving bans or rights defense strategies, these cases may be challenged in court, and the acts of competition authorities may be connected with a lack of clarity in assessing the situation (Kaplow, 2018; OECD, 2016b). Moreover, this strategy can be criticized for its perceived arbitrariness and ambiguity. If a prospective competitive pressure is characterized by a change in demand (and thus a component of the market definition) or a potential entry barrier (and thus not a market share), it should not be subject to General competitive evaluation.

The analytical perspective of the geographic market definition is comparable to that of the product market definition, however the relevant evidence of the geographic market is rather distinct (Symeonidis, 2018; OECD, 2016b). There is no reason to expect a dominating position to be evaluated in cases of abuse, such as by incorporating a new approach to the definition of the regional market, except that it has steadfastly refused to adopt the impact-based approach as stated in the OECD. It is necessary to address the complaint that the definition of geographic markets in abuse cases incorrectly takes into consideration alleged anticompetitive behavior in the affected area, but not market competitiveness (Kaplow, 2018; OECD, 2016b). However, the geographic area where anti-competitive behavior occurs can occasionally serve as an excellent signal for defining the territorial market limits.

Examining and analyzing price information is the initial step in building a geographic market (OECD, 2016b) For instance, price correlation analysis is sometimes used to develop preliminary market descriptions prior to the quantitative implementation of a comprehensive hypothetical monopoly test (if such implementation is possible). Justification of this strategy is crucial since (in accordance with EC directives) identical conditions of competition are applied to existing commodities on the same geographic market, resulting in comparable price adjustments. In terms of a hypothetical monopoly test, products with high pricing may not exert competitive pressure on one another and would thus not be kept on the same market (Symeonidis, 2018; OECD, 2016b).

This obvious explanation conceals the challenges of drawing conclusions solely from pricing evidence (Symeonidis, 2018; OECD, 2016b). For instance, pricing data may be valuable for event studies that assess the impact of price fluctuations on import flows or margins. However, the commercial viability of such natural experiments may be limited. In general, the low amount of data available to competition makes it difficult to do a thorough price study.

Before making strategically significant decisions, a company should prepare and execute a negotiation strategy. To estimate the available negotiating power, a detailed analysis of the interests and needs of the parties involved in the upcoming discussions is required, which would allow a better understanding of the goals of the opposing side of the negotiations. This is especially true in markets with skewed competition. Because gambling theory is a mathematical science that analyzes the interaction of things with their own aims, tools from this field can aid in this endeavor.

John Nash has successfully summarized the min-max theorem and confirmed that each competing game has at least one equilibrium point for both pure and mixed strategies. John Nash defined the equilibrium of non-linear gaming in his 1951 scientific work, which is today known as the Nash equilibrium, and created several strategic games with this equilibrium (Madeikytė, 2011). Nash is most famous for his contributions to game theory. In mathematics, a game consists of two or more “players” who get prizes or punishments based on the actions of all participants. Some games are said to as zero–sum, meaning that one player’s gain is another player’s loss.

In 1950, the theorem demonstrating the existence of Nash equilibrium in all n non-realistic gambling games was announced. In reality, the Nash equilibrium is commonly used to optimize networks, manufacturing planning, and elsewhere (Madeikytė, 2011). John Nash gave his name to these equilibrium points, which are currently the most often employed idea in gambling theory. At age 21, he discovered a discovery that earned him the Nobel Prize in Economics in 1994 (along with Harsanyi and Selten).

The work of John Nash was applied to non-cooperative games. In these circumstances, players may alter their approach unilaterally to improve (or harm) their own outcome without impacting the outcomes of the other players. Nash observed that any such game has a strategy, now known as the Nash equilibrium, in which any unilateral strategy modification by a player results in a poorer outcome for that player. Many international relations scenarios can be treated as competitive games. Nash equilibrium assists negotiators in determining how competing enterprises set their prices, how governments can structure auctions to extract the most from bidders, and how to explain why groups sometimes make self-defeating actions.

In the definition of the market, analytic methods are commonly employed to analyze and assess the competition issues that have an impact on the formulation of the negotiation strategy. The relevant market should be characterized so that the company’s competitive restrictions, including demand and supply side substitutes, are reflected as precisely as feasible.

In terms of establishing negotiation techniques, defining the regional market is a crucial and hard endeavor. The technique of concentrating on markets that may extend beyond national borders is outlined. There is also discussion regarding the congruence between the geographic market definition and the competitive evaluation, as well as the tendency of some authorities to leave the definition open when there are no competition issues.

When evaluating the geographical extent of the markets, a wide range of facts must be taken into account. Due to the substantial price disparity in all nations, heterogeneity of competitive conditions may arise, resulting in a tighter market definition and potentially misleading conclusions from price analysis. Regardless of the geographic breadth of the market, competition authorities can save time and money by retaining the open geographic market definition when reviewing mergers in which there is no competition problem. Additionally, it precludes authorities from pursuing a superfluous market definition that could influence future cases based on a superficial study.

Sometimes, the geographic area where anticompetitive behavior occurs might be a reliable indicator of anticompetitive behavior occurring beyond the geographic market. The first step in building a global market is the evaluation and analysis of pricing data. For instance, a price correlation analysis is frequently used to prepare preliminary market descriptions against the quantification of a totally hypothetical monopoly test (if this is feasible). The rationale behind this strategy is that items in the same geographic market are exposed to the same competitive conditions and price fluctuations. High-priced products may not exert competitive pressure on one another and, for the purposes of a hypothetical monopoly test, they would not be kept on the same market.

Examined were options for adjusting the Nash equilibrium in preparation for negotiating techniques that seek the optimal outcome. The findings will enable negotiators to create and implement more effective methods for commercial talks.

The search for equilibrium of negotiating powers in business negotiations under conditions of globalization (case of monopsony)

Business agreements face increased difficulties as a result of distorted market competitiveness. It changes the balance of negotiating powers between the parties involved. Such circumstances frequently result in bad outcomes for both buyers and sellers. Consequently, it creates additional opportunities for international business as a result of the emergence of other market participants in the relevant markets, which can provide additional alternatives for both buyers and sellers by reducing the negative impact on competition distortion and balancing the negotiating powers of the negotiating parties (Ewa Kiryluk-Dryjska, 2016; Jeanne Brett, Leigh Thompson, 2016; Magorzata Przybya-Kasperek, Alicja Wakulicz-

Deja, 2016). For the effective use of the potential of business negotiations – the negotiating power – it is essential to develop and implement an effective international business negotiation strategy, as well as to assess the negotiating powers of the parties involved and the essential components of their deviation from balance. When resolving the scientific problem, it is vital to ensure that the answers help to consider the balance of negotiating power among participants, allowing them to reach the balance and ensuring the most effective formulation and implementation of their negotiation strategy.

A increased number of vendors and providers provides the buyer with a greater selection of options and alternatives. In this situation, the buyer can benefit from competitive tension. However, the situation is entirely different when there is no competitive tension. One of the causes for the absence of competitive tension in the market is that there are insufficient providers to produce a free and open competition, as in the case of a monopoly. Therefore, market distortion might be defined as the absence of free and open competition. Free competition indicates that market participants are competing against one another rather than combining to form and maintain a cartel. Open competition denotes that market entry barriers are sufficiently low, hence reducing the profits of established competitors, as new entrants would otherwise attempt to sell at lower margins, which would be primarily beneficial for customers and so secure their sales.

There are two sorts of buyer power: market-based power (monopsony, oligopoly, monopoly) and bargaining power. If the buyer is able to drop the price below the level of market competition among suppliers, he has monopsony power. The bargaining strength exhibited by the buyer during communication and negotiations with suppliers determines their negotiating power. Monopsony power makes it easier to obtain a cheaper price than negotiation power. Only when the provider has market power that can be leveraged with negotiation power is negotiating power used. In each scenario, the effects of utilizing negotiating leverage are substantially different. In monopsony and oligopsony marketplaces, buyer power reduces sales volume and productivity in the supply market, which has a detrimental impact on the consumer market. The buyer’s negotiating leverage is mostly of a compensating character. It might enhance the market situation on the consumer market by increasing the volume of production on the supply market.

The significance of the study and the quality of the research. This study's significance has both theoretical and practical dimensions. The theoretical relevance relates to the evaluation and development of negotiating power among participants in international business negotiations, as well as the scientific search for measures to ensure their effectiveness and the creation of a scientifically-based, sustainable and effective negotiation power balancing system. Such a technology could increase the productivity of bargaining teams in distorted markets. The practical relevance relates to the challenges of organising business, the increasing purposefulness of recent developments, which manifests in an increasing number of alternative business solutions and the need to seek out new business partners, resulting in greater expediency of business transactions, their efficiency, and, ultimately, an increase in the competitiveness of business entities in the international business environment. Thus, the theoretical and practical significance of this research can be summed up by the necessity to identify and develop a scientific basis for measures used to balance the negotiating forces of commercial negotiation players. They should contribute to an objective evaluation of the negotiating powers and relationships between international business negotiation participants and their competitors, establishing and utilizing the negotiating powers of the negotiating team strategically and successfully. Taking into account the variables that distort market competition, these steps should ensure the successful formulation and implementation of an effective business negotiation strategy in the context of international business development and boost its competitiveness.

Monopsony power is the opposite of monopoly power: it is the buyer's market power as opposed to the seller's market power (Dassiou, Glycopantis, 2008; Matsudaira, 2014; Danziger, 2010; OECD, 2008; Bonanno, Lopez, 2012; Strobl, Walsh, 2007; Barr, Roy, 2008; Rotemberg, 2008; Brennan, 2011; Strobl, Walsh, 2016). Monopsony power is both directly and indirectly determinable. In circumstances of the former, it is decided by comparing the competitive market price with the price obtained by the buyer. The level of the current market prices, decided by competing enterprises, does not reflect the real purchase price. Meanwhile, the indirect monopsony power evaluation approach covers such criteria as the market, market segmentation, entrance obstacles and other important factors.

The buyer power is related to the method how purchasing firms may affect the trade connections with sellers and suppliers. The buyer power can appear both through monopsony power and through the buyer's negotiation powers. The difference between these two sorts of buyer power is dependent on the structure of their sources and the entirety of the measures.

A commercial entity is seen as having monopsony powers, when the share of its purchases in the market is reasonably high and when it may influence the price according to the sales volumes. The disparities in the utilization of the negotiation power manifest on the level of discounts gained. The negotiation power of the customer reflects his bargaining strength in relation with the provider. Both sorts of buyer power paves the way to the level of lower sales prices. In case of monopsony power this can be achieved by stressing smaller purchase volumes, when the talks involve expressing intensions to buy less (Brennan, 2011; Strobl, Walsh, 2016). (Brennan, 2011; Strobl, Walsh, 2016). The fundamental difference with the situation of monopsony power is that this instance includes dropping prices below the competitive level, whereas in case of bargaining power, the seller still operates on a competitive level (OECD, 2008; Bonanno, Lopez, 2012; Strobl, Walsh, 2016). Monopsony and oligopsony powers (assuming that there is no price discrimination) lead to market inefficiencies. As a rule, that is adverse both to direct sellers and suppliers, as well as further parts of the supply chain (Matsudaira, 2014; Danziger, 2010; OECD, 2008).

Monopsony power supply in the market distributes the profit from provider to buyer. Business entities having monopsony power behave as though they had higher marginal costs relative to organizations that do not hold monopsony power. This eventually increases the price for the end customer, even though the costs are truly lower. Owning market power in the supply market as well, monopsonists inflict even more damage than if it they wouldn't.

Customers employing negotiation power as a compensatory factor (for example, where their negotiating strength totally or partially compensates the market power of sellers) may raise the volume of output in the market and make the final consumers in the market better off. The amount to which customers can benefit from the negotiating power relies on the form of contracts with suppliers and the level of competition in the consumer market. Increased consumer competition and their extent result in this negotiating power winning higher discounts for a wholesale price and giving greater advantage to the customers (OECD, 2008; Bonanno, Lopez, 2012; Strobl, Walsh, 2007).

The investigation of monopsony power in practice demonstrates that it may be determined by available alternatives for the sellers, which determine the magnitude of the buyers' monopsony power. If finding alternative purchasers is easy, then their monopsony strength is restricted. Other sellers may be located in other geographical regions, be involved in different activities and have distinct market needs, yet their items may still be able to serve the same wants. Also, when searching for new markets, it is important to identify the presence of monopsony power in smaller geographic areas with a smaller number of products, where a hypothetical monopsonist could influence the price drop in that territory (Antaki, Kent, 2015; Petriwskyj *et al.*, 2015; Alavoine; Przybyła-Kasperek, Wakulicz-Deja, 2016; Schaerer *et al.*, 2016; Ghavami *et al.*, 2016; Rufo *et al.*, 2016; Jäger *et al.*, 2017).

When the number of buyers and sellers is small, negotiations between buyers and sellers (according to their capabilities) may also take place regarding the possible excess profit. The allocation of excess profit depends on the relative negotiating power. This excess profit is the objective of the buyers and sellers, thus motivating them to come into an agreement without looking for alternatives. The more efficiency buyers show in their negotiations, the more alternatives they have, resulting in fewer alternatives for the sellers and getting a larger share of the excess profit. Buyers' profit from transactions depends on their ability and willingness to look for alternative suppliers. Similarly, sellers' profit gained from transactions depends on their ability and willingness to look for other buyers. The essential factor influencing the negotiating power and showing that buyers have more alternatives than sellers is that buyers can easily switch suppliers without incurring significant additional costs (buyers act as consumer market intermediaries) (Matsudaira, 2014; Danziger, 2010; OECD, 2008; Bonanno, Lopez, 2012; Rotemberg, 2008; Brennan, 2011; Strobl, Walsh, 2016).

Monopsony power is influenced by the current suppliers' model. Suppliers' market models can be divided into Ricardian, Quasi or Monopoly models (Matsudaira, 2014; Danziger, 2010; OECD, 2008; Bonanno, Lopez, 2012; Strobl, Walsh, 2007; Barr, Roy, 2008; Rotemberg, 2008; Brennan, 2011; Strobl, Walsh, 2016):

1. The Ricardian model refers to suppliers using differentiated supply of raw materials. In this case, the monopsony power depends on the flexibility of supply. More flexibility means greater opportunity to use the monopsony power, which determines production output disruptions in the supply market and is harmful to the end users. In the supply market companies with monopsony powers tend to behave in a way as if they experienced more costs than companies without monopsony powers. Monopsonistic power in supply market harms both productivity of suppliers and consumers. Possessing monopsony powers makes it necessary to recognize, whether your seller has an alternative, which is what determines the monopsony power. Monopsony power is limited if the seller can easily find other buyers in the local market or other geographical areas, or customers who would use these products as substitutes.

2. The Quasi model refers to the difference between total revenues and short term expenditures. A monopsonist can use this in the short term. In the long term, any attempt to use suppliers' situation may encourage them not to conclude a deal: the suppliers would not be able to get a return on their investments. If suppliers' market is engaged in fair competition, monopsonists will not be able to use their monopsony power in the long term.

3. In case of Monopoly model, suppliers and buyers will be more inclined to maximise the total profit for both sides, rather than refuse to cooperate. The creation of compensatory power in case of Monopoly model may lead to smaller prices for the end users. However, if one of the participants withdraws, such a case could lead to a failure of the deal. This would encourage the buyer to look for other markets.

Oligopsony among buyers and high level of supply frequently results in Nash equilibrium. In cases of Nash equilibrium in procurement, all buyers define their product value according to the values determined by all buyers. Nash equilibrium will enable to exploit buyers' market power, which will depend on the product threshold value, the number of competing buyers and the flexibility of supply (Dassiou, Glycopantis, 2008; Matsudaira, 2014; Danziger, 2010).

Oligopsonic Nash equilibrium does not maximize customer profits, resulting in a need to coordinate purchases by exploiting the collective market power, increasing profits, reducing purchases and selling prices (OECD, 2008; Bonanno, Lopez, 2012).

Monopsonists can threaten to refuse their transactions thus seeking for more beneficial conditions. For example, proposing to purchase a greater quantity of goods for a price, corresponding to a significantly smaller amount. In such case suppliers merely cover their production costs, only ensuring the utilisation of their capacity (Strobl, Walsh, 2007; Barr, Roy, 2008; Rotemberg, 2008; Brennan, 2011; Strobl, Walsh, 2016).

We examined some aspects of distorted market competition in cases of monopsony and oligopsony. We also defined measures for reducing or eliminating their negative effect by taking advantage of the opportunities of international business negotiations. Further on it would be appropriate to examine the monopoly power of suppliers, ways to identify and assess them, as well as define the means to direct the balance of power towards the benefit of the buyer.

We examined aspects of distorted market competition in case of monopsony, which are significant for developing and implementing negotiating power in international business. One of the reasons for the lack of competitive tension in the market is an insufficient number of suppliers to create a free and open competition, such as in case of a monopoly. Therefore, we can refer to a distorted market as an absence of free and open competition. Free competition means that market participants are competing rather than cooperating with each other and forming cartel relations. Open competition denotes that market entry barriers are sufficiently low, hence reducing the profits of established competitors, as new entrants would otherwise attempt to sell at lower margins, which would be primarily beneficial for customers and so secure their sales.

The buyer power refers to how buyers or users can influence transaction terms with their suppliers. There are two types of power: monopsony power and bargaining power. If the buyer is able to drop the price below the level of market competition among suppliers, he has monopsony power. The bargaining strength exhibited by the buyer during communication and negotiations with suppliers determines their negotiating power. Lower price is achieved from monopsonic power, rather than negotiating power. Only when the provider has market power that can be leveraged with negotiation power is negotiating power used. In each scenario, the effects of utilizing negotiating leverage are substantially different. Monopsony and oligopsony powers decrease the volume of sales and productivity in supply market, which ultimately has a negative effect on the consumer market. The buyer's negotiating leverage is mostly of a compensating character. It increases the volume of production in supply market and can improve the market situation in the consumer market.

We also analysed measures, which help in situations of distorted market competition, reducing the negative impact on the balance of powers during international business negotiations. Some of the most important elements determining the balance of negotiating power include: market structure, market concentration and competition. Solving situations of distorted competition opens opportunities for international business, as the presence of other market participants can provide additional alternatives for reducing the negative impact of distorted competition on the balance of negotiating powers between negotiating parties. When the number of buyers and sellers is small, the negotiations may revolve regarding the possible excess profit between the buyer and the seller, according to their capacities. Excess profit distribution depends on the relative negotiating power. Being the goal of both buyers and sellers, excess profit encourages them to come to an agreement rather than seek for alternatives. Greater bargaining efficiency of the buyer opens him more possible alternatives, reducing the number of alternatives for the seller, thus allocating the greater share of the excess profit to the buyer. Buyers' transaction profit depends on their ability and willingness to look for alternative suppliers. Similarly, sellers' transaction profit depends on their ability and willingness to look for other buyers. The assessment of the negotiation powers of the negotiating parties is crucial for the development and implementation of an effective international business negotiation strategy in order to make the best use of the negotiation potential - the negotiating power.

The search for new suppliers can help expand the available alternatives, thus increasing buyers' negotiating power. Also, having more alternatives means expanding the existing market boundaries. This can be achieved by examining similar or related markets, which may become potential supplier markets. Sometimes other market participants find it quite difficult to switch to another market.

Therefore, buyers looking for potential cheaper suppliers from other markets could think of possible negotiating proposals, which would make it easier to convince potential future partners to cooperate in a new market: sharing experience, such as attaching project managers or sharing some of the technology during joint meetings; subsidising certain costs of entry, buying appropriate measures, or otherwise investing into mutually-beneficial cooperation; offering longer contracts; gradually increasing the volume of orders and their complexity, thus giving the supplier an opportunity to adapt their own technology for more complex work.

Buyers often find themselves in an awkward position, when they need their suppliers more than the suppliers need them. One may consider the possibility of closer cooperation with a monopoly enterprise, thus increasing one's dependence. This works in situations, where suppliers have a monopoly in several business areas, but not in all. Such measures can increase the available negotiating power. Of course, it is necessary to avoid situations, where one supplier can provide a full package of services. Therefore, it is important to divide the needed service into segments, creating more freedom of choosing from several suppliers, without giving all the negotiating powers to a single supplier. Or, on the contrary – a strategic move of the negotiations may include offering the supplier to sell more if they made a better offer.

Comparison of the possibilities of application of spectrum and gaming theories in modeling market economy negotiations

In market economy talks, negotiators are confronted with voluminous data regarding objective parameters, which determine the setting of the negotiations. However, subjective economic behavior, which is not usually measurable, is no less significant. In addition, existing models do not account for subjectivity as a crucial part of economic action. The evaluation and formation of bargaining power is particularly important for negotiations, in which it is necessary to synchronize the processes of interaction between participants of different cultures, taking into account the context of the negotiations, cultural differences, and aspects of conflict prevention. In order to make more effective use of bargaining power potential in market economy talks, it is necessary to evaluate these factors of internationalization. This emphasizes the necessity to seek out modeling approaches that emphasize cross-cultural compatibility, conflict reduction, and a deeper comprehension of the negotiating situation.

When modeling individual and market-level decision-making in the context of negotiation, it is crucial to comprehend and be able to analyze crucial facets of economic behavior. In light of this, the paper investigates the fundamental concepts of behavioral economics: the psychological value of monetary profit or loss and the roles of judging uncertainty. How each theory incorporates these principles: spectral betting and spectrum. The spectrum theory approach can be utilized to simulate the economy at both the individual and market level. This is particularly essential in international commercial talks, where subjective elements can be evaluated while modeling solutions and operations. In this paper, the application potential of spectrum theory in comparison to classical theory are investigated. It is proposed that spectrum theory be used to model decision making.

In economics, game theory is the standard paradigm for analyzing situations in which individuals are interdependent (Duffy *et al.*, 2011). For instance, in talks and on the market, where social issues are resolved, such as the sale or exchange of goods and services. The theory of economic conduct is an approach that utilizes psychological principles to widen the motivational foundation for economic activity by undermining assumptions of rationality. The difficulty of negotiations is mirrored in scenarios in which business subjects attempt to profit from potential market situations (Sun *et al.*, 2020; Chen, 2020). In situations where monetary profit and loss complement each other, the utility of such profit and loss may not necessarily cancel each other out, for instance, if one of the individuals avoids the loss. A high level of abstraction is a flaw of games based on theoretical negotiation models. It denotes the absence of numerous parts of discussions. Non-cooperative game theory leaves many communication aspects open, such as the ability to influence other players, bluff, and misrepresent their interests. There are divergent opinions regarding the amount to which negotiation communication is seen manipulative vs beneficial, open, and fair (Chen, 2020).

The negotiation models predict a high level of negotiation efficacy. The results of the negotiations are Pareto efficient, according to Coase's theorem, so long as there are no transaction costs and the agreement is completely formed. The creation and implementation of Rational Choice Theory represented a significant economic achievement (Chen, 2020). According to the rational choice theory, individuals are assumed to have preferences that satisfy the prerequisites for consistency of choice. It is a contentious opinion that traditional economic theory likewise implies that preference is attributed solely to the individual's material gain or loss from a transaction. In addition, the rational choice theory necessitates that assumptions be made regarding individuals' ideas regarding the option to select, the people they encounter, and the behaviour of others. The beliefs are created based on the current individual's information and the hunt for fresh, relevant information. A rational economic individual, based on his views, selects the alternative that maximizes his utility function's given choice, taking into consideration resource restrictions such as money and time (Duffy *et al.*, 2011). In traditional game theory, a zero-sum game is a game in which one player defeats another player while incurring a net loss of assets or rewards. The maximum number of players is unrestricted. There is derivatives, options, and futures that mirror wagers on future stock prices, and a profit is made when market prices deviate from predictions. The majority of real-world games can be summarized as follows: not all participants have access to the same information; for instance, the agent does not know the preferences of other players as well as they do. Consequently, such games are known as having incomplete or asymmetric information. The firm's recruitment process is an example of a static game with imperfect information, where each participant possesses a sort of information, namely its capabilities, about which neither the other players nor the firm have complete knowledge. The firm selects a small number of participants, then each player monitors his own kind but not that of other players, and finally all players decide their actions simultaneously based solely on his type. Therefore, the player's profit now depends on his actions and kind.

Information becomes crucial, if not the most significant resource (Duffy *et al.,* 2011; Sun *et al.,* 2020; Chen, 2020). Scientists have recently realized that information processing is a physical phenomenon and that information theory is inextricable from both applied and fundamental physics. The focus on more physical components of information processing opened fresh insights on computational, cryptographic, and communication techniques (Duffy *et al.,* 2011; Sun *et al.,* 2020; Chen, 2020). In many instances, the quantum description of a system is superior than the classical scenario. Spectrum theory is the quantum equivalent of game theory, which examines (rational) decision-making in conflict situations.

The objective of applying Game theory is to determine economic behavior, to find mathematically complete principles that would describe the rational behavior of participants, and to identify the main characteristics of their behavior (Danilov *et al.,* 2018; Piotrowski & Sadkowski, 2003; Moreira & Wichert, 2018; Orrell, 2020). This is especially important while negotiating in a market economy in order to select the most favorable option for a market participant. In classical theory, four fundamental concepts, or axioms, are provided. Suppose a participant has two games α and β with different potential gains. The axiom of completeness states that the participant has clearly defined preferences and can always choose between the two alternatives. The axiom of transitivity assumes that if a participant prefers alternative α over β, and alternative β over δ, then he prefers alternative α over δ. The interconnection axiom assumes that if a participant prefers the alternative to α rather than β, then the newly introduced unrelated alternative δ does not change that provision (Danilov *et al.,* 2018; Piotrowski & Sładkowski, 2003; Moreira & Wichert, 2018; Orrell, 2020).

The projected benefits of each alternative are described as the sum of all possible winnings when they are defined as coefficient. Suppose alternative α has two probable winnings: α_1 size with possibility P (α_1), and quantity α_2 with possibility P (α_2). Then probable winnings are:

$$U(\alpha) = P(\alpha_1)u(\alpha_1) + P(\alpha_2)u(\alpha_2) = P(\alpha_1)\,\alpha_1 + P(\alpha_2)\,\alpha_2 \quad (1.1)$$

Game β is more attractive if its expected utility satisfies U (β)> U (α).

Psychologists and economists have demonstrated that the theory of expected value does not encompass sequential cognitive experiences (Moreira *et al., 2020*; Haven & Khrennikov, 2017; Orrell, 2020; Yang & Zhang, 2019; Piotrowski & Sawkowski, 2002). Perspective Theory, which analyzes solutions when there is a risk, was one of the earliest attempts to modify the projected utility theory. This notion of expected usefulness has undergone two modifications. First, it was said that in this instance, the gains or losses relative to a given reference point are what are significant. Secondly, it has been said that the findings are evaluated using a nonlinear weighted uncertainty function as opposed to the probability itself.

The following formulas were derived using the value function v (x) and the uncertainty estimate function w (p):

$$v(x) = -2(-x)^{0.5} \; for \; x < 0 \quad (1.2)$$

$$v(x) = x^{0.5} \; for \; x \geq 0 \quad (1.3)$$

And

$$w(p) = \frac{p^{\gamma}}{(p^{\gamma} + (1-p)^{\gamma})^{1/\gamma}} \quad (1.4)$$

Where:

$$\gamma = 0.61$$

These graphics summarize a variety of cognitive phenomena fundamental to behavioral economics. For instance, losses and gains are experienced relative to a certain reference point, which varies depending on the situation. The majority of individuals do not desire to suffer a loss, but losing a specific amount is almost twice as painful as winning the same amount. This is the reason why the value curve around the beginning location is lopsided and the loss slope is greater (Moreira *et al.*, 2020; Haven & Khrennikov, 2017; Orrell, 2020; Yang & Zhang, 2019; Piotrowski & Sadkowski, 2002).

Experiments demonstrate that we do not adequately evaluate the odds of possible outcomes. We are considerably more sensitive to change likelihood from 0 to 0.1 or 0.9 to 1 is greater than probability from 0.4 to 0.5. The uncertainty function is bowed at zero and convex at 1.

Perspective Theory and Expected Benefit Theory are dissimilar. as opposed to a formula:

$$U(\alpha) = p(\alpha_1)\,\alpha_1 + p(\alpha_2)\,\alpha_2 \tag{1.5}$$

We are writing:

$$U(\alpha) = w(\alpha_1)\,v(\alpha_1) + w(\alpha_2)\,v(\alpha_2) \tag{1.6}$$

Where v is a value function and w is an estimation uncertainty function. Perspective theory can be viewed as a modified form of the Expected Benefit Theory, with nonlinear curves replacing the linear relationship. It may be regarded as the Allais paradox:

Game α: choice between
α_1 500 EUR with 80 percent probability
α_2 375 EUR with 100 percent probability

Game β: choice between
β_1 EUR 500 with 20 percent probability
β_2 375 EUR with 25 percent probability

According to the Theory of Expected Benefits, we have:

for game α

$$U(\alpha_1) = p(\alpha_1)\ \alpha_1 = 0.80 \text{x} 500 = 400 \tag{1.7}$$

$$U(\alpha_2) = p(\alpha_2)\ \alpha_2 = 1.00 \text{x} 375 = 375 \tag{1.8}$$

For game β

$$U(\beta_1) = p(\beta_1)\ \beta_1 = 0.20 \text{x} 500 = 100 \tag{1.9}$$

$$U(\beta_2) = p(\beta_2)\ \beta_2 = 0.25 \text{x} 375 = 94 \tag{1.10}$$

In the first choice, the game offers slightly better benefits. In practice, however, participants choose the first option in the β game and the second option in the α game. The reason that in game α is the warranty option, which is more attractive. However, this meant that their Utility Theory was inconsistent, which violated the Axioms of Proposed Utility Theory (Palafox-Alcantar *et al.*, 2020; Golroudbary *et al.*, 2020; Orrell, 2020 Whalen *et al.*, 2018).

In Perspective Theory, using the value and uncertainty estimation function, these calculations become for α game:

$$U(\alpha_1) = w(\alpha_1)\ v(\alpha_1) = 0.61 * 22.36 = 13.64 \tag{1.11}$$

$$U(\alpha_2) = w(\alpha_2)\ v(\alpha_2) = 1.00 * 19.37 = 19.37 \tag{1.12}$$

for β game:

$$U(\beta_1) = w(\beta_1)\ v(\beta_1) = 0.26 * 22.36 = 5.81 \tag{1.13}$$

$$U(\beta_2) = w(\beta_2)\ v(\beta_2) = 0.29 * 19.37 = 5.62 \tag{1.14}$$

The most attractive alternative is now α_2 and β_1, which corresponds to the experiments. The reason for that was. psychological overestimation of the guarantee.

The Ellsberg paradox should also be examined. There is a box with 180 balls, of which 60 are red and 120 are black or yellow.

There are two choices: in the case of α, you can bet on red or black; In the case of β, you can bet on red or yellow, or black or yellow. In each game, the probability of finding a color is 1 to 3. The difference is that in game β, each guess has a yellow color as an alternative. Therefore, if you want red in the case of α, then you have to choose red or yellow in game β. Most people see it differently – they don't look at the color of the ball, but at the uncertainty (Moreira *et al.* 2020; Haven & Khrennikov, 2017; Orrell, 2020; Yang & Zhang, 2019; Piotrowski & Sładkowski, 2002).

In game α we know that number of red will be 60 and black is unknown. Therefore, the red color is chosen in the game α. In the game β. the number of yellow balls is unknown, but the known amount is 120. Therefore, black or yellow is chosen, again due to less uncertainty. This inconsistency contradicts the theory of Expected Utility, but it also denies the Theory of Prospects for the simple reason that probabilities are not known, making it impossible to reconcile them with the function of the uncertainty weight (Liu *et al.*, 2019; Omrani & Fahimi 2020; Orrell, 2020; Becchetti *et al.* 2020; De Lange & Valliere, 2020). The paradox could only be explained by the introduction of a new and different ad hoc weighting function, which led to the avoidance of doubt (Phoenix *et al.*, 2020; Wang & Xiang, 2019; Asano *et al.*, 2012).

Using classical theory, there are a number of cognitive phenomena that are difficult to predict (Phoenix *et al.*, 2020; Wang & Xiang, 2019; Asano *et al.*, 2012). These include so-called merge and detachment effects, order effect, and preference change. These cases show that context and measurement procedures affect responses. The Elsberg paradox presents two formally identical variants, with a script difference. Uncertainty about black and yellow balls creates interference that determines the assessment. It will therefore be examined further a quantum approach that could be used to address these paradoxes.

In this section, we will examine spectrum theory, and its applications for modeling market negotiations, with the aim to fill the limited possibilities of classical theory to evaluate subjective parameters of economic behavior. Therefore, in the case of the Alay effect, we note that the problem can be presented in the form of a matrix, forming a benefit matrix for the game α

$$U = \begin{pmatrix} u_1 & 0 & 0 \\ 0 & u_2 & 0 \\ 0 & 0 & u_3 \end{pmatrix} = \begin{pmatrix} 500 & 0 & 0 \\ 0 & 375 & 0 \\ 0 & 0 & 0 \end{pmatrix} \qquad (1.15)$$

The probabilities will be the vectors $\Psi_1 = (\sqrt{0.8} \quad 0 \quad \sqrt{0.2})$ ir $\Psi_2 = (0 \quad 1 \quad 0)$, where the third component takes into account the possibility of not winning anything. The likely benefits in this case are:

$$O(\Psi) = \Psi U \Psi^T \qquad (1.16)$$

$$O(\Psi_{\alpha 1}) = (\sqrt{0.8} \quad 0 \quad \sqrt{0.2}) \begin{pmatrix} 500 & 0 & 0 \\ 0 & 375 & 0 \\ 0 & 0 & 0 \end{pmatrix} \begin{pmatrix} \sqrt{0.8} \\ 0 \\ \sqrt{0.2} \end{pmatrix} = 400 \qquad (1.17)$$

$$O(\Psi_{\alpha 2}) = (0 \quad 1 \quad 0) \begin{pmatrix} 500 & 0 & 0 \\ 0 & 375 & 0 \\ 0 & 0 & 0 \end{pmatrix} \begin{pmatrix} 0 \\ 1 \\ 0 \end{pmatrix} = 375 \qquad (1.18)$$

$$O(\Psi_{\beta 1}) = (\sqrt{0.2} \quad 0 \quad \sqrt{0.8}) \begin{pmatrix} 500 & 0 & 0 \\ 0 & 375 & 0 \\ 0 & 0 & 0 \end{pmatrix} \begin{pmatrix} \sqrt{0.2} \\ 0 \\ \sqrt{0.8} \end{pmatrix} = 100 \qquad (1.19)$$

$$O(\Psi_{\beta 1}) = (0 \quad \sqrt{0.25} \quad \sqrt{0.75}) \begin{pmatrix} 500 & 0 & 0 \\ 0 & 375 & 0 \\ 0 & 0 & 0 \end{pmatrix} \begin{pmatrix} 0 \\ \sqrt{0.25} \\ \sqrt{0.75} \end{pmatrix} = 94 \qquad (1.20)$$

The answers are the same as before.
We can also use spectral decay to describe U:

$$O(\Psi) = \Psi U \Psi^T = \Psi\left(\sum_i u_i V_i V_i^T\right)\Psi^T = \sum_i u_i |\Psi V_i|^2 \qquad (1.21)$$

Where V_i is the real vector of column 0 with respect to the real value Ui, and $ViViT$ is the projection operator is the projection operator that protrudes into that self-vector. In the classical case, where 0 is diagonal, the matrix V of the real vector is an identical matrix, the formula decreases to the weighted expected benefit function, where the win u_i is weighted by the possibility:

$$|\Psi V_i|^2 = \Psi_i^2 \tag{1.22}$$

In this case we can write:

$$O(\Psi) = 500\,\Psi\begin{pmatrix}1 & 0 & 0\\ 0 & 0 & 0\\ 0 & 0 & 0\end{pmatrix}\Psi^T + 375\,\Psi\begin{pmatrix}0 & 0 & 0\\ 0 & 1 & 0\\ 0 & 0 & 0\end{pmatrix}\Psi^T + 0\,\Psi\begin{pmatrix}0 & 0 & 0\\ 0 & 0 & 0\\ 0 & 0 & 1\end{pmatrix}\Psi^T \tag{1.23}$$

In the quantum case, the matrix U responds to the observation, which is a Hemitian operator with real true values. Expected benefit O (Ψ) is the probable value of the observation when the system is in place:

$$|\Psi\rangle = \sum_i \langle V_i|\Psi\rangle * |V_i\rangle \tag{1.24}$$

Where the weights $\langle V_i|\Psi\rangle^2$ take into account the conditions $|\Psi V_i|^2$ in the matrix version, and show the subjective weight assigned to the win Ui. In other words, we break down Ψ the position of the decision maker to the real vectors V_i where each takes into account the corresponding result, and uses the result to reach the observed O (Ψ).

In the classic case, probabilities Ψ indicate the objective state of the game, and the weights combine these probabilities with the winners V_i. The problem is that there is no punishment administered to the fact that nothing is unwinnable, what is known as influencing decisions. Based on La Mura's theory of projected expected benefits, this can be done in a quantum system by choosing an observational U that would be a Hermitian operator where non-diagonal conditions are not zero (Škare & Porada-Rochoń, 2020; Gazda *et al.*, 2017; Suzanne *et al.*, 2020; Orrell, 2020). In this case, the weights $\langle V_i|\Psi\rangle^2$ will not only weigh the result according to its probability of occurrence, but may include other factors as the fact that the appearing result means that the next result will not occur. For example, a low degree of fear risk of not winning anything (the third component) can be modeled by including:

$$U = \begin{pmatrix} 500 & 0 & -40 \\ 0 & 375 & -40 \\ -40 & -40 & 0 \end{pmatrix} \tag{1.25}$$

Which gives:

$$O(\Psi_{\alpha 1}) = (\sqrt{0.8} \quad 0 \quad \sqrt{0.2}) \begin{pmatrix} 500 & 0 & -40 \\ 0 & 375 & -40 \\ -40 & -40 & 0 \end{pmatrix} \begin{pmatrix} \sqrt{0.8} \\ 0 \\ \sqrt{0.2} \end{pmatrix} = 368 \tag{1.26}$$

$$O(\Psi_{\alpha 2}) = (0 \quad 1 \quad 0) \begin{pmatrix} 500 & 0 & -40 \\ 0 & 375 & -40 \\ -40 & -40 & 0 \end{pmatrix} \begin{pmatrix} 0 \\ 1 \\ 0 \end{pmatrix} = 375 \tag{1.27}$$

$$O(\Psi_{\beta 1}) = (\sqrt{0.2} \quad 0 \quad \sqrt{0.8}) \begin{pmatrix} 500 & 0 & -40 \\ 0 & 375 & -40 \\ -40 & -40 & 0 \end{pmatrix} \begin{pmatrix} \sqrt{0.2} \\ 0 \\ \sqrt{0.8} \end{pmatrix} = 68 \tag{1.28}$$

$$O(\Psi_{\beta 1}) = (0 \quad \sqrt{0.25} \quad \sqrt{0.75}) \begin{pmatrix} 500 & 0 & -40 \\ 0 & 375 & -40 \\ -40 & -40 & 0 \end{pmatrix} \begin{pmatrix} 0 \\ \sqrt{0.25} \\ \sqrt{0.75} \end{pmatrix} = 59{,}10 \tag{1.29}$$

Therefore, the alternatives α_2 and β_1 are now chosen as more useful.

In conclusion, the diagonal utility matrix indicates that perspectives are evaluated by projecting the outcomes of an underlying item with known advantages. In practice, the individual will value the perspective by constructing on subjective frameworks that do not align completely with the traditional model and by assigning negative weights to unpleasant outcomes (Fahrenberg & Legay, 2020; Riser *et al.,* 2020; Rashkovskiy & Khrennikov, 2020; Samadi *et al.,* 2018; Orrell, 2020; Shubik, 1999; Orrell, 2020). This approach transfers non-zero, non-diagonal data to the U utility matrix, which has the benefit of simplicity. However, U has two disadvantages: objective and subjective weights. Therefore, the alternative method gives a subjective basis instead of computing U. Which projects the position and employs spectral decay and normalized conditions to produce the U result.

Participants in market economy talks are confronted with huge amounts of information regarding the objective criteria that govern the setting of the negotiations. However, subjective economic conduct, which is not always measurable, is no less significant, and present theories do not account for the importance of subjectivity in economic activity. In negotiations, when it is required to harmonize the processes of interaction between participants of different cultures, assessing the context of negotiations, cultural differences, and features of conflict prevention, the assessment and construction of bargaining power are particularly relevant. In order to make more effective use of bargaining power potential in market economy talks, it is necessary to evaluate these factors of internationalization. This emphasizes the need to seek out modeling approaches that emphasize cross-cultural compatibility, conflict reduction, and a better understanding of negotiating context.

Individual and market-level economic behavior, notably negotiating methods, can be modeled using the Spectrum theory approach. This is especially essential in international business discussions where subjective parameters might be evaluated while modeling solutions and operations. Classical economic theory does not describe subjective characteristics of economic behavior; hence, it is difficult to identify and evaluate relevant parameters of economic behavior required for decision-making in market negotiations when modeling market negotiation techniques. In this paper, the application possibilities of Spectrum theory are investigated in comparison to classical theory. It is proposed that spectrum theory be used to model decision making. Using classical theory, it is difficult to predict a lot of cognitive events. These include the so-called merge and detachment effects, the order effect, and the change in preference. These examples demonstrate that context and assessment methods impact reactions.

In conclusion, the diagonal utility matrix signifies that viewpoints are valued in design on a consistent basis, producing tangible outcomes with known benefits. In practice, the individual will value the perspective by constructing subjective frames that do not align completely with the traditional version and by assigning negative weights to unpleasant outcomes. This straightforward approach transfers non-zero non-diagonal data to the U utility matrix. Obviously, U has both objective and subjective harmful impacts. In lieu of computing U, the alternative technique provides a subjective basis that projects the position and employs spectral decay and normalized conditions to obtain the U result.

Conclusions

In a market that is distorted, there is no uniform understanding of the market, and the elements that determine competitiveness are interpreted differently. The market idea is one of the most significant instruments for investigating and evaluating competition issues in order to balance market competition. Thus, market concept, including the calculation of market shares and the measurement of concentration, is not an end in itself, but a very important tool for determining the strength of restrictions on competition faced by the company and assessing the creation or strengthening of market power as well as the likelihood and likelihood of possible anticompetitive effects in the market. Other companies' goods and services, as well as several regional factors, limit competition. Thus, the relevant market must be defined in terms of product and geographic dimensions; market shares and concentration measures are trustworthy indicators of market power, and it is evident that the market must be characterized in this manner. Due to the uniqueness of the energy industry, the results demonstrate that HHI is appropriate for evaluating the competitive position, confirming our premise. In addition, the evaluation demonstrates that HHI effects the firm's ability to avoid market distortions in coherence with competitors over time.

Study undertaken on the idea of market power revealed the significance of the market concept in evaluating the concentration of business entities and their effect on competition. Market idea is vital for determining the market power of distorted market corporate entities and their effect on competition.

The market idea has been included into competition law to assist competition authorities in assessing market strength, enabling them to identify anticompetitive consequences and enforce competition law. This instrument was created in answer to the question of the presence, formation, and consolidation of market power in a historical setting, with a particular view of existing competition issues and how they should be studied.

The model was used and evaluated in the empirical part, and it is intended to facilitate the construction of business plans based on market concentration analyses.

As this model has been evaluated, it can be depended upon to deliver a scientifically sound response that will avoid the future acquisition of a suboptimal solution. In conclusion, the model is extremely scientific and sound, and it can be broadly used to the selection of a scheme for constructing a business plan in the energy industry in order to get the optimal outcome. The primary weakness of the study is that the HHI score findings for the relevant time period are based solely on current data, without any forecasts. It is difficult to determine the size of a market that is always undergoing restructuring because of how frequently it changes. When a significant number of enterprises in the industry and their market shares are known, precise estimates can be made. The lack of data on extremely tiny businesses may be disregarded because they have minimal impact on the bottom line, but all company criteria should be considered when calculating the HHI index. The change in the HHI index over time affects a company's ability to avoid market distortions in comparison to its competitors. Future research should thoroughly evaluate and compare the findings, interviewing not only industry representatives but also field researchers, and undertaking a comprehensive data analysis. Despite the extensive use of the HHI in a distorted industry, additional research is required to understand the competitive landscape of the market. Also, it is vital to examine the applicability of these tactics to various market levels.

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MODERN ASPECTS OF STRATEGIC PLANNING OF INTERNATIONAL ACTIVITY OF THE ENTERPRISE

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Abstract
In the article the modern aspects of strategic planning of international activity of the enterprise are researched. The main motives for the development of international relations and international activities are formulated. The essence of enterprise's strategic planning of international activity is considered. The classification of international activities strategies is compiled on the basis of literary sources. Based on the definitions of different authors the concept and essence of the strategy of the development of international activity are presented. Five aspects of concept of the strategy are marked. With new scientific content the principles of strategic planning of the enterprise's international activities are formulated. These are such principles as durability; scientific and methodical validity; achievability and realism; purposefulness and objective-setting; balance, globality and systematicity; qualitative and quantitative determination; alternability and multivariability; continuity; sequence; social orientation and efficiency; dynamics, flexibility and speed of reaction. According to the pace of development the strategies of international development are distinguished and characterized. These are strategies of accelerated

growth, limited growth strategy, strategy of saving the position, strategy of reducing the volume of activity, reorganization strategy and strategy of complete liquidation. Depending on the way of enterprise development the strategies of international development are also distinguished and characterized. These are strategies of integrated development, diversified development and concentrated development. The stages of developing the strategic plan for development of the company's international activities are noted, namely: defining the company's mission; study of conditions of the international environment; assessment of the strengths and weaknesses of the enterprise and its activities; forming the system of strategic objectives of development of the enterprise; forming of several strategic development plans and selecting the most optimal one; performing the necessary measures regarding the implementation of strategic development plans; monitoring of their implementation.

Keywords: *strategic planning, enterprise's international activity, strategy of international activity, strategic plan of development, globalization, international market, external and internal environment.*

In the definition of the concept of «international activity», its main components are: international production, scientific and technical cooperation, various forms of international cooperation in the production sphere, export and import of products, the company's entry into the international new regional market, or countries – all specified concepts define the sphere of financial and economic activity of companies that perform the international activities.

The main motives for the development of international relations and international activities should include:

– purchase of necessary goods, components, various resources, technologies, equipment, machines, equipment to satisfy own production or demand, if the final product is imported or exported;

– increasing the receipts of profits by performing activities outside own country, finding new consumers and increasing opportunities for increasing sales;

– participate in the international division of labour, international specialization and production cooperation for the development of own business by gaining access to new technologies of another country and new knowledge;

– take measures to attract foreign investors to ensure the development of the enterprise, increase the efficiency of its activities, strengthen competitive positions on international markets, export potential and modernize production;

– search for new ideas, engineering, business reorganizations to ensure production efficiency, creation of a unique competitive product in price and quality, which will compete with international samples and to achieve the most acceptable sale price at the lowest cost.

International activity is a component of the general activity of the enterprise, these concepts are connected with each other and there is a direct dependence between them.

However, international activity has certain features and specifics: it performs on the international market and includes international cooperation with foreign companies. It is worth to note that in order to ensure the development of international activities of enterprises, it is necessary to take into account the peculiarities of different countries, since the population of countries differs in preferences, religious characteristics, needs, etc., and the language factor is also important for establishing contacts with customers and conducting effective marketing activities.

Strategic planning of international activities is a component of the management of the international activities of the enterprise, at the same time it is also the main function of the implementation of international activities. Without the implementation of strategic planning, the enterprise will not be able to achieve significant success in development.

Strategic planning does not solve all the threats of the enterprise's foreign economic activity, but it is the basis and one of the stages for the introduction of international activity at the enterprise. Strategic planning is necessary for both domestic and international operations.

The essence of strategic planning of international activity consists in forming the company's purpose and objectives regarding international activities, predicting its results based on analytical calculations and forecasts of the financial results of the enterprise and international market trends, as well as determining the necessary resources for international operations (Dovhan, Karakai, & Artemenko, 2019).

The mission and tasks, which are defined during the strategic planning the development of the international activity of the enterprise, must correspond in their content to the general objectives and purpose of the company's activity.

Every company has development, and when it achieves certain successes in the domestic market, processes of international activity usually take place in search of new consumers.

Strategic planning of international activities allows you to analyze the country where the company is going to work, analyze its internal environment and external factors of indirect and direct influence.

In its essence, strategic planning of international activity resembles business planning the development of the enterprise in the domestic market, the course of which usually looks like as a document where it is fixed the plan of actions and measures that should ensure the development of the enterprise, only in this case – on the international market (Morozova, 2019).

In the conditions of the strengthening the globalization processes, the development of high-quality plans of international activity and strategies will allow the enterprise to obtain additional profits and strengthen its economic position due to the advantages of using the international division of labour, economic integration, and trade.

Transnationalization arose and has development along with the processes of globalization, which essentially represents international trade.

Precisely thanks to international trade the states are able to satisfy the domestic demand of consumers with products that national producers do not produce and, conversely, to satisfy foreign consumers with goods and services that are not available in those countries.

To ensure the effectiveness of implementation of the strategies of international activity's development, it is worth to analyze many factors related to the conditions, opportunities, and consequences of entering a new international market (Dovhan, Karakai, & Artemenko, 2019).

Strategic development is the basis for forming the strategic development plans, because every company must analyze its activities and increase its own profits, minimizing costs and losses.

The planned strategic development takes into account all risks of the company's activities and helps to determine the directions of its development.

Strategic planning forms the direction of the company's development, defines a perspective branch, directions of activity, where the company is able to achieve a positive economic effect.

The strategic plan usually is long-term (5 years or more), but in some cases it can be medium-term or even short-term.

It is important to perform a correct analysis of the trends of changes in the international market, demand and supply for the products of the enterprise that performs international activity, because the strategies must correspond to the production processes at the enterprise and the conjuncture changes of the world market.

The strategy of international activity is one of the types of functional strategies and has certain features:

focus on the internal and external environment of the enterprise;

the factor of complexity of the international strategy;

taking into account a wide variety of possible situations and risk factors that directly influence on the formation of the strategies of international activities development;

highlighting the priority of international activity in terms of other types of enterprise activities;

emergence of the relationship between the strategies of the different levels of management hierarchy.

The classification of international activities strategies is as follows (Dovhan, Karakai, & Artemenko, 2019; Brin, & Holtvianska, 2021):

1. On the basis of period of implementation – short-term, medium-term, long-term strategies.
2. Level of management – functional, operational, competitive, corporate strategies.
3. Functional feature – financial, marketing, investment, resource, research strategies.
4. Character of market behaviour – passive, active, active-passive strategies.
5. Degree of globalization – strategy of diversification, segmentation, internationalization.

The strategic planning of the development of international activity is based on the permanent monitoring of strategic indicators and the implementation of strategic procedures in order to respond promptly onto changes in the demands of the international market in the future.

If the strategic planning of the development of the enterprise is not a regular process, then in this case these actions will allow the company to solve only local single problems.

There is no universal plan of the strategy. It only helps to form the direction of activity and create conditions for international activity. But in order developing the company, it must constantly review and improve strategic plans based on the results of international activities.

There are 5 aspects of concept of the strategy:

1. Strategy is a plan.
2. Strategy is a position relatively competitors.
3. Strategy is a line of behaviour.
4. Strategy is a prospective direction of enterprise movement.
5. Strategy is a stencil for using depend on situation/

Formation and adjustment of the company's international development strategy create conditions for using competitive advantages compared to other companies (Skibitska *et al.*, 2019).

The concept and essence of the strategy of the development of international activity according to the definitions of different famous scientists are presented in the following ways:

1. System of long-term objectives – forming the system of long-term objectives of the enterprise's international activities and choosing the most effective way to achieve them (I.O. Blank).
2. Coordinating, unifying factor – coordinating and unifying factor of the enterprise's objectives and resources in its international activities (N.V. Kudenko).
3. Established set of activities – defined set of directions of the enterprise, their objectives and means of implementation in order to ensure profitability and renewable distinctiveness when performing by enterprise the international activity (A.P. Nalyvaiko).
4. Actions program – defined program of actions that influences the management of the enterprise and its development when performing by enterprise the international activity, the determination of prospective directions and the achievement of specified objectives, based on the analysis of the company's potential

opportunities and forecasting trends in changes in the external environment (V.F. Oberemchuk).

5. Long-term course, means of achieving the objectives – long-term course and means of achieving the objectives of international development of the enterprise, which are chosen on the basis of comparisons of alternative development solutions, based on the experience of the company's management and the value of its economic indicators (S.V. Oborska, Z. Ye. Shershnova).

There are also principles that affect the success of the implementation of strategic plans and the effectiveness of the development of international activities of the enterprise.

Let's formulate principles of strategic planning of the enterprise's international activities and their contents:

1. Durability – emphasis on the comprehensive solution of threats and problems that arise in long-term activities, the implementation of complex, consistent, well-founded measures to solve problems.

2. Scientific and methodical validity – using the scientific and methodical approaches for development of strategies of the development of international activities, taking into account the characteristics of the external and internal environments.

3. Achievability, realism – strategic plans of international activity should be formed based on the available opportunities to achieve the specific prospective result and establish the features of the enterprises functioning.

4. Purposefulness, objective-setting – to ensure the achievement of strategic goals, the company uses all ways of activity in accordance with the system of strategic plans.

5. Balance, globality, systematicity – forming the system of decisions within the framework of strategic development plans, emphasis and coverage of all aspects of international activity, ensuring the introduction of changes in the company's activities at the external and internal level.

6. Qualitative and quantitative determination – strategic planning should ensure the achievement of specific economic results, the implementation of the necessary processes, ensuring a quantitative increase in the values of indicators.

7. Alternability, multivariability – forming the alternative

development strategies, which can be used when changing the environment of the enterprise's functioning, justification of various alternatives and flexible and quick response to their implementation.

8. Continuity – difficulties in the implementation of the proposed solutions should lead to the adjustment of the strategic development plan from the initial stage, because the planning of international strategies is a somewhat complex process that requires permanent improvement.

9. Sequence – it is important to follow a clear procedure for implementing strategic changes in the company's activities, under condition of achieving the appropriate level of results and taking into account the peculiarities of the occurrence of various phenomena and the specifics of the coursing the various processes.

10. Social orientation and efficiency – direction of activities to solve social problems of the whole society, not only own customers, as well as the level of financial performance should exceed the level of available costs.

11. Dynamics, flexibility, speed of reaction – adequate reaction, adaptation to possible changes of market environment, timely response to changes of the international market situation.

Forming the strategic plan of development of the enterprise helps it to ensure the effect of permanent growth and increase the scopes of the company's activities.

The process of forming the strategy of international activity and determining the main prospective direction of development becomes possible when the internal capabilities of the enterprise and the conditions of the external environment are aligned, the qualitative definition of new objectives, the development of ways of ensuring the effectiveness of their achievement through the forming the complex of necessary measures for implementation.

According to the scale of development, growth strategies of enterprises are divided into supporting and general ones. The general strategy determines all activity of the company, and the auxiliary – contribute to the stability of the first one.

Focusing on the prospects of the company's development during the implementation of international activities, various strategies are formed that comprehensively ensure the development of the company or its individual aspects. They can be classified on various grounds. Often, companies use a number of different strategies that are coordinated with each other. Such a combination of planning ensures comprehensive development of the company and protects it from negative consequences.

There are production, financial, operational, marketing, investment, organizational and other strategies according to the company's activities. They are developed according to the directions of activities of the enterprise.

Enterprise resources are one of the most important assets of any company, regardless of the types of these resources, whether they are raw materials or labour. Therefore, there are auxiliary strategies for the formation and use of labour, material and technical, financial, and informational resources. They can relate to the attraction of loan funds, the formation of equity capital because effective planning of resources significantly increases the probability of the successful operation of the enterprise on the international market (Tiurina & Karvatska, 2019).

According to the pace of development it is possible to distinguish the strategies on international development:

strategy of accelerated growth – improves the level of production through the introduction of additional objectives, significantly exceeding the previous achievements of the enterprise. It is typical for companies that are developing and have a high risk;

limited growth strategy. Here, the objectives correspond to the existing achieved level of success of the enterprise, the development of the enterprise is stable, but slow, which gives it the opportunity to earn stable profits and be efficient in its activities;

strategy of saving the position. Here, the company does not develop its own production, but does everything that is possible to save its position in the market and adapt to branch changes;

strategy of reducing the volume of activity – curtailment of activity occurs along with reorientation to other niches and diversification of production in new directions;

reorganization strategy. It leads to complete change in the functioning of the company and can often be accompanied by the liquidation of individual business units or divisions;

strategy of complete liquidation – the company is closed because it is economically unprofitable.

There are following strategies, depending on the way of enterprise development:

strategy of integrated development – it is used when forming new structural divisions of the company, using various forms of integration with its partners and to ensure the development of progressive types of activities;

strategy of diversified development – it is used during the study of new international markets for sales activities and also during the diversification of produced works, goods and services to ensure the presence of larger number of consumers;

strategy of concentrated development – it is used to strengthen the company's position in the mastered niche through the improvement of the production of goods and services within the well-known mastered market, and it actually provides the company with further development.

In conclusion, we note that directly development of the strategic plan of development of the company's international activities includes the following stages: defining the company's mission; study of conditions of the international environment; assessment of the strengths and weaknesses of the enterprise and its activities; forming the system of strategic objectives of development of the enterprise; forming of several strategic development plans and selecting the most optimal one; carrying out the necessary measures regarding the implementation of strategic development plans; monitoring of their implementation.

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Chapter 2 MECHANISMS OF MANAGING FINANCES AND INVESTMENTS OF SOCIO-ECONOMIC SYSTEMS

DEVELOPMENT OF RISK TYPES OF INSURANCE IN UKRAINE UNDER CONDITIONS OF UNCERTAINTY IN THE CONTEXT OF EUROPEAN INTEGRATION

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Abstract
The dominant direction of economic development in the 21st century is digital transformation, which is fundamentally changing all areas of economic activity, including the insurance market. However, there are additional turbulent conditions that also affect the functioning of the risk insurance sector, including economic restructuring, changes in the regulatory authority (in accordance with the law) and regulatory and legislative ensuring. Under such uncertainty, additional research is needed on modelling the development of risky insurance through the improvement of new insurance products, the development of which will have a positive impact on the formation of a competitive market of risk types of insurance in Ukraine in the context of European integration. In

the course of the study, the main directions of development of the global risk insurance market are identified. The institutional and regulatory framework of Ukraine in the field of insurance is characterised. The main basic EU directives regulating insurance activities and aimed at maintaining a sufficient level of solvency of insurance companies and controlling it are identified. An analysis of the most common and significant global risk over the past three years is carried out. The impact of the insurance sector on the economic development of countries is analysed and an economic-mathematical model of the relationship between the volume of gross insurance premiums and gross domestic product is built. The peculiarities of the insurance market functioning under conditions of uncertainty are revealed. The main trends for the insurance sector in Ukraine in the context of digitalisation are presented. The dynamics of changes in the gross receipts of insurance payments (premiums, contributions) and insurance payments for risk types of insurance and life insurance in Ukraine are characterised. It is established that the Ukrainian insurance market is fundamentally different from the insurance market of other analysed countries, since the Ukrainian market is dominated by risk insurance, which accounts for more than 95% of the total volume of earned insurance premiums and insurance payments/compensations. The model of development of risk insurance in Ukraine is built.

Keywords: *insurance, regulatory-legal ensuring, institutional support, European Union, Ukraine, development dominants, correlation-regression analysis, modelling.*

Introduction

Sustainable development of country and, in particular, its economic stability are influenced by a number of factors, one of which is the state of financial market. At the current stage of formation, there are certain financial, economic, political and social constraints that have a comprehensive impact on financial markets. A well-developed financial system increases the efficiency of financial decisions and improves the allocation of resources in the economy, which contributes to economic growth.

Financial development contributes to long-term economic growth, even though it can lead to economic downturns in the short term due to financial crises. In recent decades, the importance of the economy has increased, mainly due to the liberalisation of financial systems, globalisation and conglomeration of financial markets. The role of the insurance sector and its contribution to economic growth has been highly recognised by academia and major international organisations such as UNCTAD, the World Bank and the International Monetary Fund.

The development of an efficient and reliable insurance market and insurance ecosystem as a component of the financial market and financial ecosystem of Ukraine requires significant efforts from all stakeholders, as it serves as a kind of airbag against the impact of possible factors for the country's economic stability. This necessitates a vector orientation in the development of the insurance market, including the development of new products.

In the context of digitalisation, informatisation, convergence and uncertainty in Ukraine and globally are developing of professional activities such as outsourcing, auditing, provision of medical services by private companies, including IT medicine, management of crowdfunding and crowdinvestment platforms, activities using natural resources, etc. Therefore, given the novelty of their activities, the lack of practical experience of these professional representatives can lead to significant losses for all participants in economic processes. Particular attention should be paid to such risks, where insurance can be seen as a method of risk reduction and indirect concern for the safety of members of the economic community, and taking into account the accumulated foreign experience, trying to adapt parts of it in the domestic market.

Research on the issues of modelling the development of risks insurance under conditions of uncertainty is reflected in the works of many domestic and international scholars. In particular, they define the theoretical foundations of the insurance market development, study the issues of digitalisation as a competitive advantage, transformation of the insurance market in the context of digital technologies, the development of the financial system under the influence of Covid-19 and in the process of forming the insurance ecosystem, the peculiarities of the insurance market functioning under uncertainty, its development trajectory and current development dominants.

Currently, scientists from different countries identify different main directions of development of the global market of risk types of insurance, but the main ones are shown in Figure 2.1. The first area is the development of deposit insurance and credit union lending, which are an essential part of the financial protection process in many countries. Credit unions depend on the volume of deposits. Therefore, it is necessary to ensure that depositors are protected from negative consequences that may arise as a result of the ineffective operation of such organisations, especially in the face of financial market instability, exchange rate volatility, riskiness, etc.

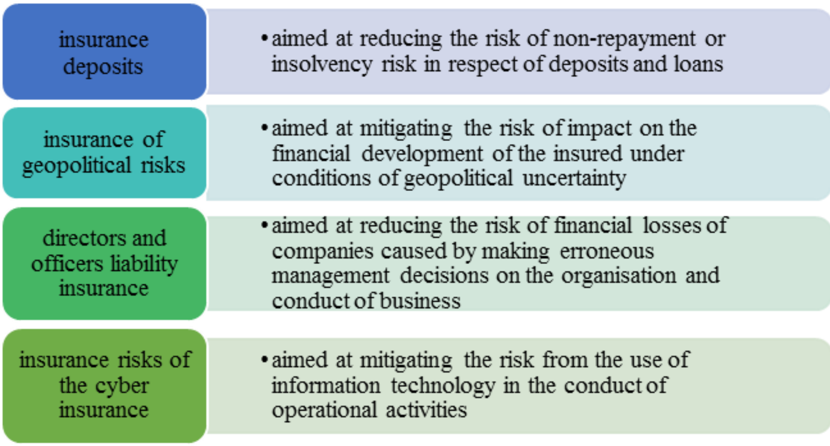


Figure 2.1 Key trends in the development of the global risk insurance market

Source: compiled and built by the authors

For example, I. Hasan, L. Liu, E. Saunders, G. Zhang in their research, prove that during the financial crisis of 2007-2009, credit spreads increased and corporate lending became more severe, especially for foreign borrowers (Hasan *et al.*, 2022). They also found that banks in countries with deposit insurance in place reduced their overall credit spreads to a lesser extent and recovered more quickly from the crisis. In addition, analysing the impact of deposit insurance on the volume, structure and quality of credit union lending, other researchers (Nguyen *et al.*, 2022) found that an increase in the maximum coverage of insured deposits led to credit unions providing more loans due to a decrease in their quality.

Researchers in Southeast Asia (Noman *et al.,* 2022), who study the impact of the indirect function of competition on the relationship between deposit insurance and banks' risk-taking during the economic crisis in these countries, found that deposit insurance reduces banking risk in the absence of competition by reducing both credit risk and insolvency risk. However, it has the effect of increasing banking risk, which leads to a weakening of banking stability in a highly competitive environment. This, in turn, leads to a weakening of banking instability through deposit insurance during the financial crisis.

In European countries, when assessing the distribution of EDIS losses, taking into account various sources of systemic risk, interconnected bank assets, and the sensitivity of the results to the riskiness of the bank portfolio, researchers (Fernández-Aguado *et al.,* 2022) found that the interconnectedness of banks in different countries has a significant impact on the accumulation of losses in the final distribution. Similarly, a deterioration in the quality of bank portfolios leads to a significant reduction in the ability of funds to absorb losses, i.e., a negative impact on stability during an economic downturn.

The insurance sector and insurance business at all levels of the market (local, regional, national, international, global) are characterised by systemic risk, which insurance companies are committed to in the formation of a global interconnected system (Clemente & Cornaro, 2022). Therefore, based on the experience gained during the financial crisis, banking regulation has changed significantly in several areas at the national and international levels, which serves as a prerequisite for the integration of systemic insurers with their simultaneous identification by certain criteria. Such integration will help insurance regulators to take into account significant aspects of systemic risk.

It is equally important in the world to take into account geopolitical events and risks that affect the financial development of the insurance business. Therefore, the authors of (Hemrit & Nakhli, 2021), who conducted a study of short-term and long-term asymmetric responses of insurance premiums, concluded and showed that geopolitical risk has an asymmetric and nonlinear effect. At the same time, most developing countries are subject to a much greater impact in the long run. The research shows that it is necessary to take into account the impact of such risks on the dynamics of insurance premiums in order to minimise the risk of geopolitical uncertainty.

The third area is “the development of directors and officers liability insurance (D&O insurance), which is aimed at providing protection against financial losses of companies caused by erroneous management decisions on the organisation and conduct of business. The cost of such insurance is significant, given the growing popularity of this insurance programme, which raises certain questions about its effectiveness. However, the use of this type of insurance facilitates internal monitoring and audits of directors and officers, for which external directors are more likely to be hired to implement the control mechanism, based on the assessment of which decisions are made on the reward or punishment of companies by the insurer. The research of scientists in (Liao, Chuang, & Wang, 2022) allowed to confirm and argue for the improvement of management monitoring simultaneously with the purchase of D&O insurance, which benefits shareholders and helps to reduce the cost of financing optimisers, especially when external governance is weak” (Demianchuk & Maslii, 2022).

In the context of global digitalisation, the transfer of risks to the cyber insurance industry for insurance is becoming increasingly popular (Demyanchuk, Maslii, & Stankova, 2018; Malavasi *et al.*, 2022), which is the fourth area and is due to the growing dependence of businesses, enterprises, authorities, and regulators on information technology, as any failure will negatively affect the ability of these entities to perform their tasks.

The insurance services market is steadily evolving rapidly in most countries of the world, including Ukraine: the volume of insurance premiums received and their percentage of GDP are increasing (Demianchuk, Zhuravel, & Melnyk, 2021). Despite the growth of one market indicator, the Ukrainian insurance market can be described as operating in an unstable environment, which leads to untimely fulfilment of obligations to policyholders, imperfect structure, and weak development of reinsurance. At the same time, there is a lack of public confidence in the insurance institution, which provokes low demand for insurance services despite the large supply.

Among the Ukrainian scholars studying various issues of insurance market development, it is worth highlighting the study of the economic nature of insurance market security, which allowed the authors (Prikazyuk & Motashko, 2015) to identify the main factors affecting the security of the insurance market and to propose a set of measures aimed at its further development. Insurance of liability for environmental pollution from the consequences of industrial activity should be distinguished as a separate link [Wang et al., 2021].

In order to develop commercial trade between the countries, Vietnamese scientists are studying the issue (Van Dat & Huy, 2021) of expanding the insurance market with ancillary policies for insurance of employees in the banking and insurance sector in accordance with the FTA or EVFTA agreements. Another important issue is the study of monopoly insurance, which plays an important role in providing municipalities and companies with refinancing opportunities (Jayasuriya Daluwathumullagamage, 2021). This paper identified the main failures, success factors, and the need for insurance in the future, as well as explored the potential of monopolies during the pandemic, which helped them develop a framework for monopoly management and regulation. As monopoly insurance has a significant impact on taxpayers, public policy and bond investors.

The study of the insurance market of Ukraine and its trends allowed the authors of (Demianchuk & Drozdyna, 2021) to determine the cyclical nature of development. Using a randomised R/S analysis (Babenko-Levada, 2021), the authors confirmed the stability of the insurance market dynamics and its fractal similarity in six out of ten indicators of the insurance market development. At the same time, they confirmed the trend break at the moment of transition from one fractal to another. This allowed them to predict the next potentially crisis periods for the Ukrainian insurance market.

Ukraine's insurance market has every opportunity to unlock its potential and, as a result, to function successfully and develop further. Due to the past mistakes of the state authorities in introducing an effective mechanism for providing services in the insurance market, there are still many points for improving the insurance processes. Increasingly, economic development at the global level determines the prospects and challenges "facing the insurance sector of each individual country. This is especially true for domestic insurers that are active in several markets. The complication of interactions between participants is due to the awareness of the post-financial crisis, as financial instability in one region can spread and affect operations in another (Sova, 2018). Improving the level of competition in the domestic insurance market will primarily be facilitated by addressing macroeconomic issues that go beyond insurance activities".

Therefore, taking into account the existing developments of world and Ukrainian scientists, additional research is needed on modelling the development of risk types of insurance, taking into account the constantly changing operating conditions, improvement of new insurance products, the development of which would have a positive impact on the formation of a competitive market for risk types of insurance in Ukraine.

Materials and Methods

The study is based on a combination of general scientific and special methods of cognition of the theoretical, methodological and conceptual foundations of the development of the insurance market of Ukraine in conditions of uncertainty and with due regard for European integration. The conceptual-methodological basis of the work is the fundamental provisions of world and Ukrainian scholars on the theory and practice of insurance market development, which served as the basis for identifying the main directions of development of the global market for risk types of insurance. The information base of the study was formed by the regulatory-legal documents of the European Union and Ukraine, based on the analysis of which their institutional and institutional ensure was determined. At the beginning of the study, the author outlines the main directions of development of the global insurance market, the basic provisions of the regulatory-legal and institutional framework of the European Union and Ukraine in the context of European integration and the implementation of relevant regulatory changes. The empirical stage of the study consists in conducting a study of the impact of the insurance sector on the economic development of countries. Using correlation-regression analysis, an economic-mathematical model of the relationship between the volume of gross insurance premiums and gross domestic product is built on the basis of statistical information from 36 countries over the past 21 years (664 observations directly). Based on a structural analysis the volumes of insurance premiums in OECD countries, the dominants of the development of risk classes of insurance are identified. Given that the insurance industry is directly related to risks and requires constant review of management decisions at all levels of regulation, the conditions of uncertainty in which the Ukrainian insurance market operates and develops are outlined. Monitoring of the development of risk types of insurance in Ukraine, which allows determining at what stage the Ukrainian market is, is necessary to build a model of risk types of insurance development in Ukraine and to demonstrate the relationship between the development of the market for risk types of insurance services, market participants and society. The statistical data used are those of the European Insurance and Occupational Pensions Authority, the Motor (Transport) Insurance Bureau of Ukraine, the National Bank of Ukraine, the Organisation for Economic Co-operation and Development, the World Bank, the World Economic Forum, the Statistical Organisation of the European Commission, and the Japanese multinational company "Nippon Telegraph and Telephone".

Results and Discussions

1. Regulatory, legal and institutional ensure of the insurance markets of Ukraine and the European Union

The main institutional entity that carries out state regulation, supervision, licensing in the insurance market (insurers (reinsurers), insurance (reinsurers) brokers) in Ukraine is the National Bank, which, according to (On Amendments to Certain…, 2019), took over such functions from the National Commission for State Regulation of Financial Services Markets from 01.07.2020. The purpose of the changes is to update the outdated legislative framework, digitalise and revive public confidence in the non-banking financial institutions sector, implement a financial ecosystem, intensify the protection of the rights and interests of consumers of relevant services and further innovative development of the non-banking services market.

The institutional framework of the insurance sector based on the structure of insurance regulation and supervision, in particular, the basic conditions that form the legislation (regulatory framework), policy regulation and non-legislative regulation; institutional structure; risk-based supervision, prudential and market regulation. The main strategic documents in the field of insurance market development in Ukraine are the "Strategy for the Development of the Financial Sector of Ukraine until 2025" (National Bank of Ukraine, 2021) and the White Paper "The Future of Insurance Market Regulation" (National Bank of Ukraine, 2020). The legal-regulatory framework for the insurance sector consists of fourth components, including regulations defining the provisions of general regulation, licensing and registration, supervision and inspection, and reporting.

Currently, Ukraine is introducing "a new model of insurance market regulation that will take into account the provisions of EU directives, international IAIS principles, and global practices, and will be implemented gradually during the transition period" (National Bank of Ukraine, 2021). In order to integrate Ukraine's financial market "*into the European financial area, the National Bank of Ukraine is working to increase the level of cooperation with the supervisory authorities of EU member states. In particular, in the field of regulation and supervision of banks and non-bank financial institutions, as well as strengthening cooperation with the European Banking Authority (EBA) and the European Insurance and Occupational and Pensions Authority (EIOPA), the European Central Bank (ECB)*" (National Bank of Ukraine, 2022). Also necessitates the development and implementation of a regulatory framework for the insurance sector that is in line with European standards and international practice. This will facilitate the development of the insurance sector, in particular by addressing the problem of public and citizen distrust in this area. In such an environment, there should be economic regulation that restrains potential market power and increases efficiency while protecting consumers and maintaining quality and other standards.

As the regulatory environment changes, the insurance technology industry is also changing. In the future, for example, third-party data providers will provide consumer information to insurers without providing detailed data. Insurers will receive only the information they need and avoid the regulatory issues that often accompany a more robust data set. In the current insurance regulatory framework, InsurTech can be helpful in meeting compliance requirements. InsurTech is basically a technological innovation that allows companies in the insurance industry to do their jobs more efficiently, while maintaining optimal levels of compliance and customer service.

Given that most of the information processed and used by insurance companies is confidential and its integrity must be preserved, certain types of technology are required, for example:

– homomorphic computing (an advanced data encryption tool that allows you to work with information without the need for decryption);

– multi-party computing (breaking data into meaningless parts, allowing different people with different computers to come together to operate on those parts without even seeing the whole);

– hybrid computing (a combination of the first two);

– private set intersection (a cryptographic method of encrypting data by which two parties can compare their encrypted data sets to determine the intersection);

– secure, searchable encryption (secure, searchable encryption uses a server to search encrypted data, extracting only the information relevant to your search; all other information remains confidential).

These cryptographic protocol technologies help to maintain privacy and regulatory compliance, which is the gold standard in the insurance industry, as consumers own their data and have the right to consent to how it is used. That is why it is so important for insurers to keep track of where consumer data is stored and how it is used, which can present a completely new set of challenges. There is many data to manage, so using InsurTech to work on the process now can help mitigate a crisis later – and ensure compliance when data privacy laws come into effect in our country.

The main regulatory act governing the insurance market and insurance in Ukraine is the Law of Ukraine "On Insurance", which was adopted on 18 November 2021 and will be in force from 01 January 2024, insurance is "legal relations for the protection of insurance interests of individuals and legal entities (insurance protection) in the insurance of risks related to life, health, disability and pension provision, with the ownership, use and disposal of property, with compensation by the insured for damage caused to a person or his/her property, as well as damage caused to a legal entity in the event of insured events specified in the insurance contract, at the expense of funds formed by payment of insurance premiums (payments, contributions) by insurers, income from the placement of such funds and other insurer's income received in accordance with the law" (On Insurance, 2021).

The main amendments and additions provided for by the new version of the Law are as follows:

1. Requirements for new insurers to enter the market. Insurers that intend to enter the insurance market must have a transparent ownership structure and provide information on the owners of significant shareholdings. The founders of an insurance company must have a good business reputation and satisfactory property and financial standing. When registering, insurers must submit a development plan for the next three years. The requirements for corporate governance of an insurance company will become proportional, i.e. the higher the level of significance, the more requirements. The importance of compliance, risk management, actuarial and internal audit functions is increasing. These individuals, as well as the insurance company's executives, must meet certain qualification requirements for professional suitability. It also establishes a differentiated approach to the minimum amount of capital: 1.8 million dollars USA for life insurance companies and insurers licensed to insure loans and certain types of liability, and 1.2 million dollars USA for other insurers.

2. Solvency requirements. Two solvency approaches are established: basic (Solvency II), which will be applied to insurers providing life insurance, licensed to insure loans and certain types of liability; and simplified (Solvency I). Within three years of the new Law "On Insurance" coming into force, all insurers are required to bring their solvency levels in line with the requirements of the simplified approach. It also provides for the calculation indicators of minimum capital and solvency capital. The minimum capital must ensure coverage of unforeseen losses in the course of the insurer's operations for one year. The solvency capital assumes a higher probability of risk occurrence compared to the previous indicator and will be introduced gradually.

3. Requirements for licensing activities, in particular, it is envisaged to obtain only one license instead of several for each type of activity. The NBU will license insurance companies by class of insurance. Insurers will have the opportunity to change the scope of their licenses by adding new classes or reducing the list of classes. The Law sets out 18 classes for non-life insurance and 5 classes for life insurance. However, the ban on combining life insurance and other types of insurance remains unchanged.

4. Requirements for insurance intermediaries who are required to registering with the unified register. The Law sets requirements for their level of competence and areas of training, as well as the need to disclose certain information to consumers of insurance services. In order to protect their funds, insurance intermediaries are required to open special accounts to receive insurance premiums paid by insureds.

5. Requirements for termination of operations. Insurers may withdraw from the market either compulsorily or voluntarily (e.g. through liquidation, reorganisation or transfer of the insurance portfolio). The Law establishes the grounds for declaring an insurer insolvent and revoking its insurance license, in which case it will be subject to a forced exit from the market. A temporary administration may be introduced to protect the interests of consumers. Insurers may also transfer insurance contracts to another insurance company, and the transfer of assets and liabilities will be subject to the NBU's consent and supervision.

6. Requirements for supervision and regulation under the risk-based approach. The main purpose of such supervision is to assess the future and current solvency of an insurer, as well as to identify risks and threats to the latter in the course of its operations at the initial stages. To this end, the NBU will take various supervisory actions: measures of influence and early intervention, as well as corrective measures. All of them can be used to restore and improve the financial condition of an insurance company.

7. Requirements for the sale of insurance services and insurance contracts. Insurers must inform insureds of all the terms and conditions of insurance contracts, including the amount of the insurance premium, the deadline for its payment and liability for violation of this deadline; as well as information on the cost of the

insurance service and the part of the commission paid by the client (Motor (Transport) Insurance Bureau of Ukraine; National Bank of Ukraine).

The same Law provides for the introduction of a clear classification of insurance, which allows for a clearer distinction between property and liability insurance. Such a classification of insurance types, which has long been used in developed countries, helps to organise the risk management system of enterprises in various sectors of economic activity.

In general, the regulatory framework for insure the insurance sector in Ukraine consists of four components (Figure 2.2), including regulations that define the provisions of general regulation, licensing and registration, supervision and inspection, and reporting.

The European insurance market is regulated based on:

1) basic EU directives regulating insurance activities – establishing uniform principles for the formation of reserve funds, assessment of the insurer’s financial condition; principles for the ratio of an insurance company’s assets to its liabilities; forms and deadlines for reporting, etc.;

2) directives aimed at maintaining and controlling a sufficient level of solvency of insurance companies – setting requirements for the amount of capital, financial resources of the insurer, control and reporting systems.

The EU Basic Directives (European Union) introduced a common terminology for insurance legislation in the EU countries; formed a single classification of insurance types; divided insurance companies into those engaged in risk insurance and those engaged in life insurance; unified requirements for the composition and formation of insurance reserves; divided risks into large and mass risks, as well as depending on the principle of insurance (active and passive); established common principles for assessing the financial condition of insurers; determined that supervision of insurance activities is carried out depending on the type of risk, and that insurers are supervised by the state registration authorities of the insurer; established reporting requirements for insurance companies; introduced a single licencs for EU insurers; introduced mutual recognition of the EU insurance regulatory systems; liberalised investment activities of insurers.

General regulation	Constitution of Ukraine Civil Code of Ukraine Commercial Code of Ukraine Tax Code of Ukraine On financial services and state regulation of financial services markets On insurance On compulsory insurance of civil liability of owners of land vehicles etc.
Licensing and registration	On financial services and state regulation of financial services markets On compulsory insurance of civil liability of owners of land vehicles Issues related to compulsory state insurance for certain types of insurance On approval of the Regulation on requirements to the ownership structure of financial service providers etc.
Supervision and inspections	On approval of the Regulation on the procedure for supervising non-bank financial groups on a consolidated basis On approval of the Regulation on organising, conducting and drawing up the results of inspections of non-banking financial services market participants On approval of the Regulation on the procedure for imposing administrative fines etc.
Reporting	On accounting and financial reporting in Ukraine On the audit of financial statements and audit activities The procedure for submitting financial statements On approval of the Rules for preparation and submission of reports by non-banking financial services market participants to the National Bank of Ukraine etc.

Figure 2.2 Regulatory-legal support of Ukraine in the insurance sector

Source: compiled by the authors based on data from (National Bank of Ukraine)

An important area is the directives aimed at maintaining and controlling a sufficient level of solvency of insurance companies. These functions in the EU are implemented through the “Solvency” project, whose main objective is to introduce requirements for insurer’s own funds based on an assessment of investment risk in the system as a whole.

Comparing the regulatory framework for insurance in the EU and Ukraine, it should be noted that Ukraine is gradually introducing some elements of the EU's insurance framework. For example, the new version of the Law of Ukraine "On Insurance" provides for the issuance of a single license to insurers and the grouping of insurance by classes, sets solvency requirements in accordance with Solvency I (simplified approach) and Solvency II (basic approach), and requires the calculation of minimum required capital and solvency capital, which are components of the first component of Solvency II.

However, Ukraine's legislative framework in the insurance sector has not yet fully reached the level of EU countries, so it needs to be constantly improved. For example, Ireland has established an Insurance Indemnity Fund at the legislative level, to which each insurer is obliged to pay 2% of gross premiums (National Bank of Ukraine, 2022). In view of this, it would be advisable for Ukraine to create a specialised institution at the state level – the Insurance Benefits Guarantee Fund, which would serve as protection for insurers in case of insolvency of an insurance company.

2. Analysis of the global risk insurance market

2.1. Correlation-regression analysis of the global insurance market development

Given the riskiness of the insurance sector, it is advisable to consider the most global risks, which are defined by the conditions of global or world uncertainty and affect all areas of economic activity, especially the insurance sector, since its task is to prevent possible losses of individuals and legal entities as a result of unforeseen events. The most influential are global risks, the dynamics of their change, as well as changes in the probability of their occurrence and country.

Thus, for 2022, the specialists of the public company Allianz SE, which is a German financial multinational corporation whose main activity is insurance, annually compile a business risk rating and identify the largest global risks (Figure 2.3).

Given the very rapid digitalisation processes over the past few years, which the world has been experiencing in all areas, they provide not only great development opportunities but also create threats to the internal (related to the actions of insiders) and external

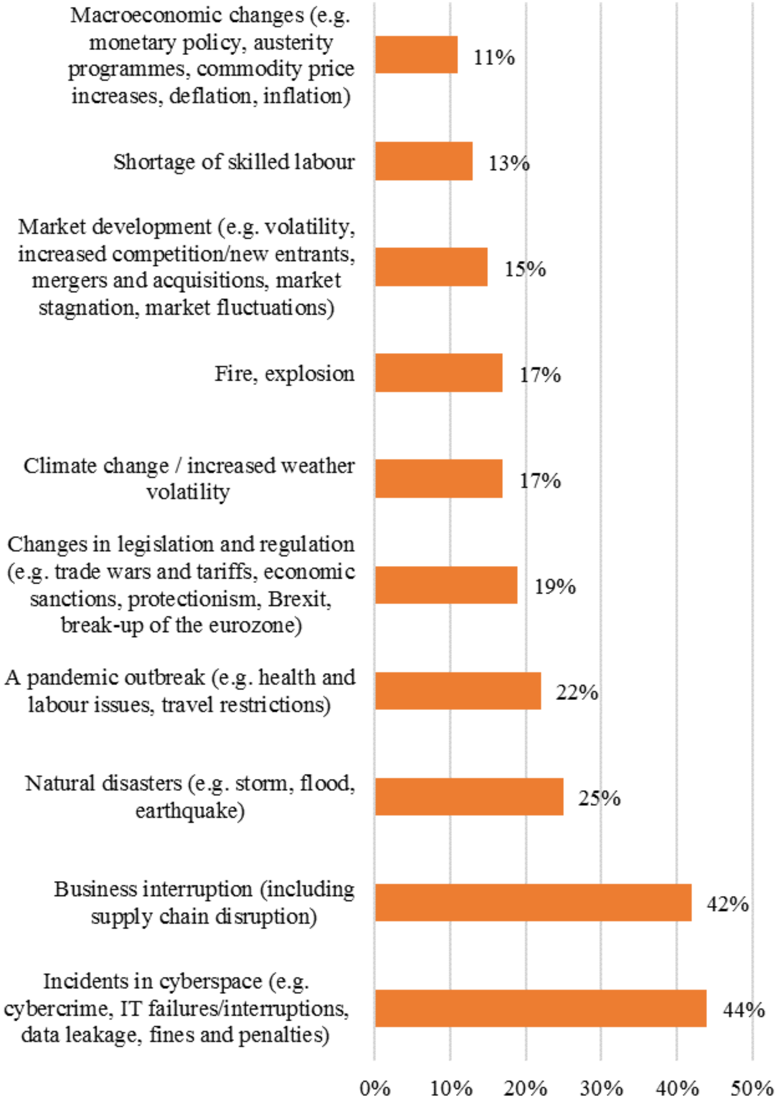


Figure 2.3 Global risks for 2022

Source: compiled by the authors based on data from (European Union) (related to distant stakeholders) emanating from the assets and technologies used by certain entities. And it is the risk of cyber incidents that has remained the most influential risk for several years in a row. This conclusion was reached by experts of the World Economic Forum, which took into account the opinion of more than 12.000 risk managers of global enterprises and country leaders who identified critical short-term risks for their 124 countries, which serve as a basic basis for decision-making at the national level and provide an idea of how short-term national priorities can compare with global risks and prospects (World Economic Forum, 2020-2022).

The second strongest risk is the risk of business interruption (including supply chain disruption), which has become quite acute with the onset of the global Covid-19 pandemic, as closed borders and inability to travel have posed serious threats to the world's logistics processes. Existing inequalities and uneven economic recovery in different countries may exacerbate social divisions and geopolitical tensions. The above also has a significant impact on environmental risks: "climate change", "extreme weather", "loss of biodiversity", which is the third largest global risk. In the future, this could lead to debt crises and geo-economic confrontation. It also leads to an increase in social risks in the form of "erosion of social cohesion", "livelihood crises" and "deterioration of psychological health".

It should be noted that the economic consequences of the pandemic are exacerbated by imbalances in the labour market, education and skills, which may have negative consequences around the world. Growing insecurity as a result of economic difficulties, the increasing effects of climate change, political instability and military escalation in various countries (especially Ukraine) are already prompting millions of people to leave their homes in search of a better future abroad in their home countries. Therefore, experts identify "forced migration" as a major long-term problem for many countries. In view of all this, a divergent economic recovery is needed, which can be facilitated by the development of the insurance sector.

To present the impact of the insurance sector on the country's economic development, we are analysing the dynamics of changes in net premiums earned in some countries of the world, as well as their share in the GDP of these countries (Tables 2.1-2.2).

Table 2.1

Dynamics of net written insurance premiums earned and payments for non-life insurance in the European Union in 2019-2021, million EUR

Country	Net written insurance premiums earned			Insurance payments		
	2019	2020	2021	2019	2020	2021
Austria	8111.60	8356.55	8614.12	4857.63	4768.55	5089.19
Belgium	14223.41	13615.67	15596.70	8365.56	7380.14	9221.31
Bulgaria	1612.22	1677.29	1740.24	799.62	785.45	782.56
Croatia	788.69	854.37	957.52	394.06	447.35	484.05
Cyprus	386.23	389.30	406.79	205.72	172.24	191.52
Czech Republic	3218.86	3322.04	3771.38	1745.23	1686.18	1915.32
Denmark	8501.60	8974.23	9606.16	5402.02	5367.04	5493.07
Estonia	553.67	484.01	501.50	322.37	281.40	315.09
Finland	3240.00	3532.61	3723.63	2013.28	1979.27	2132.12
France	105382.26	105619.79	111663.33	70645.54	70567.33	75710.52
Germany	105244.04	108818.39	113169.75	65916.56	68795.53	70728.93
Greece	1662.62	1692.99	1712.91	750.51	670.23	731.10
Hungary	1452.42	1423.78	1512.74	612.07	562.21	572.67
Iceland	476.56	407.43	460.97	385.54	329.01	343.78
Ireland	14627.34	19040.41	21997.97	8826.55	12462.57	13461.81
Italy	30401.54	30125.88	30939.48	17657.94	15607.18	17559.52
Latvia	356.45	332.27	331.37	228.76	198.32	212.03
Liechtenstein	599.29	633.75	685.84	424.33	354.94	325.55
Lithuania	448.99	481.43	530.46	248.90	259.75	313.65
Luxembourg	9547.60	9960.97	10882.46	5992.41	6045.95	6284.13
Malta	1543.61	1513.92	2254.48	646.02	713.34	1221.94
Netherlands	59975.55	61768.35	62549.80	53631.89	54823.76	55950.00
Norway	4268.50	4506.62	4193.94	3691.44	3807.59	3852.76
Poland	8041.30	7702.26	7944.00	4151.97	3911.93	4011.14
Portugal	3716.59	3725.70	3994.53	2225.47	2016.48	2230.02
Romania	1123.58	1149.02	1190.84	675.97	636.00	687.22
Slovakia	969.02	981.52	850.45	487.89	448.29	385.06
Slovenia	1774.56	1889.04	1917.19	1182.26	1200.41	1206.46
Spain	31486.26	31978.10	32925.37	20675.17	19742.15	21265.02
Sweden	10273.05	11347.63	10561.93	7478.82	7713.62	7135.94
Average value	14466.91	14876.84	15572.93	9688.05	9791.14	10327.12

Source: compiled by the authors based on data from (European Insurance and Occupational Pensions Authority)

Table 2.2

Dynamics of net written insurance premiums earned and payments by countries under life insurance of the European Union in 2019-2021, million EUR

Country	Net written insurance premiums earned			Insurance payments		
	2019	2020	2021	2019	2020	2021
Austria	7637,24	7661,97	7791,52	8742,62	9271,42	8576,34
Belgium	17083,43	15895,61	17013,09	17827,34	18766,59	18032,56
Bulgaria	135,79	139,60	128,05	63,63	76,62	80,37
Croatia	410,62	348,09	384,51	326,45	380,91	405,53
Cyprus	325,41	350,42	390,40	234,95	242,82	220,67
Czech Republic	1738,98	1620,40	1702,37	1457,57	1203,82	1335,87
Denmark	19104,85	21280,89	22453,44	17320,53	19458,97	20095,10
Estonia	213,21	232,50	263,80	99,17	107,28	139,69
Finland	6022,85	4022,94	5105,80	7617,26	4366,78	4114,54
France	169098,06	135554,50	170451,52	142880,18	136335,14	148781,68
Germany	149159,26	152722,38	155681,63	112930,12	112752,97	116647,51
Greece	2083,03	1964,24	2278,43	1396,06	1343,03	1584,47
Hungary	1509,86	1427,22	1592,65	1267,32	1082,11	1152,00
Iceland	38,02	36,65	42,65	12,93	11,44	11,18
Ireland	35738,43	38669,98	49412,34	30227,51	29295,15	33012,76
Italy	105826,96	101234,39	106050,09	76412,39	76463,08	76333,88
Latvia	118,71	117,64	112,77	85,33	78,65	94,05
Liechtenstein	2073,73	1957,65	1294,46	2019,82	2211,30	2195,22
Lithuania	121,76	129,55	140,00	74,10	74,32	90,46
Luxembourg	19739,14	18666,73	24685,37	11979,83	12578,08	12465,17
Malta	1981,58	2328,66	3053,46	1482,16	1761,35	2316,53
Netherlands	15037,15	13916,67	13427,61	21100,64	20066,03	20107,85
Norway	11334,38	10490,11	17757,70	13015,42	10201,63	17360,88
Poland	4764,06	4294,96	4517,87	4312,34	3838,03	4075,25
Portugal	6524,73	4059,29	7210,14	5844,97	7482,10	8205,48
Romania	383,85	371,35	424,44	195,12	214,53	228,53
Slovakia	962,44	880,07	729,90	759,24	630,59	559,12
Slovenia	467,77	438,81	464,62	421,53	430,22	419,99
Spain	28680,40	21026,38	24860,54	26022,11	24038,19	25017,38
Sweden	19463,76	23270,53	33343,00	13497,95	15373,34	19146,25
Average value	20925,98	19503,67	22425,47	17320,89	17004,55	18093,54

Source: compiled by the authors based on data from (European Insurance and Occupational Pensions Authority)

It is worth noting that non-life insurance accounts for approximately 40-44% (in terms of earned insurance premiums) of the total insurance market and has a positive growth trend. Thus, the amount of net premiums earned in the EU insurance market is increasing annually: from 1063103 million EUR in 2019 to 1142079 million EUR in 2021. The amount of claims is also increasing: from 810268 million EUR in 2019 to 852619 million EUR in 2021. Over 3 years, the amount of net written insurance premiums earned by 7.81%, compared to a slightly lower increase in claims by 6.60%.

Non-life insurance premiums accounted for 41-43% of total earned premiums during the period under review, compared to life insurance, whose net earned premiums accounted for 57-59% of total premiums. The structural ratio of insurance payments by type of insurance remains consistent with the indicator of earned premiums, but amounts to 35-37% for non-life insurance and 63-65% for life insurance.

In 2019-2021, the largest earned premiums and payments paid in the non-life sector were in Germany: 113169.75 million EUR and 70728.93 million EUR, respectively. The smallest amount of premiums was collected in Latvia during the period under review, with the amount decreasing annually: from 356.45 million EUR in 2019 to 331.37 million EUR in 2021. The smallest non-life payments were paid in Cyprus – 191.52 million EUR in 2021. In life insurance, the largest premiums earned and payments paid were in France: 170451.52 million EUR and 148781.68 million EUR, respectively. The lowest amount of premiums and payments during the period under review was in Iceland: 42.65 million EUR and 11.18 million EUR, respectively. The average amount of premiums earned in the EU countries was 19.000 million EUR, and the amount of payments paid was 14.000 million EUR.

Using the available statistical information, let us trace the relationship between gross domestic product and gross insurance premiums in some countries. The results are shown in Figure 2.4.

Statistical information from 36 countries over the past 21 years (664 observations directly) was used in the process of calculations and observations using correlation-regression analysis to build an economic-mathematical model of the relationship between gross insurance premiums (GIP) and gross domestic product (GDP) (2.1).

$$GDP = 7{,}3611 \cdot GIP + 321710 \qquad (2.1)$$

There is a close, straightforward relationship between the studied indicators with a correlation degree of 1.0. The standard error is 505599.33 million dollars USA. The standard error is 505599.33 million dollars USA. The coefficient of determination R^2 for the regression equation is 0.9691. The F-value and P-value are both 0, which means that the equation is statistically significant at the 99% confidence level. Statistical significance is also confirmed at the 99% level of reliability by the absence of a change in the sign of the free term (constant) of the equation when moving from the “bottom 99%” to the “top 99%” column.

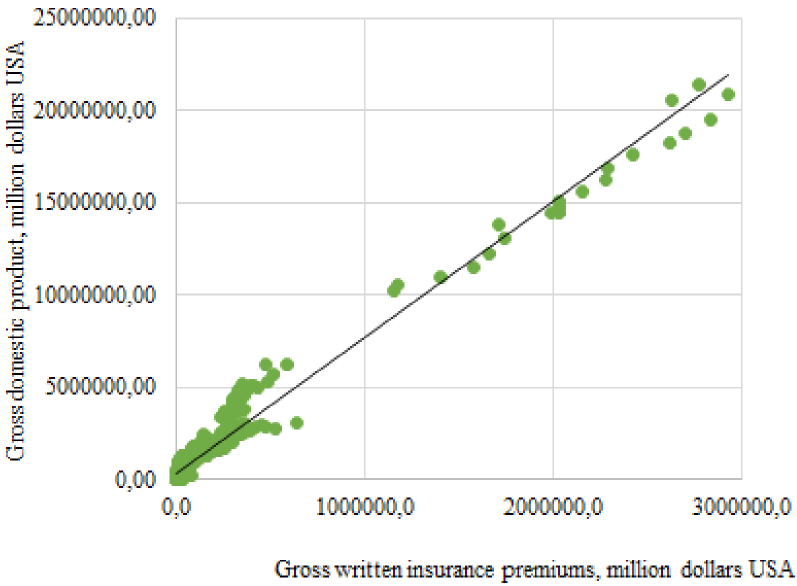


Figure 2.4 The relationship between gross domestic product and gross written insurance premiums in some countries

Source: built by the authors

Thus, the obtained interdependence can be considered reliable and suitable for use in further analysis and forecasting of the global and risk types of insurance market in Ukraine.

2.2. Dominants of the development of risk types of the global insurance market

The ongoing uncertainty and changing operating environment for insurance companies around the world is a breeding ground for risk awareness, and it is amplifying the impact of the two megatrends of climate and demographic changes, which will continue to be the main drivers of demand for risk protection. The pandemic and the war in Ukraine are wake-up calls for better risk management and even greater demand for protection. The industry must succeed in maintaining its economic and social relevance by offering innovative solutions to new and growing risks.

Insurance and affordability issues are likely to become increasingly important in the coming years. This requires a level of creativity and cooperation with all stakeholders, customers, carriers and policy makers, even beyond previous efforts. Currently, the largest risk insurance subsectors of the global insurance market in terms of premiums written are property and casualty (P&C) and health insurance, which account for almost half of the risk insurance market.

These conclusions are based on the analysis of non-life insurance premiums in some countries over 11 years (2010-2020) by classes defined by law in the countries of the Organisation for Economic Co-operation and Development (OECD). Table 2.3 shows the volume of insurance premiums for 2020 by types risk class of insurance in the context of some OECD countries and their structural ratio, as shown in Figure 2.5.

Property and casualty insurance grew by 4.7% during 2020, while increasing its market share to 31% of global premiums. Mature markets – North America, Western Europe and developed Asia-Pacific region – accounted for 61% of the absolute growth in P&C premiums during the period. The emerging markets of Latin America, Asia-Pacific region (Japan Insurance Outlook, 2020) and Africa registered the fastest growth rates of 13%, 9% and 8% respectively. The largest contributor to the absolute growth of P&C premiums in 2020 was the USA (38%), mainly due to an increase in motor insurance premiums. China accounted for 20% of the absolute growth. In China, certain government policies have led to growth in liability, agriculture, credit and warranty products. Similarly, the Indian government is pushing to increase coverage of crop insurance products.

Table 2.3

Volumes of insurance premiums by types risk classes of insurance in some OECD countries in 2020, million dollars USA

Country	Insurance							
	vehicles	marine, aviation and other transport	cargoes	fire and other property damage	material damage	general liability	accident and health insurance	other than life insurance
Belgium	4 348	79	105	3 511	622	1 023	4 145	987
Chile	929	250	0	1 731	110	67	101	791
Czech Republic	2 224	38	:	1 109	127	717	548	90
Denmark	2 968	191	:	3 722	291	532	2 583	272
Estonia	413	15	:	196	30	31	77	5
Finland	1 447	109	50	950	24	200	1 181	158
France	26 435	59	:	21 596	2 202	3 335	62 796	190 293
Germany	34 647	3 177	:	35 409	2 218	14 356	57 700	6 337
Greece	1 081	44	0	459	49	102	363	157
Iceland	273	20	0	116	1	31	55	0
Ireland	2 294	568	:	1 817	890	1 544	2 924	25
Israel	3 982	13	51	1 428	113	1 054	2 174	153
Italy	17 817	344	185	6 544	1 168	3 743	7 035	1 447
Japan	48 659	951	1 828	19 016	4 071	6 225	9 193	1 491
Korea	16 617	597	:	234	1 720	967	33 752	32 801
Lithuania	452	1	4	149	30	27	90	5
Latvia	365	3	3	109	24	24	95	12
Luxembourg	706	87	108	412	673	252	257	38
Mexico	4 754	2 047	:	260	657	619	4 930	1 614
Norway	2 803	1 706	:	2 810	40	389	1 269	1 037
Poland	6 029	92	:	1 955	446	654	846	368
Portugal	1 791	34	22	971	112	145	2 125	161
Slovakia	839	0	0	355	2	92	121	-214
Slovenia	681	19	9	324	49	88	882	49
Spain	12 462	282	214	1 163	203	1 177	11 628	12 104
Switzerland	6 620	380	:	4 507	814	2 183	15 450	950
Turkey	3 721	169	166	2 352	144	275	1 687	32
United Kingdom	15 325	7 942	:	25 058	4 397	17 126	8 226	2 781
USA	296 108	2 211	30 246	171 403	22 482	147 883	892 512	2 845

Source: compiled by the authors based on data from (OECD)

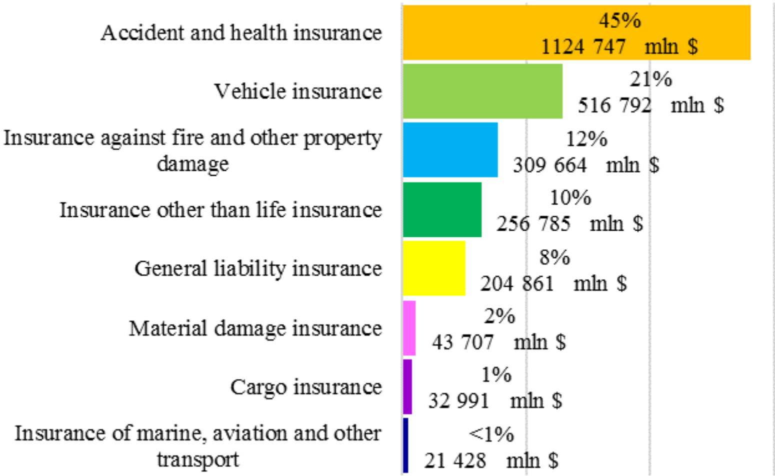


Figure 2.5 The structural ratio of insurance premiums by types risk class according to some OECD countries in 2020

Source: built by the authors

In 2020, motor insurance accounted for 45% of global P&C premiums, continuing to contribute to the overall growth of the industry. However, growth in this product line slowed from the 6% CAGR recorded from 2013 to 2018 to 4% in 2020. Meanwhile, every other P&C product line saw higher growth rates during 2020 compared to 2013-18. Global underwriting profitability reached 99% in 2018, when claims payments reached an all-time high due to natural disasters around the world, particularly in the USA. The net combined ratio improved slightly to 96% in 2019 and 97% in 2020.

Property and casualty insurance is also present and developing in Ukraine, but health insurance is not as deeply developed as in other countries. Thus, health insurance remains the fastest growing segment: it reached 6.9% and 5.9% growth in 2018 and 2019 respectively, and accounted for about 26% of global insurance premiums in 2019. Top performing regions in terms of contribution per EUR 69 the absolute growth in total healthcare premiums in 2019 was driven by North America – up 63%, and Asia-Pacific region – up 22%. North America is the largest private healthcare market in terms of premiums and has consistently contributed to global healthcare premium growth, with an increase of 5% in 2019. Developed markets in Western Europe and developed countries in Asia-Pacific region grew by 4% in 2019.

The average combined ratio of the global health insurance market remained stable at around 98% from 2015 to 2019. Net claims ratios in most Western European countries, including France, Germany (Germany Insurance Outlook, 2020), Italy, Spain and the United Kingdom, remained stable in the range of 70% to 85% from 2015 to 2019. The net loss ratio in the USA was also stable at 86% in that period. However, in some emerging markets, such as India, the net claims ratio decreased from 102% in 2015 to 93% in 2019. Net premiums earned in India grew faster than claims during this period. Overall, the expense ratio for most countries has remained stable over the past few years. The USA and Western European countries recorded some of the lowest net expense ratios from 2015 to 2019, with a 13% ratio in the USA.

3. The Ukrainian risk insurance market

3.1. The functioning of the Ukrainian insurance market in the face of uncertainty

In the context of economic restructuring, changes in the regulatory authority (in accordance with the law) and regulatory and legislative ensure, i.e., in the context of institutional changes, in the process of digitalisation (Demianchuk & Drozdyna, 2022) and the Internetisation of most business processes of functioning in such turbulent conditions, which are constantly changing in an uncertain direction, it is advisable to study these conditions of activity for the development of risk types insurance. All these processes complicate the operating conditions for insurance organisations and require their adaptation to new conditions, in which one of the most important tasks remains to ensure sustainable and stable development.

When institutional and institutional changes take place, there is no 100% probability of the consequences of decisions made under such conditions, but there is a probability for each of their alternatives. However, during martial law in the country, unfortunately, it is not possible to imagine or predict any probability of certain outcomes under alternative scenarios.

All decisions made by leading experts in various areas of economic activity are directly related to certain risks and uncertainties. Insurance is a sector that is directly related to risk and uncertainty and differs significantly from other areas of economic activity, which leads to specific features in insurance management. However, risk differs significantly from uncertainty. Thus, risk is "a situation when the outcome of a process is unknown, but its possible alternative consequences are known; there is a possible danger, an action at random, which requires: on the one hand, courage in the hope of a happy ending, and on the other hand, consideration of the material justification of the degree of risk (lack of 100% certainty). Uncertainty, on the other hand, is a situation in which the probability of obtaining different results is unknown; a property of the decision-making object, which is expressed in its unreasonableness, ambiguity, which leads to insufficient possibility of analysis, understanding, determination of its present and future state".

The essence of uncertainty is that "in the presence of an unlimited number of states of objective conditions, it is impossible to assess the probability of occurrence of each of these states due to the lack of assessment methods. The criterion for choosing decisions in these circumstances is determined by the inclinations and subjective assessments of the decision maker. In this case, the task is to reduce uncertainty by reducing it to risk. And in this case, an important role is played by asking questions such as (Reshetylo & Fedotova, 2020):

1) how large is the existing uncertainty?
2) what should be done to reduce it?
3) what are the costs of reducing it?
4) what is the degree of uncertainty in the course of implementing a particular course?"

Decisive decisions remain with the management of insurance companies and the assistance of the regulatory authority, which they have to make in rapidly changing (extreme) circumstances. The information base for decision-making includes the goals and objectives of insurance companies providing risk insurance services; their state (technical, economic, social, innovation, investment, etc.); development features (patterns, trends, mechanisms of functioning); forecasts of changes in the socio-economic and political situation; alternative strategies and decisions on functioning and development, taking into account the consequences of implementing alternatives, etc.

The foreign insurance market is developing rapidly thanks to innovative InsurTech and FinTech technologies. A well-organised insurance market infrastructure and insurance culture contribute to business revitalisation and solving social problems (Demianchuk & Drozdyna, 2021). This is the motivation for the introduction of these technologies in Ukrainian business to join the world level of development of socio-economic relations and entrepreneurial activity, and the steps to implementation are reflected in strategic documents: The Strategy for Sustainable Development of Ukraine until 2030, the National Economic Strategy, the Strategy for Digital Development, Digital Transformation and Digitalisation of the Public Finance Management System until 2025.

In Ukraine, the most popular types of insurance are related to road safety (MTPL, CTP, CASCO, Green Card, etc.), so most InsurTech developments are directed at insurance companies with a relevant specialisation. Since November 2019, the MTIBU has been operating an innovation hub to promote startups in the financial and insurance industry and road safety. One of the successful projects selected is “My Policy”, a mobile application used to draw up an electronic protocol in the event of a road accident (Motor (Transport) Insurance Bureau of Ukraine). As the introduction of the latest technologies in Ukraine has its own priority features, and the range of InsurTech projects is not yet extensive. In the context of digitalisation, the main trends for the insurance sector in Ukraine are (Demyanchuk, Maslii, & Gdanova, 2021; Klapkiv, 2018):

– omnichannel communications – a single environment with online and offline contact channels using various gadgets;

– chatbots – virtual consultants that provide information assistance to customers at any time;

– Big Data – analysis and processing of large amounts of information about policyholders and victims;

– digital versions of insurance policy – an electronic format of an insurance service document that has the same valid data;

– Blockchain – a system of remote access to data that is the most trusted for the reliability of online product storage.

In general, innovative technologies create a competitive environment for insurance companies to try to be the most advanced, which is reflected in the financial results of companies, in saving time on typical operations, using social networks as an alternative channel for the distribution of products and services, reengineering business processes and diversifying products and services. The vast majority of insurers use the Internet not only as an additional channel for selling insurance services (Kobko, 2019), but also for virtual scaling and online growth. When using ERP and CRM systems, insurance companies can increase the technological efficiency of business processes by automating and optimising customer communication processes to build a highly efficient online business.

Thus, achievements in the field of InsurTech are the most modern and effective tools for business, as digital systems are essential for business entities, including insurance companies. Information technology contributes to positive changes in insurance business processes in Ukraine, thereby creating the preconditions for the development of the organisation and systematic operation of a full-fledged business in a virtual environment with a synergistic effect. Currently, the Ukrainian insurance market is focused on the maximum possible transition to online, which is the beginning of a new vision of doing insurance business.

Under the influence of the development of innovative technologies, the insurance market is undergoing significant changes, which are reflected in the qualitative changes in the activities of insurance companies that have chosen the vector of digital development. The experience of foreign insurance markets shows that a well-established insurance market actively contributes to business development and solving social problems (On Approval of the Regulation on Financial Monitoring by Institutions, 2020). This is a certain incentive for achieving the European level of development of socio-economic relations, entrepreneurship and revitalisation of the investment climate in Ukraine.

The introduction of technologically innovative economic solutions capable of introducing qualitative changes in the insurance market in the activities of insurance companies will contribute to economic stabilisation and economic growth by accumulating financial resources, creating additional jobs and reducing the impact of risks. Therefore, the peculiarities of the functioning of the Ukrainian insurance market under conditions of uncertainty require further study.

The insurance market is of significant importance in the Ukrainian economy, as an unregulated system of state supervision makes it impossible for insurance market participants to function effectively. This necessitates ensuring an adequate level of national supervision and control over insurance activities in Ukraine to enable the evolution of insurance services and the integration of the domestic insurance market into the global insurance space. Therefore, it is necessary to study the interdependence of the level of economic development and the volume of gross insurance premiums in different countries.

3.2. Monitoring the development of risk types insurance in Ukraine

The evolution of market relations and the creation of new means of communication between all business entities go hand in hand with the probable occurrence of unexpected situations in which the degree of risk increases at each stage. Insurance has been the most effective method of risk management for many centuries. It contributes to the stability of society and guarantees that owners will receive compensation in case of loss of property or income (Sholoiko, 2017).

The insurance market is one of the leading components of the financial system, as it is responsible for redistributing risks in the economy, ensuring a receptive environment for the efficiency of enterprises, both internal and external, and reducing the overall level of risk (Zhuravka & Vasylchuk, 2017). Therefore, attention should be paid to the ratio of the number of financial sector institutions to their assets (Table 2.4). In particular, it can be seen that the number of non-bank financial institutions, such as credit unions, financial companies, and pawnshops, is much higher than that of banks, and their assets are much lower, despite the risk activities of insurance companies that are also part of them.

The Ukrainian market is mostly represented by insurance companies providing direct risk insurance. Of the total number of companies, their number was 251 in 2018, 210 in 2019, 190 in 2020, and 142 in 2021. According to R. Kornyliuk, such a rapid reduction (by more than 40%) is due to the voluntary withdrawal of licences and the withdrawal of inactive companies from the market (Kornyliuk, 2022).

Table 2.4

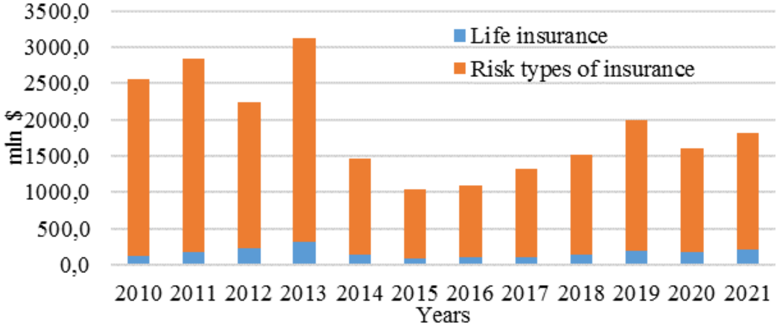
Dynamics of changes in the number of banks, non-bank financial institutions and insurance companies in Ukraine and their assets in 2018-2021

Institutions	Criteria	Years			
		2018	2019	2020	2021
Total	Assets, mln. USD	56 141	72 875	73 579	84 980
	Number of companies	2 015	1 955	1 867	1 687
Insurance companies	Assets, mln. USD	2 293	2 696	2 296	2 332
	Number of companies	281	233	210	155
Banks	Assets, mln. USD	49 108	63 045	64 468	75 296
	Number of companies	77	75	73	71
Credit unions	Assets, mln. USD	80	106	82	84
	Number of companies	358	337	322	278
Financial companies	Assets, mln. USD	4 526	6 848	6 596	7 157
	Number of companies	940	986	960	922
Pawnshops	Assets, mln. USD	134	180	137	111
	Number of companies	359	324	302	261

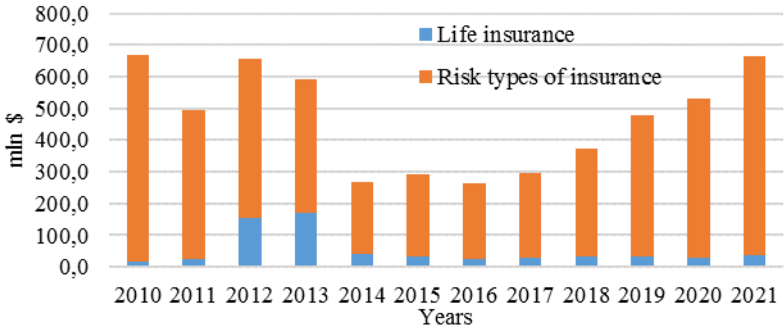
Source: compiled and calculated by the authors based on data from (National Bank of Ukraine, 2022)

Among other financial institutions, insurance companies hold only 2-4% of the total assets in the market, which is a rather negative situation given the riskiness of their activities, as there is also a tendency for these assets to decrease in the total market. However, this can also be explained by a decrease in the number of companies.

It should be noted that the structure of the Ukrainian insurance market is very different compared to the structure of the insurance markets of other countries previously analysed, where life insurance and risk insurance almost occupy the same positions. At the same time, the Ukrainian market (Figure 2.6) is dominated by the risk insurance market, which accounts for more than 95% of the total amount of earned insurance premiums and insurance payments / compensations.



a) gross receipts of insurance payments (premiums, contributions)



b) insurance payments

Figure 2.6 Dynamics of changes in gross receipts of insurance payments (premiums, contributions) and insurance payments for risk types insurance and life insurance in Ukraine in 2010-2021

Source: compiled by the authors based on data from (National Bank of Ukraine)

Among risk types of insurance, insurance premiums are higher for voluntary types of insurance (76.5%) than for compulsory types, which account for only 23.5%. However, compulsory insurance prevails in terms of the number of contracts concluded. Therefore, it can be said that voluntary insurance brings the greatest effect to insurance companies (Table 2.5), but the amount of payments under these contracts is also more significant.

Table 2.5

Dynamics of changes in gross receipts of insurance payments (premiums, contributions), payments (indemnities), number of concluded life insurance and risk insurance contracts in Ukraine in 2010-2021

Years	Life insurance		Risk types of insurance					
	Gross receipts of insurance payments (premiums, contributions), mln. USD	Insurance benefits, including annuity payments and redemption payments, mln. USD	Gross receipts of insurance payments (premiums, contributions), mln. USD			Insurance payments / reimbursements, mln. USD		
			total	voluntary	mandatory	total	voluntary	mandatory
2010	113.86	16.33	2437.26	2437.00	0.25	651.24	651.24	0.00
2011	168.51	23.77	2671.23	2258.72	412.50	469.11	464.09	5.02
2012	226.39	155.79	2021.87	2021.51	0.36	501.98	501.98	0.00
2013	309.86	170.16	2817.73	2817.72	0.01	419.92	419.92	0.00
2014	136.97	39.19	1322.37	1317.31	5.06	229.47	229.47	0.00
2015	91.11	34.63	942.77	942.77	0.00	258.06	258.05	0.00
2016	101.36	25.16	984.52	984.51	0.01	240.45	240.45	0.00
2017	103.81	27.28	1225.09	1219.79	5.30	270.67	270.67	0.00
2018	141.08	32.41	1377.77	1368.36	9.40	340.13	340.13	0.00
2019	195.22	31.80	1793.67	1696.14	97.54	446.11	446.11	0.00
2020	177.49	29.17	1420.26	1115.68	304.59	502.36	370.72	131.64
2021	215.63	37.00	1606.63	1229.73	376.91	627.96	473.77	154.19

Source: compiled by the authors based on data from (National Bank of Ukraine)

Comparing the share of insurance payments in the volume of insurance premiums received, it is determined that there is an upward trend in this indicator. For example, in 2014, the amount of insurance payments under voluntary risk insurance (Figure 2.7) was 17.42% of gross insurance premiums, and in 2021 the value of this indicator was 38.53%. Also, during the analysed period, there was a significant change in the number of compulsory insurance contracts, the number of which has halved over the past two years.

When analysing the structure of gross insurance premiums, it is necessary to highlight the elements of the insurance portfolio by the most common types of insurance. Thus, according to the results of 2020, more than a third of the insurance portfolio belongs to transport types (19% of hull insurance, 13% of MTPL, 3% of Green Card and liability insurance). Health insurance (16%) and life insurance (11%) are consistently among the top types of insurance in Ukraine, unlike liability insurance (3%) and financial risks (3%). At the same time, the volume of insurance premiums under voluntary financial risk and professional liability insurance contracts is only about 14% of the total volume of insurance payments for voluntary insurance other than life insurance. Of these, 12.4 million dollars USA was received in insurance premiums for credit insurance and 106.0 million dollars USA for financial risks.

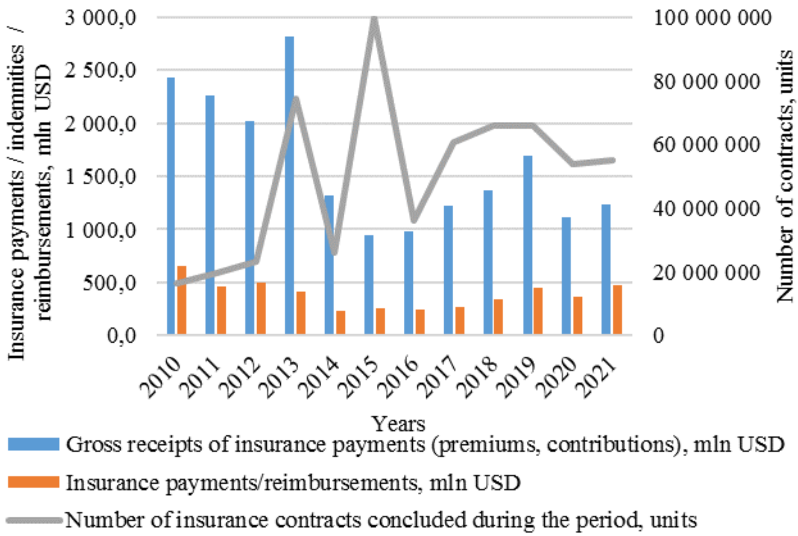


Figure 2.7 Dynamics of changes in gross receipts of insurance payments (premiums, contributions), insurance payments / indemnities and the number of concluded voluntary insurance contracts for risk types of insurance in Ukraine in 2010-2021

Source: compiled by the authors based on data from (National Bank of Ukraine)

In 2021, the situation is slightly different. The largest volume of insurance premiums for voluntary insurance was received from land transport insurance (except for railway transport) – 32%, health insurance (continuous health insurance) – 19%, and property insurance (other than provided for in clauses 7-12) – 11%.

Approximately the same income was received from medical expenses, accidents, financial risks, fire risks and cargo and baggage insurance. In compulsory insurance, the majority of insurance premiums are generated in the area of motor third party liability insurance (67% under domestic contracts and 17% under international contracts). An additional 10% of insurance premiums are generated by civil aviation insurance. The share of premiums ceded for reinsurance increased in the last quarter of 2021 and amounted to 19%. Of these, 56% belong to non-resident reinsurers.

Analysing the volume of insurance payments / reimbursements, it can be noted that their level continued to grow, and the largest volume of payments among voluntary insurance services was received by clients for insurance of land transport, except for railway transport, the share of which in the total volume was 39%. Pandemic policies related to health insurance (continuous health insurance), which remained popular throughout the year, accounted for 27% of total insurance payments. The third group of risks was fire and natural disaster risks, which accounted for 16% of total insurance payments. In compulsory insurance, almost all payments are paid under motor third party liability insurance (84% under domestic contracts and 15% under international contracts).

Given that insurance services are provided by insurance companies, it is advisable to analyse the TOP 5 companies that form the majority of the market. Thus, the leaders in the field of vehicle insurance against loss, damage or theft (19.17% market share) and property insurance (11.07% market share) are ARKS Insurance Company. Green card sales (28.50% market share) and insurance against fire risks and natural disasters (11.85% market share) are sold by PJSC IC USG. Voluntary health insurance (12.62% market share) and accident insurance (12.58% market share) – PJSC IC Unica. PJSC IC VUSO is the leader in financial risk insurance (4.84% market share); PJSC IC Alfa Insurance – health insurance in case of illness (22.17% market share); Alliance Ukraine LLC – cargo and luggage insurance (5.58% market share).

Currently, the Ukrainian insurance market is at the stage of gradual progressive integration into the global insurance system in conditions of uncertainty and instability (Demianchuk & Gurzhiy, 2018; Demianchuk et al., 2019). Insurers are actively looking for alternative solutions to reduce risks and implement a system of sustainable movement towards European and global standards of insurance business. The foreign experience provides an opportunity to assess the quality of the latest development trends in insurance and to adopt them. Insurance activity in our country, like most other areas, is still based on ad hoc decisions instead of the adoption of modern regulations and their implementation. Methodological ensure in terms of regulations, development strategies, and their practical implementation are the stages of improving the insurance business processes. Therefore, successful progress in the insurance area requires the development and implementation of appropriate measures aimed at ensuring the efficiency and profitability of insurance activities.

The Strategy for the Development of the Insurance Market of Ukraine in 2012-2021 (Strategy, 2012) is now at the last third stage and provides for the implementation of the following measures: completion of the modernisation of the state regulation of the insurance market; updating the regulatory framework of the leading insurance areas based on the accumulated experience; and making the Ukrainian insurance market part of the global financial market. Unfortunately, it cannot be said that these measures have been implemented in practice, as the above factors restraining insurance development are still present in the insurance culture, and in the context of integration into the global financial community, it is necessary to implement foreign insurance practices. An example of such an update is the White Paper “The Future of Insurance Market Regulation” (National Bank of Ukraine, 2020).

Maintaining the stability of the financial sector, which is the main environment for insurance companies, is based on real and continuous regulatory supervision of these financial institutions. To improve the situation in the Ukrainian insurance market, the government is implementing a methodological set of measures to create a new model of insurance market regulation based on international practices.

4. A model for the development of risk types insurance in Ukraine in the context of European integration

Insurance activities contributes to competitiveness and the development of trade and commerce by increasing creditworthiness and reducing the overall amount and cost of capital required, and by reducing overall risk – allowing businesses to enter new business ventures and take on additional risk. Insurance activities replace and complement public sector spending on safety programmes, and contribute to loss prevention directly by investing in loss prevention programmes either such as medical research, fire or road safety, or indirectly by linking insurance premiums to loss experience.

Insurers, in addition to their core functions, i.e., risk transfer and compensation services, perform the same functions as other financial intermediaries. The development of insurance contributes to economic growth in several ways: by increasing the liquidity and availability of total capital in the economy, and even the efficiency of capital allocation. In addition, empirical evidence from developed countries shows that insurers are among the main employers and investors. Thus, they can have a positive impact on important factors of economic growth, such as the private savings rate, the percentage of savings used for investment, and the marginal productivity of investment. Their activities, like those of banks, can contribute to economic growth. Therefore, the model for the development of risk types insurance in Ukraine should take into account the above arguments and contain the principles that should guide the risk type's insurance sector and the tools for implementation (Figure 2.8).

The proposed model for the development of risk types of insurance is a description of theoretical and practical tools, the use of which is aimed at the comprehensive development of insurance market players. The purpose of development is to improve the welfare of the population and business entities of the country. The objectives of such development may include:

– influence on the adoption and improvement of the quality of decisions related to the activities, life and development of the population;

– increasing the public activity of the population;

– changing the role of the population and business entities on the insurance market;

– taking into account the needs of the population of different social groups and business entities in various spheres of economic activity;

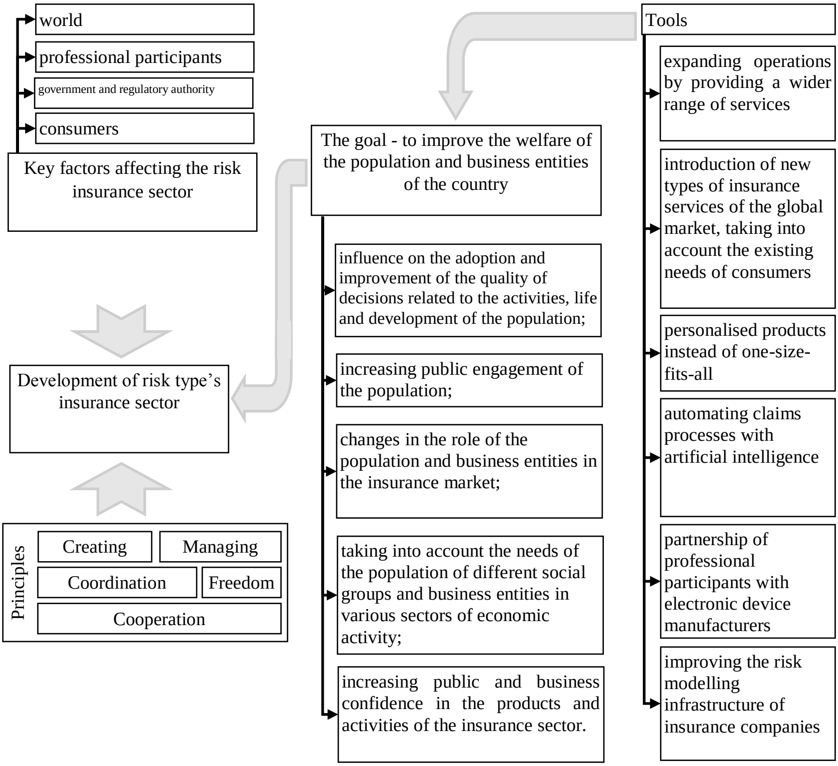


Figure 2.8 Model for the development of risk types of insurance
Source: compiled by the authors

– increasing the confidence of the population and business entities in the products and activities of the insurance sector.

This goal and objectives can be achieved by adhering to certain principles:

1. Creating – maintaining not only a competitive base, but also stimulating and encouraging insurance companies to compete in various types of risk insurance.
2. Managing – maintaining the autonomy and stability of the country's market, which is related to the stability of the banking sector of the financial sector, which is able to resist the strong impact of global changes.
3. Freedom – the ability of insurance companies to choose a free direction of development while maintaining control over the market.

4. Coordination – approval of organisational processes within the sector with the establishment of effective interconnection and communication between all major factors affecting the risk insurance sector, avoiding strict control and excessive bureaucracy.

5. Cooperation – achieving synergies in the activities of all insurance industry players at different levels.

Given that the development of insurance contributes to economic growth in several ways: by increasing the liquidity and availability of the economy's total capital, and even the efficiency of capital allocation, it is advisable to reflect the relationship between the development of the risk insurance market, market participants, and society (Figure 2.9). In addition, empirical data from developed countries shows that insurers are among the main employers and investors. Thus, they can have a positive impact on important factors of economic growth, such as the private savings rate, the percentage of savings used for investment, and the marginal productivity of investment. Their activities, like those of banks, can contribute to economic growth.

In addition, in the process of achieving the goal and fulfilling the objectives for the development of risk types of insurance under conditions of uncertainty, it is necessary to use a number of tools, in particular:

– expanding its activities by providing a wider range of services and introducing new types of insurance services in the global market, taking into account the existing needs of consumers. These include: professional insurance, bank insurance, deposit insurance, geopolitical risks, directors and officers liability, cyber insurance industry risks, etc.;

– personalised products instead of universal ones. The digital economy is making usage-based, on-demand and all-in-one insurance services increasingly relevant. Customers therefore prefer personalised insurance cover to the one-size-fits-all products that are currently available in sufficient numbers. Flexible coverage options, microinsurance and peer-to-peer insurance will become viable options in the long term. Reinsurers will provide risk capital directly to digital brands, and regulatory frameworks will allow for shorter value chains. A deeper understanding of customer behaviour will lead to more accurate risk assessment, personalised premiums and value on a consistent basis for better customer experience and brand loyalty, and reduce false claims;

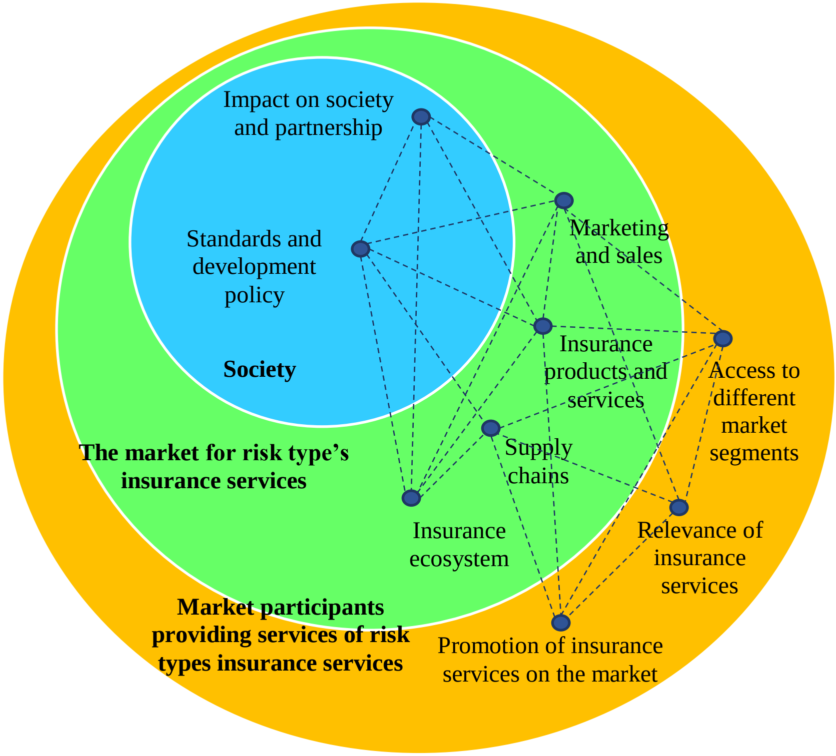


Figure 2.9 A model of the relationship between the development of the market services for risk type's insurance, market participants and society

Source: compiled by the authors

– automation of claims processes using artificial intelligence. Robotic process automation (RPA) and artificial intelligence will be central to the insurance industry, driven by new data channels, better data processing capabilities and advances in artificial intelligence algorithms. Artificial intelligence eliminates brokers and paperwork, and its behavioural economics capabilities minimise fraud, resulting in reduced time, effort and costs. In underwriting, artificial intelligence allows for accurate risk identification and higher profitability. Artificial intelligence can be used to automate policy servicing and claims management for faster and more personalised customer service. Artificial intelligence and automation will significantly impact and improve business results in terms of customer experience, cost optimisation, operational efficiency, market competitiveness and new business models;

– partnerships of professional participants with electronic device manufacturers and InsurTech companies, taking into account risk types of insurance. Insurance companies will be able to receive accurate, real-time data on individual consumer losses. This will help them respond proactively with timely and highly personalised interventions. A variety of sensors will be able to provide mobile alerts to both the insurer and its customers to help resolve problems quickly and in an informed manner. Unmanned aerial vehicles and image processing technology will increasingly enable insurers to obtain high-definition images for remote and accurate property valuation and analysis. In addition, insights will be built by linking data sets to create a more detailed view of individual risk profiles and protect insurers from new risks. Predictive analytics can also be used to model complex customer behaviour, achieve improved pricing accuracy and significantly reduce decision-making time. This will lead to new models and revenue streams to increase profitability and reduce operating costs. The customer experience will be enhanced through value-added offerings;

– improving the risk modelling infrastructure of insurance companies. Increase efficiency and reduce costs and duplication in the risk modelling and data ecosystem through the continued development of open platforms, an industry-wide interoperability programme and advocacy for open standards. This will enable risk owners to develop the local risk insights that are so important to their risk management strategies.

Conclusions

The carried out research allowed identifying the main directions of development of the global market of risk types of insurance, in particular: deposit insurance (aimed at reducing the risk of non-repayment or insolvency risk with respect to deposits and loans), geopolitical risk insurance (aimed at reducing the risk of impact on the financial development of the insured entity in conditions of geopolitical uncertainty), directors and officers liability insurance (aimed at reducing the risk of financial losses of companies caused by erroneous management decisions on organisation and conduct of business) and cyber insurance industry risk insurance (aimed at reducing the risk of using information technology in the course of operating activities). The paper describes the institutional ensure for activities in the field of risk types of insurance in Ukraine, which consists in a successful combination of state insurance market regulation and risk-oriented supervision, regulatory support, political and non-legislative regulation, and institutional structure. The paper presents the regulatory framework of Ukraine in the field of insurance, which consists of four components, in particular, legal acts defining the provisions of general regulation, licensing and registration, supervision and inspection, and reporting. The authors identifies the main basic EU directives regulating insurance activities and aimed at maintaining and controlling a sufficient level of solvency of insurance companies. Given that insurance companies process and use confidential information in their activities and the integrity of which must be preserved, it is determined that certain types of technological innovations (computing) should be used in the functioning of insurance companies, in particular: homomorphic, multilateral, hybrid, private set intersection, secure encryption with search capability.

An analysis of the most common and significant global risks over the past three years is carried out, on the basis of which it is determined that the greatest concerns are cyber incidents, business interruption, natural disasters and pandemic outbreaks. An analysis of the dynamics of changes in net earned premiums in some countries of the world, as well as their share in the GDP of these countries, is carried out to present the impact of the insurance sector on the country's economic development. The paper traces interdependence of gross domestic product and volumes of gross insurance premiums of some countries of the world, which showed the existence of a close straight-line relationship with the highest degree of correlation. Using the correlation-regression analysis of the development of the global insurance market under conditions of uncertainty, an economic-mathematical model of the relationship between the volumes of gross insurance premiums and gross domestic product is built at the 99% level of reliability. The paper analyses the volumes of insurance premiums of risk insurance classes by OECD countries over the past 11 years, in particular, vehicle insurance, marine, aviation and other transport insurance, cargo insurance, fire and other property damage insurance, property damage insurance, general liability insurance, accident and health insurance, and non-life insurance. Based on this analysis, it was found that almost half of the premiums are generated by property and accident insurance and health insurance. The structural ratio of insurance premiums by types of risk classes is presented.

The features of functioning of the insurance market under conditions of uncertainty are disclosed. The paper defines the essence of uncertainty, which lies in the fact that in the presence of an unlimited number of states of objective conditions, it is impossible to assess the probability of occurrence of each of these states due to the lack of assessment methods. The conditions of uncertainty include economic restructuring, changes in the regulatory body, regulatory and legislative ensure, digitalisation and internetisation of business processes in the insurance market. The paper presents the main trends for the insurance sector in Ukraine in the context of digitalisation, in particular: omnichannel communications, chatbots, Big Data, digital insurance policy options and Blockchain. In general, innovative technologies create a competitive environment for insurance companies to try to be the most advanced, which is reflected in the financial results of companies, saving time on typical operations, using social networks as an alternative distribution channel for products and services, reengineering business processes and diversifying products and services. The paper analyses the dynamics of changes in the number of banks, non-bank financial institutions of Ukraine and insurance companies and the volume of their assets, which allowed to establish a rapid decrease in the number of insurance companies and a reduction in the volume of their assets. The dynamics of changes in the gross receipts of insurance payments (premiums, contributions) and insurance payments for risk types of insurance and life insurance in Ukraine are characterised. It is established that the Ukrainian insurance market is fundamentally different from the insurance market of other analysed countries, since the Ukrainian market is dominated by risk insurance, which accounts for more than 95% of the total volume of earned insurance premiums and insurance payments / compensations. Based on the analysis of the structure of gross insurance premiums, the most common types of insurance in Ukraine were identified, in particular, transport insurance (hull insurance, MTPL, Green Card and liability insurance), health insurance and risk life insurance.

The paper builds a model of development of risk types of insurance, which is a description of theoretical and practical instruments, the use of which is aimed at comprehensive development of insurance market players in order to improve the welfare of the population and business entities of the country. The model is based on adherence to certain principles, including creating, managing, freedom, coordination and cooperation. The main factors influencing the risk insurance sector are identified. The paper substantiates the tools for achieving the goals and objectives of the model for the development of risk types of insurance, including: expansion of activities by providing a wider range of services and introduction of new types of insurance services in the global market, taking into account the existing needs of consumers; personalised products instead of universal ones; automation of claims processes using artificial intelligence; partnership of professional participants with manufacturers of electronic devices and InsurTech companies; improvement of the risk modelling infrastructure.

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THE DEVELOPMENT OF PUBLIC FINANCES OF UKRAINE IN THE CONDITIONS OF GLOBALIZATION

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Abstract
The development of state finances of Ukraine in the conditions of globalization, their functions and role are characterized and analyzed. It is indicated what importance the activity of the government acquires in the system of public finances.

Keywords: *state finances, financial resources, budget deficit, socio-economic development of society, budget system.*

Today, issues of the development of the public finance sector are of particular importance. After all, he is responsible not only for solving the problems of the formation of a market economy, but also for the financial support of reforms in almost all spheres of activity. At the same time, the problems of ensuring the stability of the country's development (in economic, political, social and other spheres), supporting economic growth, price and currency stability, etc. are being solved with the use of resources accumulated in the public finance sector. Instead, insufficient attention is paid to the study of these problems in our country. The works of domestic scientists contain somewhat simplified definitions of state finances, which are not very suitable for use in practice. Public finance is not singled out as a separate, relatively independent area within the country's economic sector.

The classification of the main components of state finances and functions that rely on this sphere as a whole and its individual elements is not clear enough.

The work of well-known domestic scientists, namely S. S. Hasanov, T. I. Yefimenko, V. P. Kudryashova, I. O. Lunina, O.O. Moldovan, L.L. Tarangul, I. Ya. Chugunova and others.

The main purpose of state finances is that through all kinds of financial structures, the state purposefully affects the fulfillment of such tasks of economic and social development of society as: ensuring human rights and freedoms, social guarantees and other measures.Fulfillment of the stipulated tasks is achieved by using effective methods, tools and levers for the mobilization of financial resources at the disposal of the state, their rational placement and economical use in order to promote the socio-economic development of society. The system of financial methods, tools and levers for mobilizing financial resources constitutes a mechanism for managing finances in the state. The pace of economic and social development and the well-being of the population depend on the level of perfection of the mechanism.

The amount of financial resources mobilized by the state at its disposal is of great importance. According to the estimates of leading economists, the part of resources involved in the budget, taking into account the resources that go to various centralized funds, has a tendency to decrease. This trend has a positive effect on economic and social processes in society. In the conditions of the implementation of the policy of self-financing of economic entities, this tendency serves as one of the important factors of economic growth and financial stability.

The change in part of the centralization of financial resources indicates the search for an optimal model of the distribution of financial resources with the aim of increasing material production and the well-being of the population. Building an optimal model for determining part of the centralization of financial resources requires scientific justification. It should characterize the optimal level of state intervention in the economic activity of production structures and the level of the state's obligations regarding the social security of its citizens.These factors directly affect the formation of a part of the gross domestic product, which should be concentrated at the disposal of the state.

An insufficiently justified high part of the centralization of financial resources negatively affects the level of ensuring the rational distribution and redistribution of financial resources and the efficiency of their use. At the same time, a decrease in the volume of centralization of financial resources in the conditions of a high part.

The functions and role of state finance correspond to the peculiarities of the state, its development strategy, in particular, in the desire to satisfy public needs and create favorable conditions for the life and work of citizens, development of entrepreneurship, stimulation of production, financial support of some branches of the economy, containment of inflation, employment level, etc. The main functions of public finance include: formation of a favorable environment for investments; ensuring the dynamics of socio-economic development of the country; solving problems in the social sphere with gradual improvement of social standards; easing the load on natural resources and ecology; formation of the revenue part of the budget; effective use of financial resources; protection of the interests of domestic business entities; guaranteeing the stability of the financial system and the security of the state.

Today, the state uses state finances as a lever of influence on the social and economic development of the country in both positive and negative aspects. Through this tool, it distributes and redistributes GDP and promotes enhanced reproduction. State finances form the basis of the economic security of the state: through them, the rights, freedoms and well-being of all its citizens are ensured.Thanks to the mechanism of state finances, which is organizational and legal, economic forms and methods of financial management, the state develops the economy and provides social guarantees to the population. The degree of perfection of the financial mechanism can be judged by the rate of economic and social development of the country (Radionov, 2014).

The activity of the government acquires special importance in the system of public finances.

As defined by J. E. Stiglitz, government performs many functions. In particular, in the financial sphere, it regulates economic activity, stimulates some types of activity by subsidizing them, and inhibits others through taxation; produces goods and services, provides loans and debt guarantees and provides insurance; buys goods and services, including those produced by private firms; redistributes income between individuals; provides social insurance for pensioners, the unemployed, the disabled and medical insurance for the elderly (Stiglitz, 1998).

According to the definition of the American scientist RG Gabbard, the government participates in financial intermediation activities directly, through financial institutions financed by the state, or indirectly, through guaranteeing loans provided by private financial intermediaries.

Direct participation in the conduct of such operations in the USA is carried out through federal credit agencies (state financial institutions). These include, in particular, government lending to farmers, government brokerage in the field of housing construction (Federal National Mortgage Association, Federal Home Loan Mortgage Company, State National Mortgage Loan Association), Student Market Loan Association. Indirect funding is also provided by many agencies, including the Farmers' Housing Administration, the Federal Housing Administration, the Department of Veterans Affairs, and others (Hubbard, 2004).

In order to ensure progressive development of the financial system of Ukraine as a whole, it is necessary to ensure predictability, and therefore it is necessary to clearly outline the long-term and medium-term socio-economic prospects of development, accordingly to develop the financial policy of the state. This will reduce the negative consequences of political instability, ensure the understanding of the activities of state bodies by both residents and non-resident business entities, take into account internal and external development trends, and ensure the protection of national interests and prospects.

An important role in ensuring progressive trends should be played by a change in the general philosophy of the functioning of the state's financial system, as well as its component – the system of state finances. The essence of the changes should be the perception and implementation of market relations between the links of the financial system. We are talking about budgetary, tax, credit, social, investment and other aspects. Reforming the budget system should change the emphasis towards its bipolarity: a strong center and strong local self-government. The consumer approach in budgetary relations leads to the lack of interest of local self-governments in the formation of their own, stable income base of budgets. Individual managers find it profitable to wait for budget transfers, rather than to stimulate the inflow of investment resources, the development of entrepreneurial activity, etc.

The formation of a new mechanism will allow the use of centralized state funds as levers of state regulation and intervention in the development of the economy under conditions of internal or external destabilization, as tools for ensuring equal access of all participants in social relations to state social and economic benefits, but the system of local finances must function alongside it in a powerful mode , which will ensure the development of territorial communities, create prerequisites for the growth of business activity, apply market mechanisms, which in aggregate will correspond to the national strategy and priorities, but will be provided by the local community's own resources and interests.

The role of the state budget should also change, because the role of the state itself is also changing in the conditions of world globalization. The state should be a representative of the interests of the entire national community both inside the country and outside its borders. The state, through the system of centralized monetary funds, must create such mechanisms of state regulation and influence that will allow to stimulate economic, social, investment, innovative development, etc., and to protect against unfair competition, raiding, entry into the domestic market of low-quality products harmful to the health of the population and consumer goods, the global financial crisis, as well as other world market risks. Emphasis in reforming the state finance system should also be placed on changing the policy of public spending. It is necessary to support and encourage those business entities that try to work effectively, that strive to implement projects that will be useful to both individuals and the state as a whole. But at the same time, the state should not just allocate funds as targeted financing of a specific business, but should develop such financing schemes that allow it to either become a full participant in the specified project, or provide funds on preferential credit terms, or other schemes.

The state should receive direct and indirect benefits from this. This approach to state participation in projects will allow us to solve the following tasks: to ensure financing of priority innovation and investment projects, to increase the efficiency and targeted nature of the use of funds, to stimulate the growth of the volume of state assets, which in the future can be used as additional sources of budget revenues or financial instruments, to promote improvement of the state's investment climate through its direct participation in projects, which will stimulate national and foreign investors to invest resources in powerful investment and innovation projects, etc. An important place in the system of public finances is occupied by public credit. In many countries of the world, public credit is not limited to public loans, but functions as a powerful system through which central and local authorities intervene in the processes of social development.

The consequences of such intervention are multifaceted, from received state loans to the regulation of the redistribution of credit resources, where the state acts as an intermediary both in the domestic market and between foreign investors and national enterprises. At the same time, institutions representing the interests of the state may be state-owned by form of ownership, but function on a market basis (Kucher).

On February 8, 2017, at a meeting of the Government, the new Strategy for State Finance Management for 2017-2021, developed by the Ministry of Finance of Ukraine, was approved.

Why was the new State Finance Management Strategy necessary? Its implementation was supposed to ensure sustainable economic growth, a qualitatively new level of public service provision, and also become an incentive for reforms in other areas.

The goal of the Strategy was to build a modern and effective state finance management system capable of providing high-quality state services, efficiently accumulating resources and distributing them in clear accordance with state development priorities in the medium and long term.

The implementation of the new State Finance Management Strategy included the introduction of medium-term budgeting. This meant the allocation of budgetary resources according to development priorities for 3 years, as well as the development of clear development goals for 5 years and key performance indicators for evaluating the implementation of the Strategy.

The strategy itself consisted of 4 parts:

– observance of general budgetary and tax discipline;
– increasing the efficiency of resource allocation;
– ensuring effective implementation of the budget;
– increasing the level of transparency and accountability.

The public finance management strategy was supposed to ensure a high level of transparency and accountability of all state institutions and allow citizens to exercise direct control over budget planning and allocation.

The State Finance Management Strategy for 2017-2021 was fully in line with the goals and objectives defined in the draft Medium-Term Plan of Priority Actions of the Government until 2020.

The importance of developing the State Finance Strategy is also supported by Ukraine’s international obligations to the EU and the IMF (The Cabinet of Ministers…).

State finances function under clearly defined conditions and are formed at the expense of the finances of enterprises and organizations of state and communal forms of ownership. At the expense of this source, almost 35% of the gross domestic product is created, which is the main object of financial distribution (Kovalchuk, 2006). True, under the conditions of the transition to market relations, the share of the state sector of the economy decreases significantly from year to year, but even today this sector plays a key role in the formation, distribution, redistribution and use of the country’s financial resources. Tax revenues are another important and, under the conditions of the transformation of the domestic economy, perhaps the most important source of formation of state finances. In turn, tax revenues directly depend on the development of the national economy and its industries, the development of production, i.e. the production of goods (products), the performance of works and the provision of services. The confirmation that taxation, that is, taxes, is the main source of state finances at the current stage of economic development, is the fact that the authors of “Macmillan’s Dictionary of Modern Economics” provide a definition of the term “budgetary policy (fiscal policy)” with the following meaning: “Budgetary policy usually means the use of taxation and government expenditures to regulate the aggregate level of economic activity” (McMillan’s, 2000). Therefore, the state budget is the main national fund of centralized monetary resources, which expresses the economic relations of the state in the process of distribution and redistribution of the gross social product and national income (Kudryashov, 2012), and the main sources of filling the state budget are the finances of enterprises and organizations of state and communal forms of ownership and tax revenues.

The problems of the global economy, the continuation of the COVID-19 pandemic and the risks of military escalation create extraordinary challenges for Ukraine. But the state’s potential to respond to these challenges is restrained by the Government’s passive lending policy and tight monetary conditions imposed by the National Bank. Analogous to the unconventional monetary policy of various countries of the world during the 2008-2009 and 2020-2021 crises, Ukraine should switch to unconventional macroeconomic policy to strengthen the country’s defense capabilities and repel attacks by the aggressor.

In January 2022, the International Monetary Fund (IMF) worsened the forecast for the growth of the world economy in 2022 by 0.5 percentage points. and fixed it at 4.4%. At the same time, according to this forecast, the average growth rate in countries with emerging markets and developing countries should be 4.8%. In Ukraine, quite optimistic forecasts of real GDP growth in 2022 range from 3% to 3.8%, and all of them are based on the assumption of the absence of large-scale military operations.

International experts associate the deterioration of economic prospects in most countries of the world with the spread of the new strain of COVID-19 “omicron” and the predicted introduction of new lockdowns to contain it. Added to this is the rise in energy prices and the disruption of global chains, which negatively affect the level of production and circulation costs and destroy the viability of individual businesses. On the other hand, problems in China’s real estate sector will hamper the pace of development of the world’s second largest economy and, through multiplier effects, will spread to China’s trading partners.IMF experts also predict tougher conditions on the global financial market in 2022, as a result of tighter monetary policy by the world’s leading central banks. A rise in key interest rates will increase the cost of government and corporate borrowing around the world, and emerging market countries will face an outflow of foreign capital.

Rising market interest rates will increase debt service burdens in emerging market economies and increase public finance pressures. IMF experts advise the governments of these countries to increase the repayment terms of public debts and, if possible, to reduce the amount of borrowing in foreign currencies.

The anti-crisis fiscal policy of 2020-2021 led to the formation of record amounts of public debt in many countries of the world. The level of global public debt is close to the mark of 100% of global GDP. In 2022, most countries will face the need to implement a tougher fiscal policy, although budget deficits will reach impressive proportions. Thus, according to the IMF forecast, the average budget deficit in developed countries should decrease from 8.8% of GDP in 2021 to 4.8% in 2021, and in countries with emerging markets - from 6.6% GDP up to 5.8%. In Ukraine, the budget deficit is traditionally very modest: 3.8% of GDP in 2021 and 3.5% according to the plan for 2022.

IMF experts in the «World Economic Outlook» of January 25, 2022 make the following important warning: the degree of tightening of fiscal policy should depend on the pace of economic recovery, and as the pressure of the pandemic increases, the budget consolidation process should slow down. In the event of resumption of quarantine restrictions, state authorities must restore financial support programs for affected businesses and households, as well as provide adequate social assistance for the most important segments of the population.

But in order for such measures not to undermine the stability of state finances, it is necessary to ensure the targeting of state support to the specified categories of the population and businesses.

In Ukraine, the available potential to fight the pandemic and the external aggressor is restrained by the passive borrowing policy of the state, as well as by the strict monetary conditions imposed by the National Bank.Thus, the annual plan for attracting loan funds to the state budget in 2021 was underachieved by 14.6%, including domestic state loans by 19%. As a result of the non-fulfillment of the planned indicators of state borrowing, UAH 105.4 billion did not arrive in the budget. At the same time, since March 2021, the NBU has already raised the discount rate 6 times, bringing it to the level of 10%, which significantly worsened the conditions for Government borrowing.

In Ukraine, financing the needs of the state related to the territorial defense of settlements, logistical support of the armed forces, mobilization of people and (possibly) conducting air, ground and sea operations to destroy the enemy will require colossal resources. However, their active involvement through tax mechanisms,
given the state of the Ukrainian economy, seems unlikely, which puts the issue of non-traditional fiscal and monetary policies on the agenda. Analogous to the unconventional monetary policy of various countries of the world during the financial crisis of 2008-2009 and during the COVID-19 pandemic, Ukraine should switch to unconventional macroeconomic policy to strengthen the country's defense capabilities and repel aggressor attacks.

In the event of the deployment of military operations, one of the tools of such a policy should be the issuance of a special type of domestic loan bonds – military bonds. For their successful placement, along with working out the procedure for issuing and circulating military bonds, it is extremely important to ensure that citizens and legal entities are informed about the purpose of such issues and the critical need to raise funds to finance the country's emergency needs.

For the sphere of public finance, the war was as much a shock as it was for business. The Cabinet of Ministers, the National Bank and deputies needed to urgently solve three main tasks: find sources of covering the budget deficit, maintain the hryvnia exchange rate, and preserve tax revenues. It cannot be said that the authorities coped perfectly with all these tasks. But after 10 months of the war, one can draw an unequivocal conclusion: the collapse of the fiscal sector was avoided.

In general, the Ukrainian economy adapted to the realities of war and with a creak, but continues to work. This is evidenced, in particular, by the fact that by autumn the decline of the economy slowed down. In the first quarter of 2022, the GDP of Ukraine (from here on - year-on-year data of the State Statistics Service) decreased by 15.1%, in the second quarter – by 37.2%, in the third quarter – by 30.8%. Even more, taking into account the seasonal factor, GDP increased by 9% in the 3rd quarter compared to the 2nd quarter. The decrease in gross domestic product in 2022, according to the estimates of both the government and the NBU, will exceed 30%.

The second important indicator of economic health is the inflation rate. Prices of goods and services started creeping up immediately after the invasion, and in November their growth was 26.5% year-on-year. The forecast for the whole of 2022 is about 30%. Unfortunately, the acceleration of inflation was inevitable. It is connected with the disruption of logistics, with the increase in the costs of producers and the reduction of production volumes in all industries due to the destruction of capacities, the occupation of territories and the shutdown of enterprises in conditions of energy shortage. At the same time, it was possible to avoid an even greater acceleration of inflation, since the NBU has kept the discount rate at the level of 25% for more than six months, thus stimulating the increase in the price of loan resources in the economy and slowing down the growth of prices.

But the state of the state treasury cannot help but worry. The state budget deficit is constantly growing and there is a catastrophic lack of domestic resources to cover it. By December, the size of the deficit exceeded UAH 807 billion, which is four times more than for the whole of 2021. While the Ministry of Finance and the NBU are patching this hole at the expense of the issue and international aid. On the one hand, such measures are justified under the current conditions, but they lead to the accumulation of external and internal debt (its level is more than 83% of GDP) and in the future reduce the potential for economic recovery.

Against the background of all these macroeconomic upheavals, tax policy is gradually being strengthened. The argument is simple: it is necessary to somehow fill the budget, and things are not brilliant with this. For example, according to the results of November, the State Tax Service fell short of the revenue plan by a cumulative total of 1.7%.In addition, we should not forget that in 2023 the state budget expenditures on defense will exceed UAH 1.14 billion, which is almost half of all expenditures. Of course, for a country at war, the army and security are a priority. But since 1.15 billion hryvnias of revenues of the state budget-2023 should be generated by tax revenues, it is definitely not worth talking about reducing fiscal pressure in the near future.

However, in the macroeconomic forecasts for 2023, there are, albeit small, sprouts of optimism. Both the NBU, the government, and Ukraine’s main creditor, the International Monetary Fund (IMF), agree that the GDP of our country will grow next year. Not much – by 3-5%, but there will be growth. Inflation will slow down by 2-2.5 times. However, this is provided that the active phase of the military conflict ends in the first half of 2023. If the hostilities continue longer, then, according to the NBU’s estimates, the full recovery of the Ukrainian economy will begin no earlier than 2024.

At the same time, Ukraine’s dependence on external monetary support will remain at a high level, as will the need for debt financing of the state budget with the participation of the Ministry of Finance (Mind nominations, 2022).

Conclusions

Public finances play an important role in the development of the country.

A market economy needs not only state regulation, but also state regulation financing a wide range of programs aimed at support business competitiveness, ensuring living standards citizens, carrying out comprehensive reforms aimed at renewal economic system as a whole.

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FORMATION OF THE FINANCIAL SECURITY SYSTEM OF BANKING INSTITUTIONS AS A COMPONENT OF THE STATE'S FINANCIAL SECURITY

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Abstract
The essence of the financial security of the banking system is clarified. It is noted that the bank's security strategy is a set of measures of a managerial, regulatory, organizational, legal and economic nature, which contribute to the creation of a proper competitive environment in the financial market and ensure the protection of the legitimate interests of bank depositors and clients. The mechanism of formation and implementation of the strategy for ensuring the bank's financial security is considered. Emphasis is placed on the fact that the main strategy for ensuring bank security is formed for the long term and is a general management plan aimed at reducing the impact of destabilizing factors on the state of security, taking into account the intensity of their action at each stage of the life cycle of a financial and credit organization.

Keywords: *financial security, banks, threats, banking security indicators, bank strategy.*

Introduction

The financial security of an individual bank is closely related to the security of the banking system as a whole. They influence each other. On the one hand, problems arising in one bank can lead to a systemic banking crisis. That is why any mistrust on the part of the population towards a particular bank can lead to a mass outflow of deposits from the banking system. On the other hand, the structural problems of the banking sector undermine confidence in any individual bank. All this explains the important role played by ensuring the financial security of banks.

The essence of the financial component of the security of banking activity is to ensure organizational-management, regulatory, technical and preventive measures that guarantee the high-quality protection of the rights and interests of a commercial bank, the growth of authorized capital, the increase of liquidity of assets, the provision of reversibility of loans, the preservation of financial and material values and the optimization of sources funds of such provision. The process of ensuring the financial and economic security of the bank should be understood as a set of measures aimed at preventing damage from negative actions on their economic security in various aspects of financial and economic activity. Prevention of loss, not only that which clearly threatens the financial and economic security of the bank, but also potentially possible, is the content of the work of bank security specialists.

Materials and Methods

The following scientists are engaged in the study of theoretical and practical aspects of financial security at the level of the state and banks: L. Haryaha, R. Kulish, V. Kvasnenko, V. Kovalenko, Z. Pestovska, N. Sytnyk and others. However, due to the complexity and relevance of this problem, it requires further in-depth study.

The purpose of the study is to consider strategies for ensuring bank security and to generalize the existing methods of diagnosing the level of banking security. In the course of the research, a systematic approach, methods of analysis and synthesis, deduction, generalization and others were used.

Results and Discussion

Financial security of the banking system is the state of the banking system, which ensures the ability of the components of the system to ensure a stable financial environment and function under the influence of negative factors and the formation of resources, as well as the possibility of predicting and early detection of potential threats capable of destabilizing the functioning of the system (Haryaha & Kulish, 2019). The main goal of the financial security system is prevention, prevention of threats and elimination of their consequences. The goals of the bank’s financial security system are: protection of the rights of the institution and employees; preservation and effective use of financial, material, human and informational resources; improving the image and increasing profits by ensuring the quality of services and customer safety. The development of scientifically based approaches to strategic security of the banking system is an important task today. The formation of a protection strategy aimed at compensating losses, the content of which is reduced to risk protection, allows the bank's financial and economic security management to assess the appropriate probability of events, to take into account changes in circumstances, that is, to constantly adjust the strategy.

Strategic security of a banking institution is a process by which managers carry out long-term management of a banking institution, determine the goals of security, develop strategies to achieve these goals, taking into account all relevant (most important) external and internal conditions, and also ensure the implementation of the developed corresponding plans, which constantly developing and changing.

An important condition for the strategic provision of bank security is the determination of the desired future state of its security and, based on the existing potential reserves of its development, the formation and implementation of the bank's security strategy.

The bank's security strategy is a long-term plan of actions aimed at ensuring its security, finding and creating appropriate reserves for the prevention, avoidance and elimination (neutralization, localization) of possible risks, threats and dangers, i.e. it is a set of management, regulatory, organizational and legal measures of an economic nature, which contribute to the creation of a proper competitive environment on the financial market and to ensure the protection of the legitimate interests of bank depositors and clients.

The inclusion of one or another set of risk neutralization methods in the protection strategy takes place according to the rule, where the main criterion is the minimum expected costs for the implementation of certain risk neutralization methods and inevitable costs that cannot be avoided when applying the corresponding set of these methods.

Stage 1. Formation of the conceptual foundations of the bank's security strategy. Defining strategies is a process that takes into account all aspects of the external and internal functioning of the banking institution's environment, planning all the most important actions that must be implemented to ensure the long-term success of the organization. When developing and setting strategies, you need to consider:

– types of reactions to changes in conditions in the external environment (in demand, level of competition, legislation, etc.) – both threatening and favorable: protection against negative developments and promotion of positive trends;

– options for the distribution of resources between divisions, departments and areas of activity with the aim of their most effective use while contributing to the achievement of strategic goals;

– methods of competition in each of the financial and credit institution's activities to ensure its competitiveness and adequate response to threats from competitors;

– options for accumulation (or possible loss) of the necessary internal competitive advantages to ensure the competitiveness of the financial and credit institution due to greater balance of individual parts (subsystems) of potential as a basis for achieving synergy of strategic areas of banking activity. At this stage, the policy of conducting banking business, procedures and rules for forming strategies as alternative ways of achieving goals, as well as approaches to planning in a financial and credit organization are defined.

Stage 2. Formation of bank security targets. The formulation of the bank's mission and goals of ensuring security contributes to the understanding of the main goal of ensuring its security. The mission of the financial and credit institution is to ensure its safety.

In accordance with the defined mission, the goals of ensuring the security of the bank are developed. The goals are the starting point of the process of forming a bank's security strategy. The security goal of the bank is a specific, desired state of individual areas of ensuring its security, which determines the type of target function of the system, which must be achieved within a certain period. Setting goals is a complex and time-consuming process that combines the knowledge and experience of people responsible for formulating goals, as well as taking into account the impact of destabilizing factors that affect the state of security of a banking institution.

To achieve strategic goals, the entire financial and credit organization must act strategically, developing strategies of various types.

Stage 3. Diagnostics of the bank's security level. The search for ways of forming a bank security strategy is carried out on the basis of a diagnosis of the state of its security, which includes an analysis of external factors and an analysis of the strengths and weaknesses of bank security.

Stage 4. Evaluation of the strategic alternative of the bank's development. According to the identified security situation in the bank, it is necessary to form a so-called set of security strategies by analyzing strategic security alternatives that create opportunities to achieve the desired goals of bank security. In order to take advantage of the presence of a "set of strategies", it must flexibly change in its respective components when the financial and credit institution's operating conditions and strategically oriented directions for achieving goals change.

The main (basic) strategy of ensuring bank security is formed for a long-term perspective and is a general management plan aimed at reducing the impact of destabilizing factors on the state of security, taking into account the intensity of their action at each stage of the life cycle of a financial and credit organization. The overall strategy sets the parameters for building a "set of strategies" for the bank's security.

Each stage of the life cycle of a financial and credit organization corresponds to a certain state of its security. The stabilization stage corresponds to the state of security; stage of depression – a state of bank danger. At the stage of growth, as well as at the stage of decline of the life cycle of a financial and credit organization, we can observe different intensity of manifestation of negative factors of influence, and therefore, depending on the growth or decline of the influence of negative factors (respectively, the state of threat or the state of risk), the choice of the main security strategy of the bank should be made .

On the basis of the life cycle of a financial and credit organization, the state of its security, strategies for ensuring bank security are developed. Thus, the strategy of survival and renewal is applied at the stage of depression (inception) of the life cycle of a financial and credit organization, which corresponds to the bank's state of danger. The strategy of survival and renewal should provide for the search for ways to overcome the dangers for the functioning of the financial and credit institution, which will include a radical structural restructuring of the bank, which will generally contribute to counteracting and slowing down the development of destructive processes and will ensure the survival of the institution.

The strategy of intensification of efforts is used to get out of the bank's threat state. The strategy of intensification of efforts consists in creating prerequisites for exiting the crisis and overcoming the consequences of threatening influencing factors on the basis of improving the level of the existing positions of the functioning of the financial and credit institution. The strategy aims to develop at all levels of bank management a system of measures aimed at increasing the intensity of use of all types of labor resources, energy, raw materials and equipment, and eliminating unproductive costs.

The strategy of preventing negative factors of influence is aimed at getting out of the bank's risk situation. The strategy of preventing the actions of negative influencing factors should ensure the transition to the growth of the banking institution, thereby creating prerequisites for ensuring its security.

The strategy of stabilization and strengthening of the achieved positions is used to maintain the state of security of the bank and create new prerequisites for its strengthening. The application of the strategy of stabilization and strengthening of the achieved positions will contribute to the achievement of a new stage of stabilization of the banking organization, which in its essence is the initial stage of the life cycle of the financial and credit organization for further growth. Therefore, the strategy of stabilization and strengthening of the achieved positions should have the necessary basis for the sustainable growth of the efficiency of social production and the creation of conditions for maintaining and increasing the positive growth trends of the banking institution.

Stage 5. Selection of a strategic alternative for the development of the bank. Target security settings will differ depending on the level of development of the financial and credit institution.

Stage 6. Implementation of the bank's security strategy. Satisfactory implementation of the strategy has the ability to compensate for the negative consequences that may arise at this stage due to the presence of shortcomings in it or due to the appearance of unforeseen changes in the environment.

Stage 7. Control over the implementation of the bank's security strategy. The control system should be based on the principle of preventing the dangers of the system's functioning, rather than eliminating the consequences. The formation of the control system involves:

– determination of the directions by which the activity will be controlled;

– formation of criteria for evaluating the functioning of the system according to each direction;

– formation of a security monitoring system in order to prevent negative factors of influence in case of deviation of the bank's security indicators in accordance with the selected functional criteria;

– improvement (formation) of the structure of institutions that will carry out the control process in the bank;

– formation of a mechanism of responsibility for the non-compliance of the economic activity of the objects with the conditions and criteria of the bank's security;

– reforming the legal system of guaranteeing the safety of banking, improving the system of banking supervision for compliance with the law.

An indicator of a bank's security in a competitive environment is the level of competitiveness of the service it provides. The optimal value of this indicator is equal to one. The rhythmic implementation of banking services plays a special role in guaranteeing the bank's market security. It is determined on the basis of data on the implementation of banking services for the relevant period. The optimal value of the sales rhythm indicator should be equal to one. The more the value of the indicator deviates, the lower the market safety indicator of the bank.

Successful banking is impossible without the use of advertising. It is advertising that can support the required level of sales, instantly respond to changes in market conditions, neutralizing active competitors, and ensuring a positive image of the bank. The bank's market security depends on how effectively advertising will solve the tasks set before it, and the forms and methods of its implementation will effectively meet the requirements of the time. In order to determine the optimal limits of advertising expenses, the management of a banking institution should investigate how the level of advertising expenses affects the volume of demand: how many more services can be provided for each additional advertising hryvnia invested and at what stage investments in advertising lose effectiveness.

The market share of a banking institution reflects the most important results of the competitive struggle, recording the degree of dominance of the bank in the market, its ability to influence the structure of supply and demand, prices and dynamics of the market as a whole. The bank's market share is the specific weight of the services provided by the banking institution in the total capacity of the given market. The study of the market shares of competitors makes it possible to reveal the distribution of forces in the competition in the market of banking services 3, for this purpose, the indicator of the bank's relative market share is determined. The value of the "relative market share" indicator is that it more objectively characterizes the competitive position of a banking institution on the market than the market share indicator. If the bank's relative market share is greater than one, the firm is the market leader and has the strongest market position, and thus the state of market security.

If the bank's relative market share is equal to one, the bank's market position is the same as that of its main competitor. If the relative indicator of the bank's market share is less than one, the institution has a weak market position, which requires the study of factors that affect the state of market security of the bank.

However, market share is not the only indicator of assessing the level of competition in the market. 3 can also be used for the same purpose:

– the share of "awareness" (the percentage of consumers who name a certain banking institution when they are asked to name the first thing that came to their mind when making a decision regarding the choice of a banking institution and the purchase of a certain type of service) indicates the most deeply rooted awareness of the brand and purchasing institutions advantages;

– the share of "voice" (the percentage of space or time in mass media advertising that a banking institution occupies in relation to the total volume of mass media for a given industry; often measured by the amount of money spent on advertising) can lead to a change in the share of “consciousness”.

After evaluating each of the given partial indicators of the bank’s market security, comparing them with the initial value, distinguishing stimulators and destimulators, the integral indicator of the bank’s market security is calculated as a geometric mean value. The calculation of the integral indicator will allow to determine the state of the bank according to the degree of its proximity to security, risk, threat or danger. The weakening of the market bank is evidenced by: a decrease in the market share occupied by the banking institution; weakening of competitive positions and the ability to counteract competitive pressure; reduction of adaptation capabilities to changes in the market situation, lagging behind market requirements.

As a result of calculations, those banking institutions that represent a special danger as competitors and for which special strategies and forms of economic behavior are developed are revealed. To strengthen the level of the bank’s market security, it is necessary to use the bank’s integrated marketing approach to managing banking activities, which will allow to understand the client’s needs as quickly as possible and find the optimal solution for their satisfaction.

The strategic planning of measures to strengthen the bank’s market security is based on the concept of the formation of the banking services market, during the phases of the development cycle of the banking services market: implementation, expansion, saturation, decline. In addition to successive changes in the development cycle of the banking services market, the competitive position of some types of business of a banking institution in relation to others may also change. The type of business unit of a financial and credit institution can occupy one of four competitive positions: dominant, favorable, strong or weak (Table 2.6).

For each indicator that characterizes the competitive position of a business unit of a financial and credit institution, a general assessment is determined by multiplying the weighting factor of this indicator by its rank. The total scores are summed within each factor to give a total factor score.

At certain stages of the life cycle of a banking service in the market of banking services, the following variables can be used as parameters: product line; number of competitors; market division;

market share stability; constancy of consumers; starting barriers; commodity policy.

Table 2.6

Competitive positions of a business unit of a financial and credit institution

Name	Content
Dominant	The position is often the result of a quasi-monopoly or highly protected leadership. Such a business representative establishes and controls the standards and behavior of other competitors. A leading business has a wide range of strategic options that it can use at its own discretion.
Favorable	A strong type of business usually chooses its own strategies regardless of the behavior of its competitors and has certain advantages over them. The relative market share is 1.5 times greater than that of the largest nearest competitor, but there is no absolute advantage in this type of business.
Noticeable	One of the leaders in the banking sector, where all competitors are on the same level and none of them dominates. If there is a niche, then this type of business is relatively safe from competitors and, usually, the banking institution manages to significantly improve its competitive position soon.
Weak	A type of business can be profitable if it specializes in a narrow and protected niche. But this position may mean that the type of business has a number of critical weaknesses that prevent it from being the center of profit generation for the banking organization. Weakness can be explained by the type of business itself (it may be very small or there may be a lack of important resources to support it) or mistakes made in the past in its development. In any case, such a business cannot survive on its own.

The combination of data on the four phases of development of banking services on the market and four competitive positions results in a matrix for determining the bank’s market security, consisting of sixteen cells. The position of a specific type of business of a financial and credit institution is indicated on the matrix along with other types of business, according to which a carefully thought-out set of strategic solutions is offered.

Determining the position of a strategic business unit on the bank’s market security matrix is a step from strategic to operational planning. For a visual representation of the bank’s service portfolio, each of its business units can be plotted on a matrix in the form of a circle, the dimensions of which correspond to the scale of the financial and credit institution's activities in this strategic business area. The matrix should also indicate the financial contribution of each strategic business unit to the corporate portfolio. For this purpose, in the quadrant of each strategic business unit, numbers are recorded, certifying the contribution of this strategic business unit to a certain indicator (share in sales volumes, in financial flows, etc.). Total values for rows and columns are recorded in the fields of the matrix.

The business portfolio of a financial and credit institution, determined by the stage of the development cycle in the market of banking services and the competitive position, should be balanced. A balanced portfolio, according to the concept of the ADL model, has the following features:

1. Cash flow is positive, or at least such that ensures the equality of the amount of cash generated by mature or aging businesses with the amounts spent on the development of nascent and growing businesses.

2. The more types of business that occupy a leading, strong or favorable (noticeable) position in the market of banking services, the better the business portfolio of a financial and credit institution. A portfolio consisting only of mature and aging businesses with viable competitive positions is likely to generate positive cash flow and a high rate of return at some stage, but it cannot be called promising in the longer term. A portfolio of emerging and growing businesses has good prospects, but may currently have negative cash flow.

3. The ADL model involves the use of a special Rona graph for balancing the business portfolio. This graph is based on two parameters – the RONA indicator, expressed as a percentage, and the level of reinvestment. The RONA graph schematically displays the efficiency of a type of business, the level of reinvestment of funds in this type of business, or the need to redistribute funds to other types of business of a financial and credit institution, if over time the business units of the bank move on the matrix in the direction from the lower left to the upper right corner , where profitability is high, financial needs and risks are low, it can be considered that the strategy for these business units of the bank is chosen correctly. If

the position of the bank's business unit on the matrix "bends" downwards from the described diagonal, then the strategy for such business units of the bank is chosen incorrectly, large financial flows from them should not be expected, they may even become unprofitable.

The matrix of market safety of the bank offered above will allow to determine the safe level of profitability and the volume of the flow of cash investments and predict a strategic decision regarding the occupied share and competitive behavior in the market of banking services.

Conclusions

An important condition for the strategic provision of bank security is the determination of the desired future state of its security and, based on the existing potential reserves of its development, the formation and implementation of the bank's security strategy. The main strategy for ensuring bank security is formed for the long term and is a general management plan aimed at reducing the impact of destabilizing factors on the state of security, taking into account the intensity of their action at each stage of the life cycle of a financial and credit organization.

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Chapter 3

USE OF MARKETING AND LOGISTICS IN THE MANAGEMENT OF SOCIO-ECONOMIC SYSTEMS

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THE COMPETITIVENESS OF FREIGHT DELIVERY SERVICES BY RAIL

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Abstract
The chapter examines the problems, necessity, and objectives of designing the development of freight transport by rail in the context of the European Union. The main development directions and measures are presented, and the fundamental disturbances that hinder the development and integration of the international railway network are described. The representatives of the railway freight authorities coordinating the design of the development, financing, the implementation of innovative solutions are described. An example of one of the most significant projects for the development of freight transport by rail, the course of its performance, is given. The cost-benefit method calculates the projected socio-economic benefits, revealed financing sources, and activities' future financial results. The main directions of digitalization of development, which affect operational efficiency and increased competitiveness, are described. After studying the theoretical and practical aspects of the design of the development of freight transport by rail, the conclusions and recommendations are presented.

Keywords: *competitiveness, transport, rail, freight delivery service, last mile delivery.*

Introduction

The effective efficiency of the rail transport system is the basis of each state's economy. The European Union, including Lithuania, has reached a stage when it can freely plan the development of rail freight transport and look for business partners. New technologies and the desire to meet customers' needs encourage renewal, so freight transport services remain innovative and competitive. The goal of developing the freight transportation business by rail is to meet customers' growing needs, grow the quality of freight transportation, and achieve operational efficiency.

Transporting goods by rail is an integral part of the business process, bringing economic and social benefits to the states. The provision of freight services by rail takes place in a dynamic and competitive environment. The increasing constraints associated with the conservation of energy resources, as well as international commitments to reduce greenhouse gas emissions, require an increase in the attractiveness of rail transport while compromising high-quality services and for the optimal design of the development of rail freight transport.

The implementation of the design tasks of the development of current transport by rail is used to achieve economic and social benefits.

The chapter reveals the necessity and directions of the design of the development of freight transport by rail transport to justify the usefulness of development, carry out a socio-economic-benefit analysis of the creation of the development of freight transport by rail and provide an assessment of the design utility of the development of freight transport by rail.

The chapter presents an overview of The European Union's documents and legislation relating to the development of the rail transport sector. Methods such as economic analysis, quantitative assessment, cost-benefit, net worth analysis research methods, and comparative analysis are used.

The chapter consists of an introduction; the theoretical part reviews the scientific literature on the development of freight transport by rail; in the analytical part – the most important tasks and factors affecting the design of the development of freight transport by rail are noted, and the conclusions are presented.

1. SCIENTIFIC JUSTIFICATION FOR THE DEVELOPMENT AND CHANGES IN THE TRANSPORT OF GOODS BY RAIL

1.1 The need and problems for the development of freight transport by rail

Transport is an important part of the economic and social infrastructure. It directly influences economic growth, international and domestic agriculture, and tourism and contributes to the free movement of people, goods, services, and capital. Rail transport is among the leading (after-road transport) concerning other modes of transport, ensuring efficient transport service for business and society. For rail transport to maintain its position, it must be more competitive, i.e., more flexible, faster, reliable, and cheaper.

The EU’s strategic objectives for the development of transport, the challenges of climate change, and the need for greater integration of information systems for improving the operational efficiency of rail transport are the main prerequisites and reasons for the long-term (by 2050) and medium-term (by 2030) the need for the development of the transport system.

In the freight market, the goal of the development of railway transport is to become the leader in the freight transport market to gain a competitive advantage with lower costs, reliability, and speed. In the strategic guidelines for European railways, Butkevičius et al. (2000) identify consumer orientation, a significant increase in railway productivity, an improvement in the quality of service, increasing the flexibility of the system, raising the technical level and development of railways, reducing energy costs and negative impact on the environment, wide use of information technologies (Butkevičius *et al.*, 2000).

The development of rail transport is aimed not only at creating a single European railway area but also at solving the problems raised by the White Paper of the European Commission (2013) “The internal market for rail services is an area where there are still several obvious unresolved problems and which needs to be completed as a matter of priority” (European Commission, 2013).

Customers value the quality of rail freight transport as the quality of the offers and services provided. Spoor quality service aspects: access to the service, security, and certainty, speed, punctuality, provision of information, flexibility. Rail freight transport involves a wide range of interested parties: shippers, which choose the mode of transportation; operators of cargo transport on the road, those providing freight transport services; logistics infrastructure managers; and participants in national regulatory bodies. The success of the design of the development of freight transport by rail depends on the support and support of reasonable Indian stakeholders, the public.

The development of railway transport in the context of internationalization processes is examined by Sinkevičius (2017) in the dissertation work. It sees that the development of the rail transport sector in terms of freight transport is necessary for integrating international and national rail transport activities into a single whole within the framework of the Alliance+ cluster system. The essence of such a system is that the railway company, together with other participants of the alliance and the cluster, develops a common strategy for the development of activities, carries out a unified investment policy in defining the priorities for the development of joint activities (Sinkevičius, 2017).

As international trade expands, international cargo transportation is activated. In the context of globalization, rail freight transport is becoming global. Working in such conditions, Palšaitis (2016) notes the importance of creating logistics centers as one of the main elements of the logistics chain in one or another region, which manages and attracts both international and transit cargo flows. (Palšaitis, 2016).

Jučiūtė *et al.* (2015) see the future of transport until 2025 as "a modern transport system based on intermodal transport, which would meet the standards of the European Union with its technical parameters and quality of services, would effectively interact with the transport systems of neighboring countries and would meet the interests of Lithuania and the European Union, would increase the country's competitive capacity in international markets" (Jučiūtė *et al.,* 2015). But Islam *et al.* (2017) see freight transport along the east-west corridors in the future of rail transport and the potential market.

Jarašūnienė *et al.* (2019) note that this is an opportunity to reduce the total cost of transportation; the ability to transport larger loads; higher transportation speed; standardization of the transport of containers and semi-trailers; better use of infrastructure; more environmentally friendly transportation, as pollution of nature, is reduced; possibility to simplify the transportation process, install information systems (Jarašiūnienė *et al.*, 2019).

A significant factor in optimizing the provision of railway transport services is the organization of door-to-door cargo delivery (Abe, 2021), which is most often carried out with the help of transport terminals or logistics centers. The terminals are directly related to the transportation of cargo. The terminals currently form the main macro logistic links, which have a significant impact on the development of the international trade and production system: they increase cargo flows, form international and national transport corridors, promote the interaction and efficiency of various modes of transport, increase the variety of services provided by cargo owners and transport operators, as well as the volume of transportation (Labanauskas, 2010). Terminals and logistics center better ensure cargo protection, lower transportation and storage costs, and more accurate delivery times. When transported by rail, container trains are formed, so the transportation of containers by train is another priority area for developing railways. Door-to-door delivery is already becoming a customer's pair.

The European Commission's goal is to relocate 30% of road freight transport to environmentally friendly modes of transportation – railways and inland waterways – by 2030. By 2050, this change is expected to reach 50%. Therefore, it is necessary to optimally integrate various modes of transport, to create conditions for the decarbonization of the freight trans port sector (to remove CO_2 from gas). To solve this problem, Ambra *et al.* (2019) propose a synchronous concept of this model. They argue that the synchronous modality, coined in 2010 by Dutch scientists Tavasszy *et al.* (2017), is perceived as real-time, dynamic, and optimized intermodal transport. Its essence lies in the solutions of the synchronous model concerning modal selection and route, taking into account changes in infrastructure and activity, i.e., moving to the scheme from "anticipate and prepare" to "perceive and react" (Ambra *et al.*, 2019).

Each development is aimed at achieving the tasks set and obtaining optimal results. The theory of development optimization is widely taught by Vaginautis *et al.* (2016). “The traditional concept of development is associated with economic growth, the creation of wealth, an increase in property, the satisfaction of the population’s needs, the possibilities of business development, and the creation of new jobs. The concept of sustainable development emphasizes the relationship between economic, social, and environmental factors, their interaction, and the impact on society”. (Vaginautis *et al.*, 2016).

In conclusion, it can be said that the development of the transportation of currents by rail is being designed and influenced by the processes of globalization, as well as the social, economic, and political situation, technological progress, and environmental changes. The design of the development of rail freight transport must follow the interests and objectives of the European region and the national states to achieve operational efficiency to provide not only high-quality but also universal services.

1.2 Rail freight transport sector - an indicator of the economic and social status

1.2.1 Factors determining the effectiveness of activities and evaluation criteria

One of the goals of developing freight transport by rail transport is to achieve operational efficiency. To assess the effectiveness of development, it is necessary to determine not only the indicators but also the factors influencing the results of the indicators. The project assesses its impact on economic growth, society, and the environment, whether operating profits will grow, and whether workers’ social and material promotion will improve.

As global competition intensifies, the likelihood of achieving the desired result decreases. Therefore, the pursuit of the operational efficiency of railways in the development design is based mainly on forecasts. In the long-term (until 2030) recommendations for preparing the guidelines for the development strategy of the Lithuanian transport system, it is noted that “the trends of freight transport and passenger transport in Lithuania correlate with GDP trends. The change in GDP by one percentage point leads to a change in freight transport of more than one percentage point” (Baublys *et* *al.*, 2008), so the forecast of the change in the volume of freight transport can be compared with the GDP indicator. By 2030 (2018 – 56.8 million tonnes), the importance of freight transport by rail in Lithuania is expected to increase to 70 million tonnes of freight. Also, in 2017 the cost-benefit analysis of the Rail Baltica project projects that in 2030, the volume of rail freight transport will be around 15 million tonnes, and by 2055 – up to 25 million tonnes (Labanauskas, 2020).

As an indicator of sustainable development, Vaginautis et al. (2016) identify in the socio-economic sphere the change in the share of real GDP per capita, while the indicator of the productivity of balanced consumption and production resources shows the ratio of GDP to the consumption of local resources (Vaginautis *et al.*, 2016).

In Lithuania, oil is transported by rail. Its products account for about a quarter (in 2018 – 14.3 million tonnes) of all cargo. As part of the development of rail corridors, it is predicted that Europe will be in the process of 2030. The demand for fossil energy sources of oil and other fossil fuels will decrease, leading to less transport. With the advent of alternative energy technologies worldwide, investing in developing electric rail locomotives is necessary.

Some authors argue that the railway lost market share because it reacted slowly to changes in the transport market, the cooperation link with the partners in the transport chain was weak to offer a door-to-door service, the national railway policy was focused on limiting costs, which led to the shrinkage of the network (Islam *et al.*, 2017).

Considering such forecasts, the strategy for the development of freight transport by rail transport is the attraction of cargo by implementing innovative railway infrastructure projects. One such project is the modernization and electrification of the rail network.

The benefit of the development of rail transport through the electrification of the network is a reduction in the total cost of freight transport. According to the methodology for calculating conversion factors and assessing the socio-economic impact, and benefits, transport development projects bring direct benefits (Abe, 2021):

- Cargo and transportation time savings.
- Savings on the operating costs of rail transport.

Indirect externalities are a decrease in emissions of noise, air pollution, and greenhouse gases.

The total transport cost is usually calculated by adding the monetary fees (for example, tariffs and operating costs of the vehicle) and the value of the travel time, calculated in the appropriate monetary units. Temporary savings are one of the most significant benefits arising from constructing new transport infrastructure or improving an existing one. Measured at 2019 prices, the proposed value for freight transport is 4.77 Euros per hour per tonne of cargo transported (Central project management agency, 2019).

The reserve for savings in using vehicles is the purchase of new freight locomotives. To transport cargo as efficiently and rationally as possible, Steišūnas *et al.* (2012) evaluate the use of commercial heat carriers from an economic and ecological point of view, calculating the efficiency criterion. For economic assessment, they apply: the maximum possible mass of the train to be transported (*t*), fuel consumption (g/kWh), ecologically – comparative air pollution, kg/t (after burning a ton of diesel) (Steišūnas *et al.*, 2012).

One of the tasks of developing rail freight transport through the operation of rolling stock is to reduce transportation costs, saving energy resources, i.e., replacing thermal traction with electric traction by purchasing electric carriers. The advantage of electric trains is that they are environmentally friendly and have lower energy consumption. The electrification of the line from the border with Belarus to Klaipeda will reduce the number of diesel used in the railway network by about 25 thousand tonnes per year.

Naktinskas *et al.* (2011) calculated the energy savings due to the change in the mass of the train when transported by an electric carrier and compared it with the energy consumption of the heat carrier. They note that with the increase in the volume of cargo carried and the number of electric carriers, the payback time of the electrification of the railway is reduced (Naktinskas *et al.*, 2011).

For the growth of rail freight volumes, the electrification of the network is significant due to the increase in train capacity and speed. The throughput of a railway line is the maximum number of freight trains (train pairs) of a fixed mass and length that can be passed on this line per unit of time (day, hour), taking into account the technical equipment of the railway line and how train traffic is organized (Dabužinskaitė *et al.*, 2009). Dabužinskaitė *et al.* (2009) also present a methodology for calculating the throughput of trains in the freight transportation training materials, which confirms that the installation of the second main road on the railway section doubles the throughput of the section, which affects the speed of delivery of cargo.

The negative impact of freight transport on the environment is a cause for concern. Strategies for developing railway transport highlighted sustainability problems and external and social freight transport costs. Transporting goods by electrified railways will allow the emission reduction targets to be achieved, cleaner energy will be consumed, and more efficient use of vehicles independent of fossil fuels. Transporting goods by electric traction, reducing pollution, is an area of critical importance for rail transport. Tumavičė *et al.* (2015), examining technical, regulatory documents and legal acts dedicated to the possibilities of railway development in Lithuania, note that "noise-reducing measures (both infrastructure and rolling stock) must be applied" (Tumavičė *et al.,* 2015). The article is especially relevant from an international point of view because currently, "the Rail Baltica railway line is being built in Lithuania, and noise reduction measures are being designed and implemented in the section" (Tumavičė *et al.,* 2015).

An essential aspect of the development of rail freight transport is the creation of an environmentally friendly transport fleet. Cargo transportation on rails reduces greenhouse gas emissions. Hajiaghaei-Keshteli *et al.* (2014) put it, if only 10% of the freight carried by long-distance lorries were to be transferred to the railways, it would reduce greenhouse gas emissions of CO_2 by more than 12 million tonnes a year (Hajiaghaei-Keshteli *et al.*, 2014). This article emphasizes the importance of creating a mathematical model of the problem of integrated production and planning of railway transport. The model should work according to the planned production volumes and transport needs. Such planning of the need for integrated production and rail transport is already underway; when the oil products of producers and customers from countries reach the terminal and are transported deep into Europe by tanker trucks, when the need increases, the oil products of the plant transported by rail to the terminals and back components are needed for the production of fuel.

The EU notes that there are more than 11 000 rules on national railways, that they are different across borders, and that national carriers are in a monopoly position on the rail freight market, as they are lagging in the liberalization of the market. “New entrants still face discrimination in accessing railway infrastructure and key service points, often owned and managed by incumbent operators. In 2016, the EU adopted a ‘fourth railway package’ to liberalize the market and barriers further” (European Court of Auditors, 2018), more efficient rail transport services.

The French economist Crozet (2016), speaking about the liberalization of railways, notes that the primary goal of the modal competition is to increase the efficiency of individual enterprises, industry, and transport, to create collective benefits. Such is not accessible due to various barriers to entry to the market, including the cost of entering the market and the cost of exit from the market; competition in the field of rail freight can be defined as imperfect competition (Crozet, 2016).

In the development and investment in rail transport, positive changes are due to digital technologies. Based on data and various algorithms, rail transport solutions expand the range of freight transport services, driving innovations that benefit customers. Constantly growing freight transport flows require efficient accumulation and processing of information. Liebuvienė *et al.* (2016) emphasize that the implementation of intelligent transport systems (ITS) as a complex of administrative, organizational, and economic methods are aimed at ensuring the efficient operation of the transport company, ensuring the quality of transport services. Sinkevičius (2017) also talks about the international creation of such a system. He argues that “cargo data must be placed in a common data storage and processing logger and processed using the same software, databases, and data processing mechanisms. The data logger must be able to place information on manufacturers and shippers so that they can manage information about existing cargoes, their delivery needs, and other relevant information” (Sinkevičius, 2017).

To increase the volume of freight transport, expand the customer base and ensure the flexibility and speed of freight transport, the railway company needs to optimize the carriage of goods in conjunction with the activities of the supply chain. Dong *et al.* (2017) propose to determine the optimal distribution of goods between modes of transportation and to use in various parallel modes of transportation by synchronizing them, i.e., optimizing the overall operation of the supply chain, not to apply a parallel or horizontal method of transportation separately, but to connect and combine them.

Having analyzed the main trends in the development of freight transport by rail and the factors that determine it from a scientific point of view, it can be concluded that the following factors prevail in freight transport:

- time and place;
- speed and market latitude;
- costs of transport services;
- prices of services;
- quality of customer service.

After reviewing the legal acts of the Republic of Lithuania and the EU, international agreements, the development of cargo transportation is directly related to national and regional legal regulation and the degree of market liberalization.

Based on the recommendations and insights of scientists, the national development program, and a participant in the international TEN-T network, the development of freight transport is aimed at increasing the volume of freight transport along railway corridors. Because of the increasing competition, the task of the carrier is

- to expand the customer market, reduce delivery times,
- increase the speed of trains and use the services of terminals and logistics centers,
- organize door-to-door transportation,
- make full use of existing and newly built railway lines,
- reduce the cost of transport services, switch to electric freight transport,
- improve the quality of customer service with the help of the development of information technologies.

2. POLICIES FOR THE DEVELOPMENT OF FREIGHT TRANSPORTATION BY RAIL

2.1. Progress made in rail freight services

Although the transportation of cargo by rail is convenient for transporting goods over long distances and suitable for transporting large and heavy loads, it is one of the cheapest transportation services. It has more than one advantage over other modes of transport: transportation of not standard-size cargo, the ability to transport goods at any time of the year, and at the same time, it is possible to transport a large quantity with smaller freight costs. However, the volume of goods transported by rail lags behind road transport. In 2020, the total freight activity of the EU-27 Member States by road amounted to 75 percent. Rail freight transport volumes accounted for 17 percent and were the second most important mode of transport for freight delivery (Figure 3.1).

Freight traffic by rail has fluctuated slightly over several decades (i.e., 2010 and 2020) (Figure 3.2), although they were also reduced by the 2012 world economic crisis (Figure 3.3). Sectors that traditionally use rail freight services have also suffered – metals (Eurostat, 2023), and the decline in consumption and the volume of goods transported has also decreased.

Figure 3.1 Share of freight transport in the EU-27 by mode of transportation (%)

Source: Eurostat (2023)

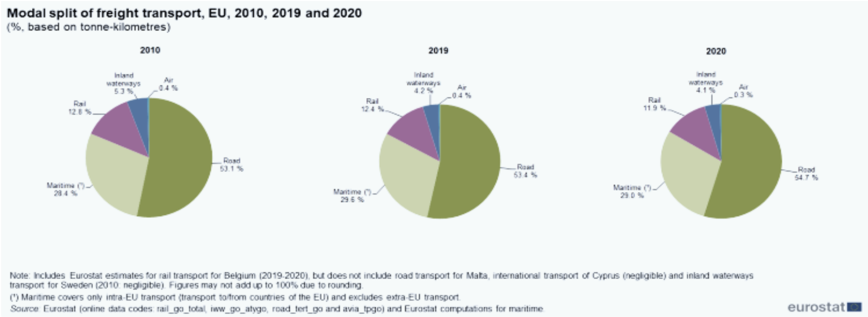

Figure 3.2 Cargo transportation trends in the EU-27 by mode of transport (%)

Source: Eurostat (2023)

The geographical position of these countries is essential for the transportation of goods on both domestic and international routes.

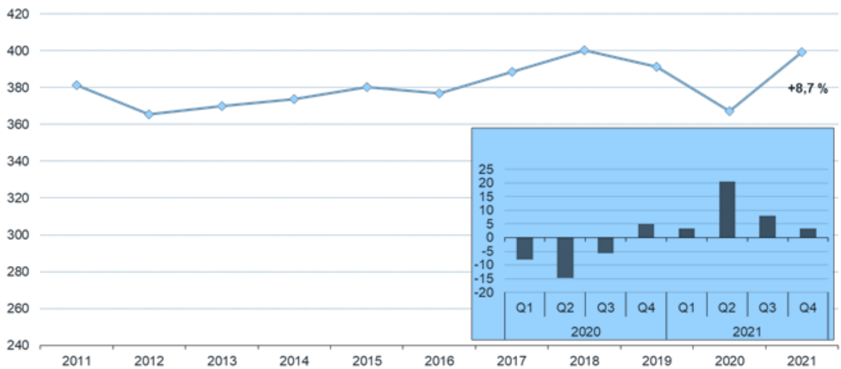

Figure 3.3 Rail freight transport in the European Union in the years (mln. tkm)

Source: Eurostat (2023)

In the European market, the countries that are crossed by the leading international corridors have the most significant volume of freight transport. The diagram shown in Figure 3.4 shows that the individual countries-Germany, Poland, France, Sweden, Italy, and Austria are the leaders in the transport of goods by rail.

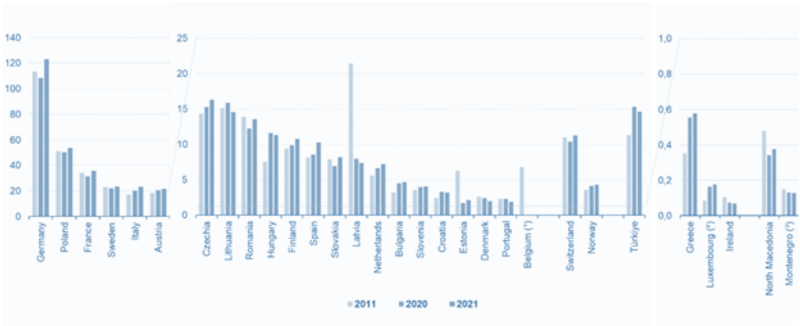

Figure 3.4 Change in rail freight transportation services EU-28 (billion tkm)

Source: Eurostat (2023)

Countries whose territory is crossed by international corridors have a significantly higher share of transit traffic on the EU market. In the Baltic States of Latvia and Estonia, located on the borders of the EU, international transshipments (almost all of them took place in ports) accounted for 84.5% of all transport indicators.

The Netherlands is strategically located on the European market with the port of Rotterdam. On the contrary, countries with a specific geographical area, away from the leading international corridors or, like Ireland, an island, carry out more traffic by sea, and then goods travel more by road.However, relying solely on geographical location is not enough; an example is the Baltic states; the geographical situation is similar, and the volume of shipments varies (e.g., comparing Estonia and Lithuania).

Changes positively influenced GDP developments in resource productivity, evident in the transport sector. Transport contributes to employment, growth, and global exports. The European transport industry accounts for 2.4 % of the EU GDP and 6.0 % of the EU total government revenue from taxes and social contributions. It will employ almost 6,2 million people in 2021 (Eurostat, 2023). The GDP of states is also an indicator of growth. It compares EU Member States and identifies different policies and designs development. The size of GDP depends on the income received and the taxes it pays.

The more railway enterprises receive payment from freight transport, the more they contribute to the state's economic strength.

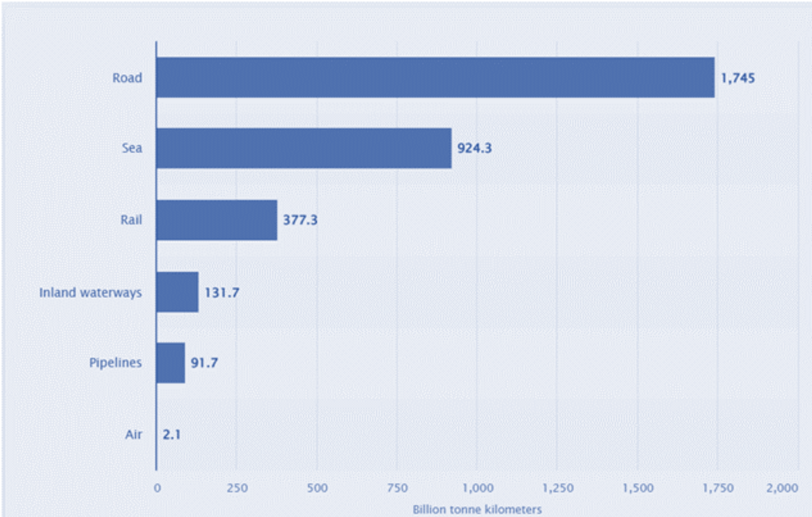

Figure 3.5 Freight milage by mode EU-27 in 2020 (billion-tonne kilometers)

Source: compiled by the author, based on Statista (2023) data

Below is the chart representing regions which are loading the most of freights by rail (Figure 3.7).

Countries keep investing into rail infrastructure (Figure 3.7). Based on historical data, the level of investments is around 0,25-0,38 percentage of GDP.

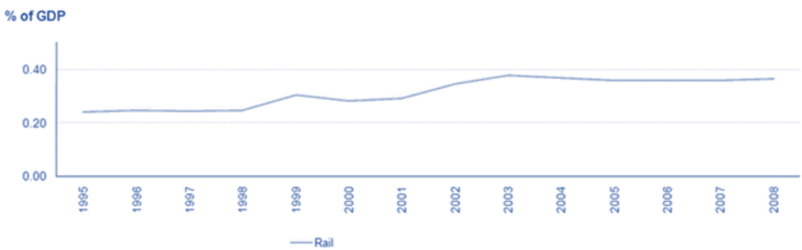

Figure 3.6 Investments into rail infrastructure as a part of GDP

Source: compiled by the author, based on Eurostat (2020) data

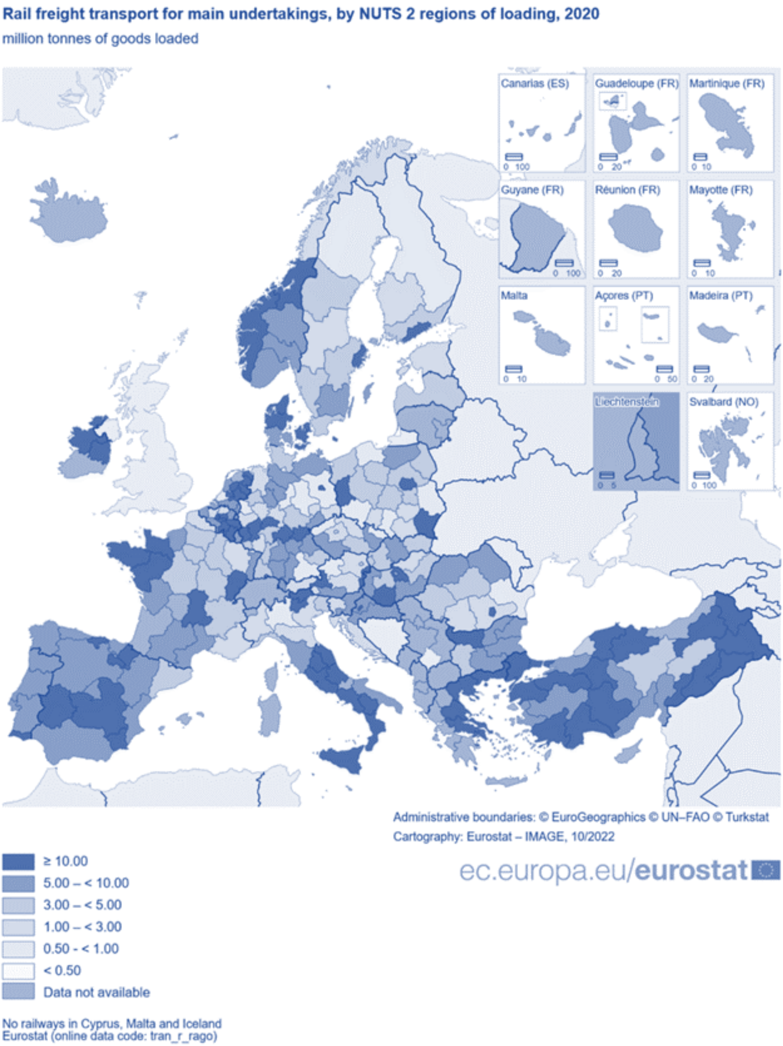

Figure 3.7 Million tones of goods loaded for rail transportation

Source: compiled by the author, based on Eurostat (2023) data

According to the data provided by the EU European Commission, it can be said that rail freight transport makes a more significant contribution to GDP than passenger transport (Figures 3.8-3.9).

GDP at year 2005 prices and exchange rates	1995-2018 p.a.	1.7%	2000-2018 p.a.	1.3%	2017-2018	2.1%
Passenger transport pkm	1995-2018 p.a.	1.2%	2000-2018 p.a.	0.9%	2017-2018	1.3%
Freight transport tkm	1995-2018 p.a.	1.5%	2000-2018 p.a.	1.0%	2017-2018	1.8%

Figure 3.8 Growth rates for the EU-27 GDP and freight transport in time frames

Source: Eurostat (2020)

Rail freight has struggled to recover from the economic crisis of 2008-2010 (Figures 3.3 and 3.9). Since 2012, there has been a noticeable recovery, and rail transport is steadily maintaining its market share.

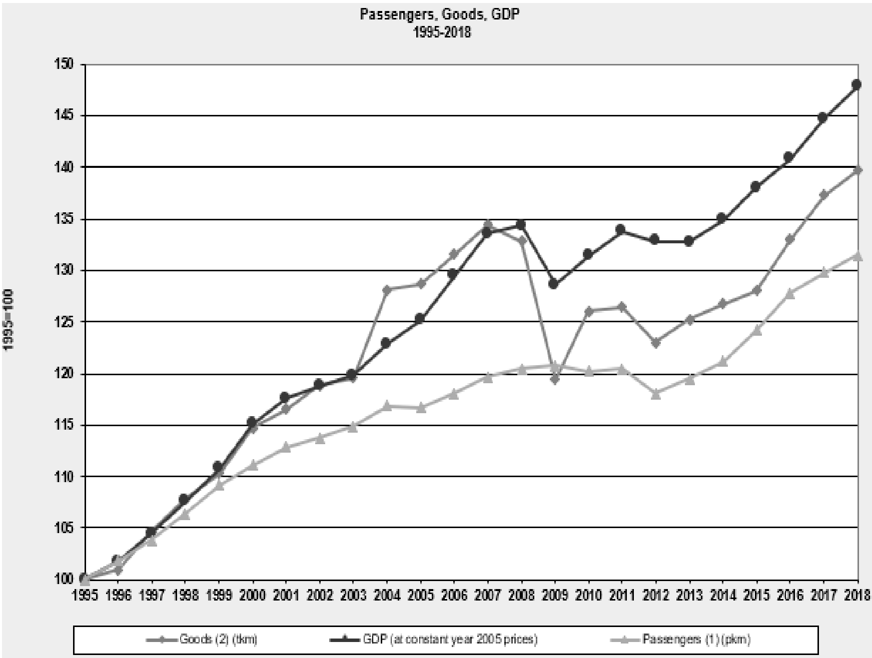

Figure 3.9 The change in cargo, passengers, and GDP

Source: Eurostat (2020)

The EU strengthens international cooperation in the context of rail freight. To this end, in 2011, the EU joined the International Organisation for Rail Transport (OTIF).

European rail companies are strengthening ties with China. In 2013, a resident of China announced the revitalization of the Silk Road, and many new railway tracks were created to connect the cities of China and Europe. China has invested heavily in railway lines between Asia and Europe, creating its terminals. Even with the COVID-19 pandemic, freight rail transport from China to Europe is increasing dramatically. In July 2020, more than 1,200 trains transported goods from China to Europe, i.e., 68% more compared to 2019.

In 2018, freight transport activities in the EU-27 amounted to EUR 3 353 billion tkm.

If vehicles mainly provide services on a small scale, then the railways are primarily used for transit and transportation over longer distances. 51% of freight transportation by rail consisted of international transport. Imports and exports in 2019 – more than 30% of freight transportation by rail (Figure 3.11).

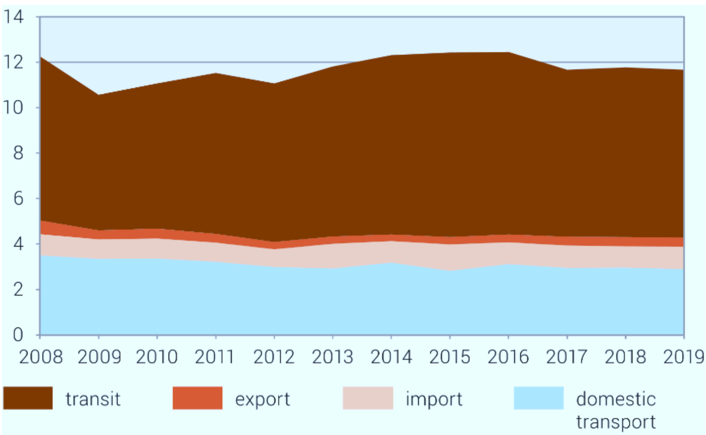

Figure 3.10 Domestic and international shipments of European iron companies (billion tkm)

Source: The European Steel Association (2022)

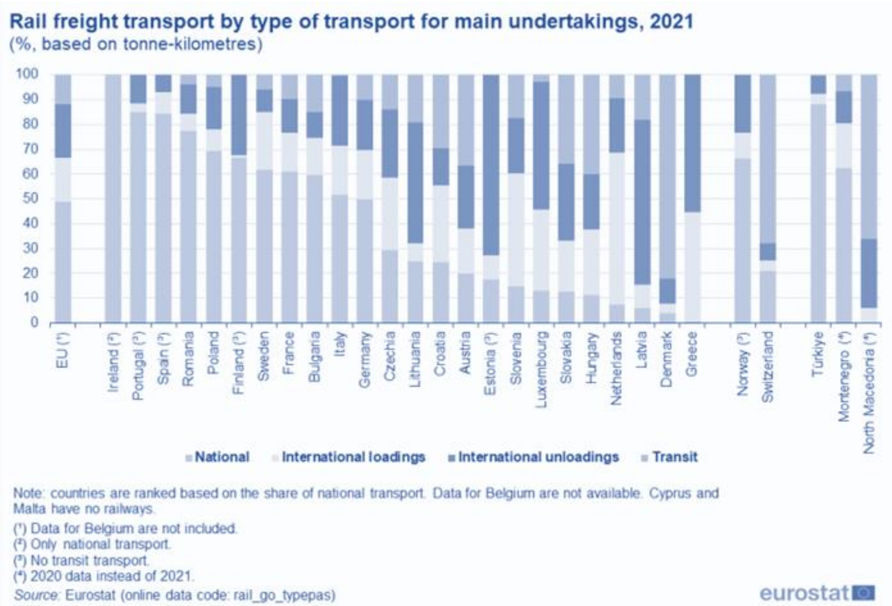

Figure 3.11 Structure of European rail freight transport in 2019 (% of tkm) (from down to top)

Source: Eurostat (2023)

The growth in volumes was evident in 2021, where domestic share increased by 10,7 percent.

This is due, among other factors, to the promotion of rail freight transport through railway reform, the modernization of infrastructure, subsidies, and investment aid.

In 2020, China Railways moved over 10,000 trains and 927,000 containers to China Railways. Train traffic increased by 98.3%, covering 21 countries and 92 European cities. About 150 trains run on this route during the week, covering 30 regions of Europe and 16 of China. (Railway PRO, 2020).

The African region is one of the lowest in terms of the density of railway networks in the world; only South Africa had a developed railway infrastructure in 2018. In the African region, freight traffic amounted to more than 155 billion tkm, while the cargo transportation volumes of the world's major powers amounted to

2597.778 billion tkm, the USA - 7387.45 billion tkm (Statista, 2023). It should be noted that the design of the development of rail freight transport requires a detailed analysis of performance indicators, showing what the trends in freight transport volumes are, what is the position in the transport sector, and what the contribution is to the total GDP of the region. What is more, what is dominant in the transport market - domestic or international transport - and what influences this, what is the comparative weight in the world, and in what competitive environment will the development take place? Only after evaluating various indicators, dynamics, and trends is it possible to decide which direction to project the development.

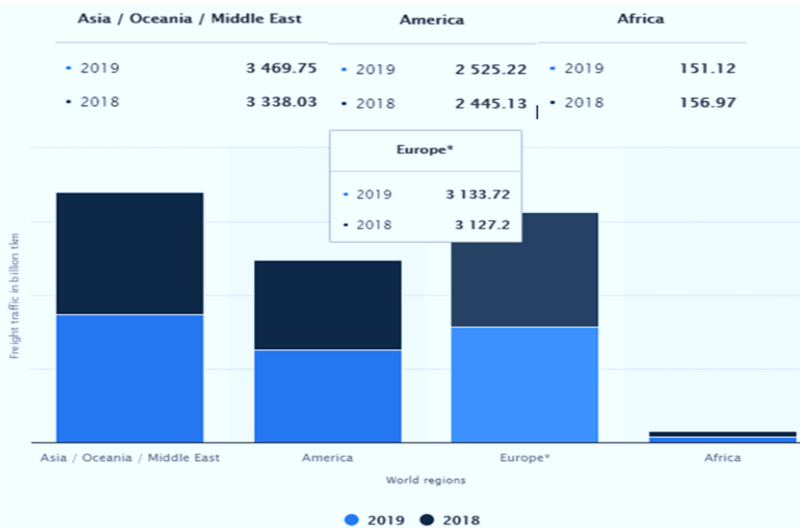

Figure 3.12 Cargo transportation by rail in the world 2018 -2019
Source: Statista (2023)

The largest freight carrier by rail is located in the central European site.

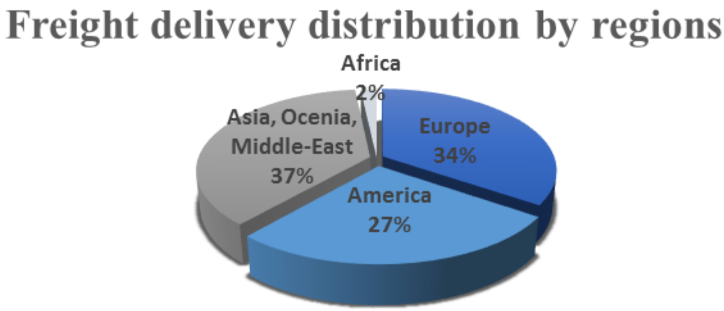

Figure 3.13 Distribution of freight volumes in the world by region in

Source: Railway PRO (2020)

2.2. Disturbances in the development of rail freight transport

"The internal market for rail services is an area where there are still several obvious unresolved problems and which needs to be completed as a matter of priority in order to form a single European railway area" (European Commision, 2013).

The Trans-European Transport Network (TEN-T) core corridors strengthen communication and cooperation between the different regions of Europe. Transport corridors perform various functions: ensure the mobility of people and goods, strengthen links between different regions, improve the quality of services, and facilitate the prioritization of investment in infrastructure and development. The TEN-T network consists of 75 200 km of roads, 78 000 km of railway lines, 330 airports, 270 seaports, and 210 inland ports, but the railway networks are unevenly developed, which affects the integrated development of transport. The development of the network includes two stages. The core network, which consists of the EU's most important connections and nodes, is due to be completed by 2030. The cross-cutting network must ensure the accessibility of all regions and be completed by 2050.

The main objective of rail freight transport is to enter the European transport area. However, there are differences in the compatibility of infrasounds and the development of countries. Nine international rail corridors for freight transport in the Eurozone are helping to improve rail transport and the volume of freight carried. Priority is given to the renovation and modernization of the railway infrastructure of transport corridors.

The main objectives of the international transport corridors are to strengthen cooperation between the various transport hubs and to work towards forming a competitive international transport and logistics chain based on this corridor.

When railways were constructed at the end of the nineteenth century, a uniform gauge standard was not established in the states. The standard gauge of 1435 mm accounts for the most significant part (60c/o) of the entire railway network worldwide. 1520 mm gauge is operated in the Baltic States (in Estonia, 1524 mm at the same time, the 1524 mm gauge standard is used for new lines, as in Finland). In Lithuania, in 2018, there were 123 km of standard gauge. The broad gauge 1668 mm gauge is found only in Spain and Portugal. To ensure faster cargo delivery in both the South-North and East-West directions, the differences in the tracks pose some problems; therefore, an effective crayfish exchange system is necessary. Completing the Rail Baltic project will eliminate the isolation of the Baltic States in relation to the railway infrastructure.

More efficient provision of rail transport services is limited by the signalization system used to manage and ensure rail traffic safely. There are around 30 train signaling systems in operation in the European Union. Existing national alarm systems are a nuisance for carriers from other countries. The incompatibility between the different systems and the incompatibility of train traffic control has been addressed by creating a single European railway area and a European signaling system, the European Rail Traffic Management System (ERTMS): so far, it only operates on a third of transport corridors. “According to the new European Rail Traffic Management System (ERTMS) deployment plan, around 30-40% of the core corridors (15 672 km) are to be equipped with ERTMS by 2023” (European Commission, 2023).

Comfortable, safe, and ecologically sustainable are high-speed rails. To preserve Europe’s energy independence and in the wake of the 1974 fuel price crisis, several countries decided to create a high-speed rail network. The first European high-speed line was opened in

Italy – in 1977, the "Florence – Rome" line was put into operation; later, the lines were opened by France, Germany, and Spain. However, their development is hampered by the operation of different models of railway networks in each state (Figure 3.14).

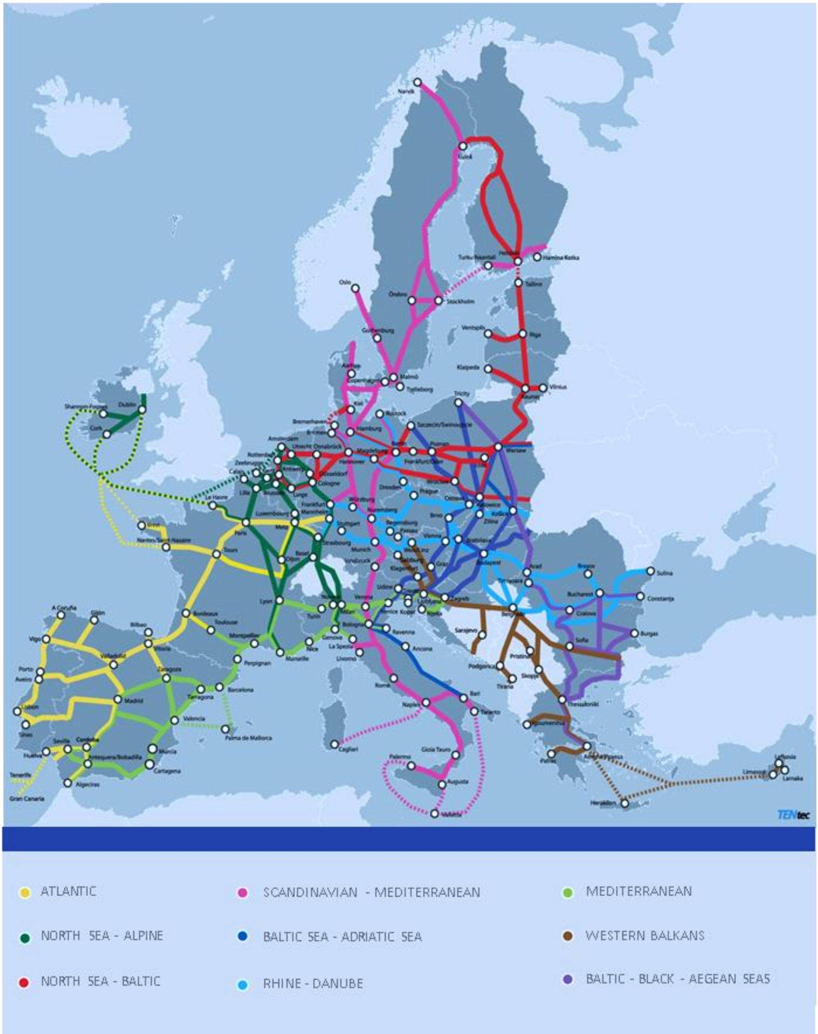

Figure 3.14 Map of the core network corridors

Source: (European Commission, 2023), Laroche et al. (2015)

In 2018, 9,000 km of high-speed rail were in operation. Because there are different national high-speed rail networks in the EU, which are designed and built by each Member State individually, their construction is very expensive (since 2000, the EU has invested €23.7 billion in high-speed lines) from the start of works to new ones.

There is still no standard high-speed rail network in Europe. "Although the transport time, the size of the price are important factors of competition, high-speed rail does not compete on equal terms with other modes of transport, there is a risk to economic efficiency since not all high-speed lines are needed, the cost of the minute saved is very high, and the average speeds do not reach the maximum capacity" (Association BBVA, 2018). To save money, the plan is to upgrade existing lines instead of building large am-speed lines.

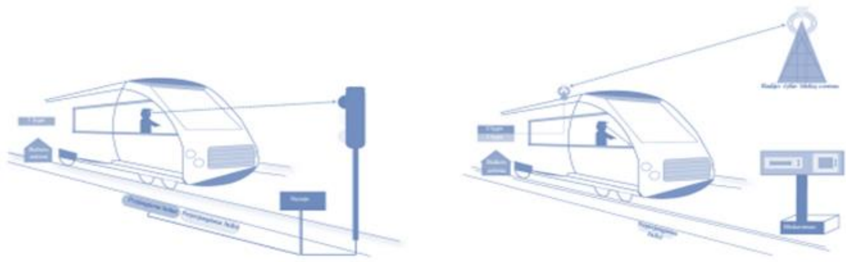

Figure 3.15 ERTMS operation

Source: European Audit Chamber (2018)

It takes about 16 years for high-speed lines to be put into service, and technical, administrative, and legal barriers to rail haulers still hinder access to national rail markets. In many states, one or more railway companies organize rail transport on a national basis: national interests are still more important than international ones. The main objective of liberalizing the rail freight market is to increase the competitiveness of rail freight transport.

In the European market, which is divided into national networks, it is not easy to increase rail flows. The obstacles consisted of technical differences in the railway systems and the unwillingness of some governments to open up their railway operators to external competition. The first legislative package on rail transport was adopted in 2001. Without the standard rules that would be followed throughout Europe, unrestricted access to the market is impossible.

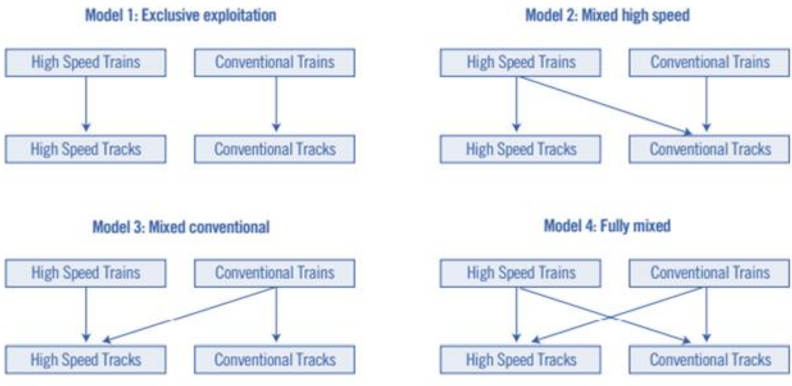

Figure 3.16 Performance models for high-speed rail traffic
Source: Association BBVA (2018)

With the liberalization of the freight market in 2007, in EU 27 countries railway companies could carry goods. You need to obtain a license, a safety certificate, an application for access to infrastructure, and to offer international rail services throughout the EU. The same rules apply to Lithuania and other Baltic States. Lithuania has been delaying the implementation of the European Union's requirements related to the activities of the public railway infrastructure manager and the opening of the railway market. Only in 2019, AB Lietuvos Geležinkeliai was divided into separate subsidiaries providing freight and passenger services and a company performing the public railway infrastructure manager functions.

However, Lithuania remains a state of the European Union, with no competition in the rail transport market. For comparison, as many as 201 railway companies provide services in the German rail transport market, and 77 carriers operate in neighboring Poland (Table 3.1). At the same time, these countries have the most significant volumes of cargo transportation. Liberalization does not mean that the railways will be privatized - public and private railway companies can compete and operate in the standard open market.

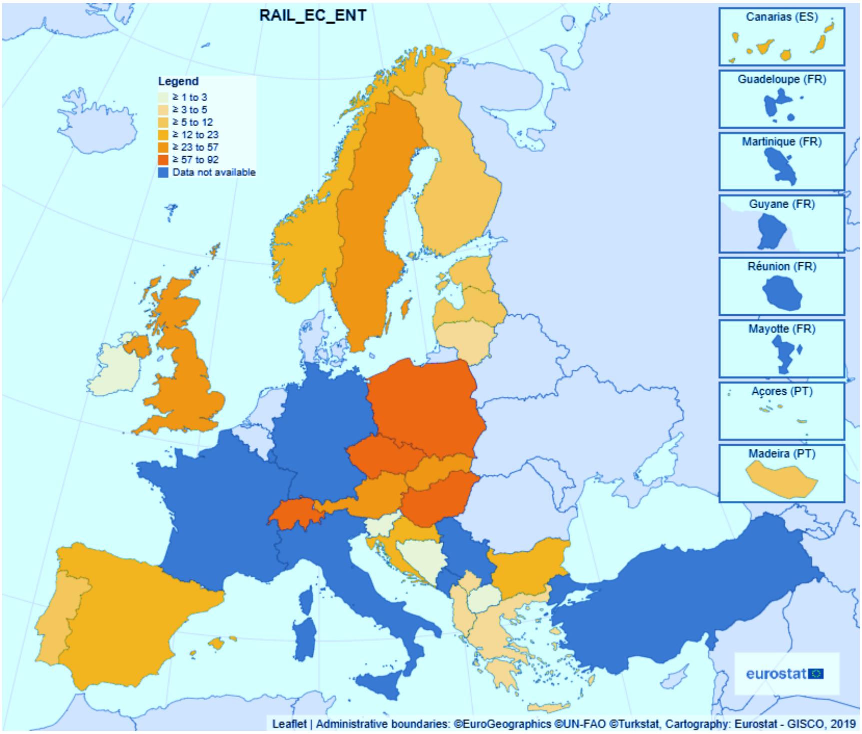

Figure 3.17 The number of railway transport operators in 2021

Source: Eurostat (2023)

One main problem of rail transport delivery "from door to door". Rail transport must cooperate with other modes of transportation to organize flexible delivery services for its customers. Therefore, the development of intermodal (intermodal) transport is significant. Integrating types of vehicles, improving their connections, and establishing a coherent system must ensure that each mode of transport is used optimally. The advantages of transport interaction are as follows: the possibility of reducing total transportation costs, the possibility of transporting larger loads; higher transportation speed; standardization of the transport of containers and semi-trailers; better use of infrastructure; greener transportation due to the reduction of pollution of nature, the possibility of simplifying the transportation process, installing information systems.

Table 3.1

The number of rail transport operators in European countries in 2018

Country	Number of operators	Country	Number of operators	Country	Number of operators
United Kingdom	34	France	64	Poland	77
Bulgaria	7	Croatia	8	Portugal	4
Czech Republic	47	Italy	28	Norway	12
Serbia	1	Latvia	6	Slovenia	1
Germany	201	Lithuania	1	Slovakia	19
Estonia	8	Luxembourg	2	Finland	4
Ireland	2	Hungary	25	Sweden	26
Greece	3	Turkey	1	North Macedonia	1
Spain	13	Austria	33	Switzerland	28

Source: compiled by the author based on Eurostat (2023) and OECD (2023)

COVID-19 caused the twenty-first century's most severe public health and economic crisis. Trade bans, import/export, travel restrictions, supply chain disruptions, and restrictions on regional and international borders have restricted the movement of people and all non-essential goods and services. The rail sector has been hit and is still suffering from the movement restriction measures taken by states to combat the spread of the COVID-19 pandemic. Due to the impact of the COVID-19 outbreak, rail freight revenues across the European Union (EU-27) in most of the countries volume declined (Figure 3.18).

To mitigate the impact of the coronavirus pandemic on the rail sector, the EU is working on temporary rules: exempting companies from certain infrastructure charges and compensating infrastructure service providers for loss of revenue.

The United Kingdom, as of 31 January 2020, ended 47 years of EU membership. It's still unclear what the consequences of Brexit will be for the railroads. The UK rail network connects to the EU via two points: via a fixed link between England and France and through Northern Ireland and the Republic of Ireland. "In 2018, more than 22 million passengers traveled through the Channel Tunnel, 60,000 passengers a day. In addition, Fixed Link carries out about 26 percent of trade in goods between the UK and mainland Europe – which is 140 billion euros a year" (Railway News, 2021). Brexit could affect the UK's rail sector's technical, interoperability, and safety standards. Customs itself could be set up in the Channel Tunnel, which will affect the rail freight industry and the threat of developing congestion and delays, the licensing regime for most public contracts, which include the EU as a single member, will have to be reviewed and possibly amended.

Figure 3.18 Forecasts of losses of freight carriers by rail due to the COVID-19 pandemic in 2021

Source: International union of Railways (2020)

It should be noted that both internal and external factors condition the design of the development of freight transportation by rail. National restrictions of competition in the legal field, uneven technical interoperability, and other access to cross-border rail networks are the main reasons that complicate the development design. The unexpected global consequences of the COVID-19 pandemic and doubts about the long-term integrity of the region are new challenges that need to be assessed.

2.3. The EU measures for the development of cargo transportation services by rail

In recent decades, promoting rail freight transport has been essential to an EU transport policy. 2011 The European Commission has set a target of relocating 30% of freight carried by road over 300 km by 2030 to other modes of transport, such as rail or waterborne transportation, and by 2050 more than 50% to occupy a 35% market share of the rail freight sector in Central and Eastern Europe. In 2011, the White Paper presented a plan for the creation of a European transport space, the development of a resource-efficient transport system, and the adaptation of the European transport area to the needs of the future.

Increasing environmental requirements, growing public concern for a healthy environment, the EU's focus on climate change and mitigating the changes it brings about calls for greater use of rail transport as the greenest mode of transportation, which has a competitive advantage in this regard compared to other means of transport. However, there are obstacles and obstacles to the completion of the internal transport market. It is necessary to assess the needs of the farm in terms of the transportation of goods, restrictions, and requirements of environmental conditions, the limitations of resources.

According to the European Commission's Communication (2010), "Rail transport in Europe was mainly developed in individual countries, with each country setting its rail system according to local conditions, while national industrial enterprises, together with railway undertakings, set their own technical and operational standards. As a result of this development, the European railway system does not have a coherent structure, which is the biggest obstacle to developing a common European railway area" (European Commission, 2023).

There is a lack of integrity between the transport systems of the eastern and western parts of Europe, which causes problems of flexibility and reliability of rail freight transport, and incurs operating costs, all of which have repercussions in competition with other modes of transport and in setting prices for consumers. Addressing these problems is an important objective of designing the EU's transport policy and development and the common economic policy.

In support of the European Union documents, the design of the development of freight rail transport is aimed at:

– efficient railway infrastructure (mobilization of funds, quality assurance, creation of dedicated networks (high-speed, electrified lines), removal of technical barriers, ensuring safety and sustainability);

– an open market for rail services (protectionist reorganization of established operators based on non-discriminatory principles, creation of a competitive, more open, and integrated freight market, ensuring a level playing field for all modes of transport, setting infrastructural charges taking into account costs and impacts the environment);

– the digitalization of rail freight transport, the use of the latest technologies (traffic management, digitalization of documents, collection, and transmission of information, technological processes, and operations, etc.)

European rail freight transport must adapt to changes and new customer needs. This requires a search throughout the supply chain for solutions to reduce costs and increase freight transport efficiency. The transport by rail must be economically advantageous. Innovation, digitalization, and investment are key factors influencing the development of the rail freight sector in the coming decades.

The importance of trans-European networks for the internal market and their role in economic development was assessed in 1994. At the Meetings of the European Councils in Corfu and Essen, where 14 priority projects for transport and 10 in the energy sector were approved. The guidelines have been repeatedly supplemented (1996, 2003), and the adoption in 2006 of the new trans-European energy networks (TEN-T) policies, which divided the projects to be financed from the budget into three categories:

✓ projects of common interest relating to electricity and gas networks with potential economic viability;

✓ priority projects to be prioritized in the allocation of European Union funding;

✓ ‘projects of European interest’ also means priority projects with a cross-border dimension or projects with a significant impact on cross-border transmission capacity (Coito & Gouardères, 2020).

Between 2001 and 2016, four legislative packages (2001, 2004, 2007, 2016) were adopted to open up rail transport services markets to competition gradually, make national rail systems interoperable, and define the appropriate framework conditions for developing a single European railway area. The fourth railway package is a package of legislation designed to complete it in the single market for rail services, the single European railway area. Eliminate the different technical, operational, and legal issues that hinder the efficiency of international rail operations.

The development and transformation of rail transport are reflected in the EU's transport policy documents: the EU's growth strategy Europe 2020, the 2011 White Paper "Roadmap for a Single European Transport Area. Towards a competitive resource-efficient transport system", Directive 2 012/34/ES/ES of the Europa Parliament and the Council of 21 November 2012 establishing a common railway area for Europa (recast). 2016 The Paris Agreement on tackling climate change, etc. Rail 2050 VISION reflects the vision of the rail sector, along with technical development, research, and innovation.

The National Transport And Communications Development Programme for 2014-2022 (2013-12-18) and its "strategic goal is to create a sustainable, environmentally friendly, competitive and high value-added Lithuanian transport system in Lithuania has been approved in Lithuania" (Ministry of Transport and Communications of the Republic of Lithuania, 2022).

One of the first tasks for Lithuanian railways is to increase the freight mobility of geležinkele transport by installing a 1,435 mm wide gauge road from Kaunas to the state border with Latvia, installing second roads, implementing the Rail Baltica project, electrifying the TEN-T infrastructure, establishing the European Rail Traffic Management System (ERTMS). The European Railway Traffic Management System (ERTMS), by increasing energy efficiency, electrification of railways, implementing ITS solutions to help plan and manage traffic flows, reduce transport times and fuel consumption, and improve traffic safety (Ministry of Transport and Communications of the Republic of Lithuania, 2022).

It also notes that if the planned projects are not implemented, new directions of cargo flows between East and West may form, bypassing Lithuania.

Europe needs the development of railway infrastructure and government support to check the reliable and sustainable movement of goods. The development of the EU's transport infrastructure entails high financial costs. Support is provided through a variety of EU funding instruments. The two main instruments are the Connecting Europe Facility (CEF) and the European Structural and Investment Funds (ESI Funds). Between 2014 and 2020, the budget of the ERDF and the Cohesion Fund amounted to EUR 18.6 billion for railways. Eur or 27% of the total allocated funds, 44% of ERDF and Cohesion Fund expenditure in the transport area went to roads (European Audit Chamber, 2018). The EU funds can cover only a tiny part of the overall investment needs, so priorities will be given to those projects where the added value is highest, and they are included in national projects in countries.

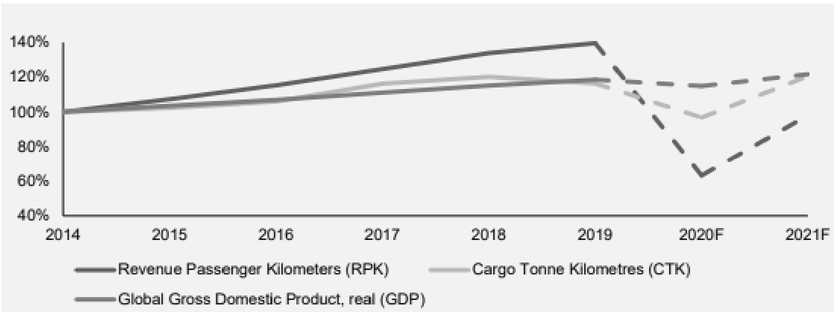

Figure 3.19 Global economy GDP, trends in passenger and freight volumes

Source: PricewaterhouseCoopers (2020)

An analysis of the current situation, development opportunities, and bottlenecks leads to the conclusion that ensuring the mobility of rail transport is a key challenge for the EU's internal market while maintaining the competitiveness of services. This has a significant impact on economic growth and job creation. The design of the development of the transportation of freights by rail is one of the ways that would help to solve the problems of cargo transportation, energy saving, pollution, and more efficiently transporting goods over longer distances. The majority of rail freight is made up of interfacial transport, so the paving tasks in the development design are investments in infrastructure and interoperability and the introduction of digital technologies and innovations. For the development directions to be successfully implemented, the EU legal framework has been prepared, taking into account national interests, and financial support for individual regions is provided for integrating railways into the single European market.

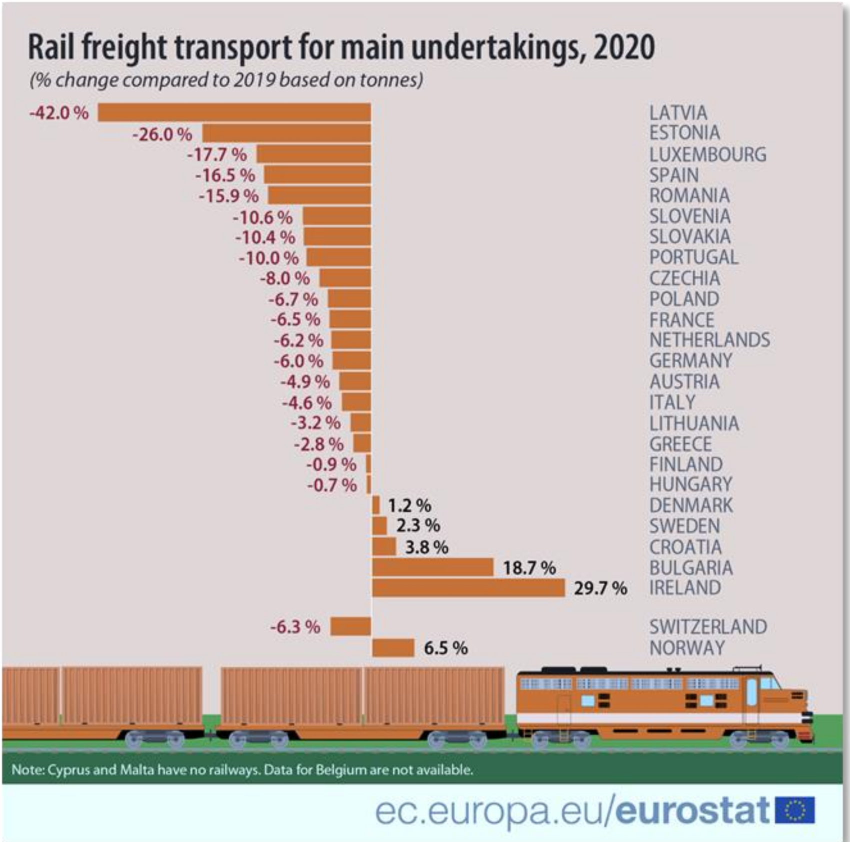

Figure 3.20 The impact of COVID-19 on the fall in freight traffic revenues by country in 2020 (% in tonnes)

Source: Eurostat (2023)

The closure of borders and strict safety requirements during the COVID-19 crisis has led to a shift from road transport to rail services, as boundaries have remained open for freight transport. However, with a decrease in production, freight transport has also decreased, and GDP indicators are also falling.

The EU's recovery plan will provide more funding to help railways return to a normal rhythm of work and loss of income due to the virus crisis.

Rail freight transport in Europe must change in such a way as to increase its market share and ensure sustainable economic growth. If this were successful, customer service would improve operational efficiency and ensure the development of the volume of one of the most environmentally friendly modes of transport. Cargo transportation by rail must meet market demand by improving the customer service system and accelerating the development of the logistics chain, which provides transportation, warehousing, transshipment, distribution, information transfer, and other services.

3. DESIGN OF THE DEVELOPMENT OF FREIGHT TRANSPORT SERVICES BY RAILWAYS

3.1. Increasing the volume and operational efficiency of freight transport

Cargo turnover is the product of a certain amount of cargo (in tonnes) and transport distance (km), that is, without the weight of the rolling stock on which the cargo was transported. 'The movement of the mass of a load is defined by the turnover of goods, calculated in cash in tariff tonne-kilometers (tariff tonne-kilometers are the product of the mass of each shipment and the distance of carriage, according to the journey notes' (LietuviuZodynas.lt, 2023).

The volume and turnover of freight transport depend on many factors: the size of the territory, the sources of raw materials, the regions of product use, the cargo structure, the degree of development of the transport network, the speed of delivery, the capacity of the technical base, traffic management, the level of competition, the level of legal regulation, the amount of taxes, the introduction of automation and digitalization. The financial indicators of the railways reflect the economic condition of the countries.

Table 3.2

Rail transport indicators for the EU-27

The volume of freight transport in the transport sector (Eur)	3352,6
Rail freight volume (Eur)	423,3
Rail share in the overall transport sector (%)	12,6
Rail share of GDP (%)	1,8
Length of lines (1000 km)	200,6
Length of electrified lines (1000 km)	111,6
Share of international cargo transportation (%)	51
Number of railway undertakings	929

Source: composed by the author based on Eurostat (2023)

The efficiency of rail transport in the transport of goods in a competitive environment is relevant all over the world. The development design always aims to reduce costs while improving the level of railway services and strengthening railway capacity. Railway development projects require huge investments, so a profitable return on the invested capital is expected. Several indicators can define the efficiency of rail freight transport, for example, energy efficiency (changing the type of fuel and using renewable energy, replacing heat carriers with electric carriers), the degree of reliability, electrification efficiency (comparing the costs of installing lines and the revenues of the amount of cargo transported), the efficiency of resource use, etc. After the implementation of development projects, it is necessary to earn enough to cover all the costs incurred and to be able to plan further activities.

The efficiency of cargo transportation also depends on the use of multimodal transport. The trans-European transport network (TEN-T) is therefore essential for transport in the internal market. The operation of a pan-European transport network ensures connectivity to all regions, including those remote from the main corridors. The most crucial freight flow movement occurs by combining road and rail transport to the most important European ports: Germany-Italy, Belgium-Italy, Czech Republic-Germany, Germany-The Netherlands, and Italy-The Netherlands (Table 3.3 and Figure 3.21).

Table 3.3

Comparison of international freight transport by combined transport in Europe in 2015 and 2017

Trade lane		TEU			Tonnes		
		2015	2017	Develop-ment	2015	2017	Develop-ment
Germany	Italy	1,488,080	1,553,328	4.4%	19,501,043	19,915,267	2.1%
Czech Republic	Germany	659,792	756,729	14.7%	6,000,182	7,649,439	27.5%
Belgium	Italy	580,173	714,694	23.2%	7,401,498	9,156,448	23.7%
Germany	Netherlands	667,378	581,379	-12.9%	6,215,813	6,686,219	7.6%
Italy	Netherlands	288,632	458,025	58.7%	3,394,024	6,118,486	80.3%
Austria	Germany	268,860	358,729	33.4%	3,603,502	3,896,851	8.1%
Slovakia	Slovenia	258,921	319,922	23.6%	1,887,370	2,552,178	35.2%
Germany	Sweden	193,878	256,745	32.4%	2,067,542	2,813,600	36.1%
France	Italy	194,123	247,682	27.6%	2,371,238	3,259,281	37.5%
Hungary	Slovenia	179,215	217,777	21.5%	1,597,440	2,122,831	32.9%
Germany	Spain	174,381	214,299	22.9%	2,312,509	2,567,637	11.0%
Germany	Hungary	241,296	209,436	-13.2%	2,322,884	2,321,643	-0.1%
France	Luxemburg	178,766	205,037	14.7%	2,281,597	3,127,385	37.1%
Germany	Switzerland	148,188	168,742	13.9%	1,871,791	1,662,626	-11.2%
Germany	Poland	160,475	161,026	0.3%	1,274,739	1,284,398	0.8%
Belgium	France	131,878	152,626	15.7%	1,128,225	1,299,600	15.2%
Belgium	Spain	104,198	143,817	38.0%	1,432,094	1,891,514	32.1%
Austria	Italy	31,088	136,509	>100%	327,574	1,568,315	>100%
Czech Republic	Netherlands	80,865	116,105	43.6%	481,528	802,261	66.6%
Russia	Slovakia	58,984	102,090	73.1%	210,543	689,465	>100%

Source: International Union of Railways (2020)

Given the scale of the cargo being transported, the inevitable is the combined transportation of freight, which "reduces transport costs and helps to implement the supply chain of goods or raw materials more efficiently, expands the possibilities of delivering goods to the door" (A2Cargo, 2023). The most significant influence on the populism of combined transport was made by using cargo containers. EU countries had 14,802 wagons for intermodal transportation in 2018.

Containerization was the basis for creating a seamless freight transport chain in Europe.

Rail transport is convenient for the regular transportation of large quantities of goods, mainly if they are transported in containers. Containerized transportation allows you to haul almost all types of cargo and ensures their safety. The structure and characteristics of the currents transported are not decisive for the volume of cargo transportation, but it is essential when choosing the type of wagon.

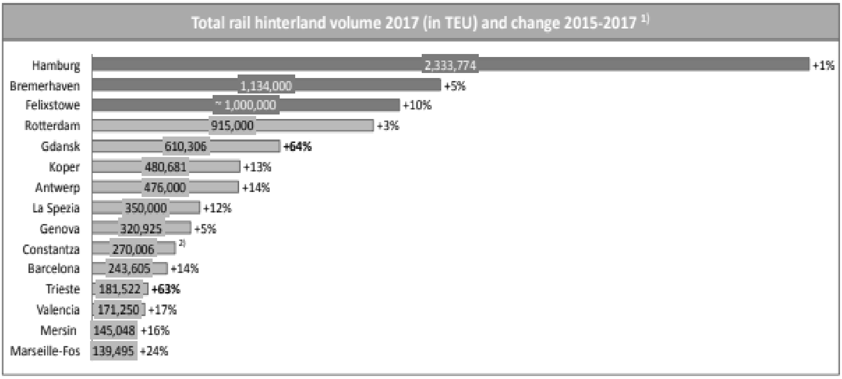

Figure 3.21 Transportation of containers by rail to European ports 2015-2017

Source: International Union of Railways (2020)

The amount of cargo transported depends on the demand, places of production, and consumption. In the last decade, the structure of freight transport among the major European carriers has changed slightly. Agricultural production, wood, and its products in 2018 transported 2% less than in 2010, while the transport of chemical and petroleum products has increased. Coal, crude oil, and natural gas shipments remained stable (Table 3.4).

The essential condition for the services provided by rail freight transport is to deliver the cargo at the right time in the right place. Opening borders in the European Union has made it possible to transport goods outside nation-states. Other resources are also needed to deliver goods safely and precisely when needed and when required; it is not enough to have a broad market alone. Firstly, rail networks with modern infrastructure and traffic management are based on resource savings, the use of renewable energy, and environmental protection. Railways can be the basis for an integrated multimodal transport system in Europe.

Research and the latest innovations are being made to meet the needs of European rail freight services. In 2014 the EU set up the Shift2Rail agency, whose research focuses on advanced technologies and solutions for the railway. Shift2Rail has released.

Figure 3.22 Freight rail freight connections in Europe
Source: Stone-ideas.com (2023)

A catalog of solutions consisting of 54 solutions covers many aspects of rail and infrastructure development: ‘so-called ‘horizontal innovative railway solutions, ‘optimized infrastructure,’ ‘European rail freight transport,’ ‘traffic management,’ ‘passenger trains,’ and ‘digital services’ (The European Rail Industry, 2022).

It can be summed up that thee-conic growth of the European region is associated with efficient cargo transportation. However, the uneven rail network development between the central part of Europe and the more remote areas is a topical problem. Railway infrastructure projects are prioritized by helping to ensure smooth freight flows internationally by promoting intermodal transport and, at the same time, improving access to the regions.

Table 3.4

Rail freight transport by leading freight group in 2021 (tonnes)

Type of goods	Tonnes, 2021
Metal ores	228 549 882
Coal and crude petroleum	177 701 607
Basic metals; fabricated metal products	140 655 206
Coke and refined petroleum products	137 841 127
Chemicals, rubber, and plastic, nuclear fuel	114 108 967
Products of agriculture	95 638 384
Wood and products of wood and cork	53 593 853
Other non-metallic mineral products	41 539 420
Other goods	174 213 680
Unidentifiable goods	329 372 513

Source: compiled by the author, based on Eurostat (2021)

The design of the development of the rail network is to focus on the infrastructure for the provision of rail freight services, to optimize the interoperability of individual rail networks, to enable intermodal freight transport along the entire transport chain by environmentally friendly and safe means of rail transport, to strengthen the integrated European railway's space.

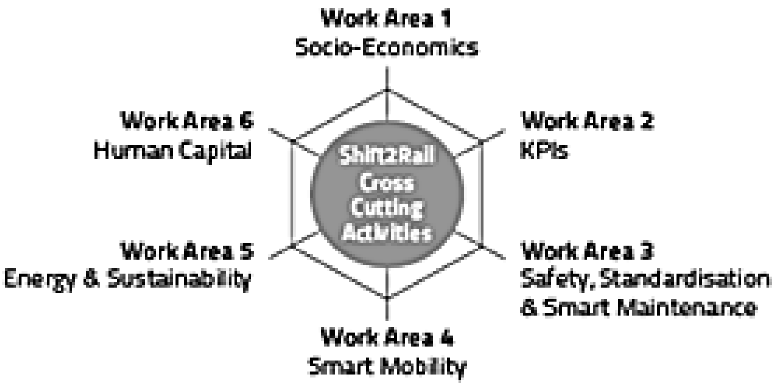

Figure 3.23 Directions of research on the development and modernization of the Shift2Rail railways

Source: The European Rail Industry (2022)

The EU rail network consists of high-speed and conventional lines, infrastructure, and facilities, which allow the integration of railways and other modes of transport.

By 2015, as a result of the implementation of the projects, railways with a standard gauge of 1435 mm gauge accounted for 77% of the TEN-T railway network, around 81% of the TEN-T was electrified, ERTMS operates 9.5% of the main network corridors (European Union Agency for Railways, 2019).

3.2. Priority of rail freight transport - design for the development of the railway network

The European Commission 2015 supported the construction and renewal of transport infrastructure across the EU and developed the Trans-European Transport Network (TEN-T) program. The sub-base tasks of this program are:

✓connecting the 94 main European ports with rail-road connections;

✓to connect the 38 main airports with rail connections with major cities;

✓upgrading high-speed 15 000 km of railway lines;

✓thirty-five cross-border projects have been developed to reduce barriers (Global Mass Transit, 2022).

The development of the trans-European transport network includes nine core network corridors, cross-border infrastructure high-speed lines, bridges, tunnels, ERTMS, and smart environmental projects (Table 3.5).

The European Commission announced in 2020 that it had approved more than EUR 1.4 billion in funding for the project. An investment package worth Euro for 14 large infrastructure projects in seven countries. Funding for the rail network is also included in this package. "The investments will help develop the Croatian rail network, modernize four Polish railway lines, and improve rail links along the Atlantic corridor (Global Railway Review, 2022).

Table 3.5

Projects of the railway network on the TEN-T corridors 2014 - 2030

Main network corridors	Rail network projects + ERTMS	Estimated investments (bln. EUR)	GDP forecast for 2015-2030 (bln. EUR)	Project objectives
NSB North Sea-Baltic Sea	127	37.9	715	Connect the Baltic Sea Region with the countries of the North Sea region on the Helsinki Road, The Baltic States, Poland, and Germany.
RALP Rhine-Alpine	110	73.4	743	Gotthard Tunnel – high-speed trains from Zurich to Milan to reach in 30 minutes, increase the share of international freight transport to 50.3%, rail -22.2%
BAC Baltic Sea-Adriatic Sea	170	37.9	535	Upgraded to TEN-T standards railway line E65 between the main ports Gdynia, Gdańsk, and Warsaw, 18% of the corridor enable ERTMS technologies
MED-Mediterranean Sea	124	77.7	622	Installation of Lyon and Turin railway connections with a 57.5 km Mont Cenis tunnel across the Alps, the share of freight transport increased from 13% to 27%
OEM-East/Eastern Mediterranean	177	40.4	517	Provide quick access between 2 ports in northern Greece
ATL-Atlantic Ocean	112	26	419	Improve rail connectivity and increase competitiveness in the Atlantic promoting an environmentally friendly environment

NCM-North Sea-Mediterranean Sea	92	33	299	Link the main dutch, Belgian, and French seas inland ports with terminal networks, logistics centers, multimodal connections, expanding the network.
SCM-Scandinavia-Mediterranean Sea	167	132.5	1 468	The new Brenner Tunnel increased rail capacity to 400 trains per day and reduced travel time between Munich and Verona from 5.5 am to 3 pm.
RDN-Rhine-Danube	141	54,7	725	Reducing emissions from 20.4 million tonnes of CO_2 to 19.7 million tonnes, improving the energy efficiency of the Green Danube port, intermodality
Total	**2220**	**513,5**	**6043**	

Source: compiled by the author, based on European Commision (2017)

To build the infrastructure base by joining the Trans-European Transport Network (TEN-T) to strengthen international rail links with neighboring countries, the European Commission has established the Innovation and Networks Executive Age (INEA), which is responsible for all TEN-T projects and involves all EU Member States. INEA implements EU programs: the European Infrastructure Networks Facility (CEF), Horizon 2020. The CEF supports investments in constructing new transport infrastructure in Europe or restoring and upgrading existing infrastructure. A list was published on the prevention of the acquisition of new projects, emphasizing the call for the development of an integrated and environmentally friendly transport system. It invites applications for more than 70 railway infrastructure works and feasibility studies (European Commision, 2023).

Projects include constructing new lines, the modernization of capacity at national borders, transshipment installations in ports, the construction of high-speed lines, electrification, etc. The funded projects also include Rail Baltica phase IV and V works not only in

Lithuania but also in Latvia and Estonia. Funding is foreseen at EUR 108 901 295 for construction works and EUR 74 884 300 for scientific studies on the need for multimodal traffic and the design of local objects (European Commision, 2023).

Railway projects are designed to implement common technical standards and the European Rail Traffic Management System (ERTMS) and the need for investment funds for the realization of projects 2021-2030. would amount to around 500 billion euros.

The emergence of the European Transport Network (TENT-T) program was necessitated by the need for greater integration between the eastern and central parts of Europe, an infrastructure policy enshrined in the Maastricht Treaty of 1992, which aims to allow goods and people to move across borders using a multimodal transport network. Based on research, the program consists of projects to remove cross-border barriers in the common transport area, national roads, railways, water, air, and traffic management systems. Program projects, although many of them are long-term, are submitted for specific periods: 1996-1999, 2000-2006, 2007-2013, 2014-2020, and 2021-2030. For example, the Gotth Ardo Tunnel, one of the most significant railway projects, took 17 years. Although the plans for the tunnel between Amsteg and Bodio were drawn up in 1947. The Stats, which cost around €11.5 billion, were completed in 2016. The world's largest and deepest 57 km Gotthard railway tunnel in Switzerland, a rail link under the Swiss Alps between northern and southern Europe, part of the European Rhine-Alpsfreight corridor.

The research, development, efficiency, execution, development, and development of strategies for the railway networks are coordinated by the International Railway Union-UIC, and the formation of the railway system – is by the European Association of the Railway Supply Industry UNIFE.

It should be noted that significant projects for the development of rail freight transport are related to the construction and modernization of infrastructure and the improvement of the connections of the transport system.

3.2.1. Rail Baltica – the largest railway infrastructure development project

Rail Baltica is the European railway network's largest infrastructure project on the North Sea-Baltic Sea TEN-T corridor. The line will be fully electrified, without emissions, which is why Rail Baltica is also called the "green" project. The territory of Rail Baltica is part of the Baltic Sea Region (BSR), and an electrified line will connect Warsaw, Kaunas, Vilnius, Riga, Tallinn, and Helsinki by sea route. The costs of the project is about 5.79 billion euros.

The idea of Rail Baltica dates back to 1994 to create regional connections around the Via Baltica road. The concept of the emergence of the project was discussed several more times. In 2003, a coordinating group of Lithuania, Latvia, Estonia, and Poland was formed to consider investment opportunities in this project, and in 2010 the transport ministers of these countries signed an agreement on the study of the project. In 2013 a detailed technical, environmental, and line planning analysis has begun (Rail Baltica Official website, 2023).

Due to past obstacles such as the poor quality of the north-south network, low international freight and passenger traffic, low service levels, different technical standards, and the lack of integration, Rail Baltica has declared a priority project for TEN-T 27. The economic growth of the Baltic States and the accession to the EU in 2004 determined the possibilities for the emergence of the project. In the area of rail freight, the project will increase the rail network's capacity, improve the opportunities for intermodal traffic and thus promote trade with other European countries.

After connecting the Baltic states by rail, the trans-European network through Poland will take the Baltic freight carriers to Germany and Western Europe. International connections between modes of transport – railways, roads, seas, airports – will ensure fast and convenient interregional transport not only of passengers but also of goods, more strengthening of intermodal communications, energy savings, and a "green" direction will be implemented through the electrification of the line, traffic management and labor costs will be reduced by the introduction of ERTMS.

The Rail Baltica project aims to ensure equal access to prie services and infrastructure in EU countries, develop sustainable modes of transport, and strengthen links and cooperation between EU regions.

Figure 3.24 Rail Baltica line planned for 2007 and 2011
Source: Geocaching (2019)

Rail Baltica project:

➢ Part of the TEN-T corridor of the EU's North Sea-Baltic, length: 870 km;

➢ The medium-term implementation period of 10 years, standard 1435 mm carried;

➢ EUR 5.8 billion in investment in the region;

➢ Funded by the EU (CEF), Estonia, Latvia, Lithuania, implemented by Estonia, Latvia, Lithuania;

➢ Designed for passenger and freight traffic, freight train speed 160 km/h, passenger <200 km/h;

- ➢ Eco-friendly-electric energy consumption, less noise;
- ➢ Intermodal and multimodal services;
- ➢ 520 projects (130 roads, 127 railways, 76 seas, 75 airports, 36 inland waterways, 16 ERTMS);
- ➢ 2.06 million jobs, 715 billion euros in GDP by 2030.

The coordinator of the Rail Baltica project is RB Rail AS, founded in 2014 and registered in the Republic of Latvia to create the railway infrastructure and develop the first Baltic Sea infrastructure project. Its main activity is the railway's design, construction, and marketing. National companies of the countries are responsible for implementing the project: Rail Baltica Estonia OÜ (Estonia), SIA Eiropas dzelzcela lines (Latvia), UAB Rail Baltica statyba (Lithuania).

Table 3.6

SWOT of the Rail Baltica project

Strength	**Weaknesses**
Introduction of new technologies, digitization of traffic management; Low cost of transportation; Saving resources through the use of renewable energy; Reduction of air pollution, and noise.	High financial costs; The compensation mechanism for landowners is not solved; Political disagreements over the implementation of the project; Operating costs of two different types of railways.
Options	**Threat**
Integration and interconnection between the regions of Northern and Southern Europe; The entry of freight transport into the single European market; Strengthening new jobs, economic-social well-being.	Different national regulations on freight transport; There is still a dependence on the Russian energy system; Forecast-based cargo volumes.

Source: compiled by the author

The project involves a large number of construction, supply, production, technology, engineering, safety, maintenance, control, management, organization teams, and organizations. 8 countries (Finland, Estonia, Latvia, Lithuania, Poland, Germany, the Netherlands, Belgium) are interested in the implementation of the project, 13 seas, 18 inland ports, 44 regions, 16 airports and various infrastructure companies, cargo carriers, the public.

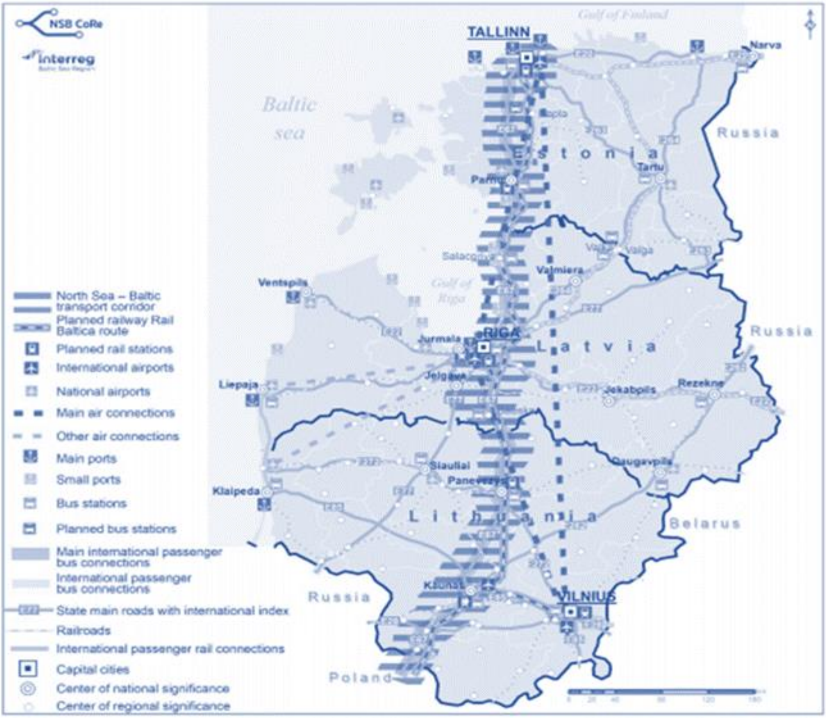

Figure 3.25 Rail Baltica project integration links on the Ten-T corridor of the North-Baltic Seas

Source: Helsinki-Uusimaa Regional Council (2019)

In Lithuania in 2011, the track of the Rail Baltica project in the Baltic States was approved, and a new collated way was installed on the 1435/1520 mm line Mockava – Šeštokai (7 km). In 2014, a feasibility study was prepared and approved, technical possibilities for terms deployment were envisaged, technological opportunities for terms deployment were envisaged, the economic justification was analyzed, and a cost-benefit analysis of each implementation stage was prepared. In 2015, the 1435 mm broad European geležinelis gauge was used in the Lithuanian/Polish border – Kaunas section. In order for the entire project to be successfully implemented, the transparency of the works is ensured by the agreement on the Rail Baltica procurement model (signed in 2017) and on the role of the RB Rail Joint Undertaking in the design, construction, and advertising of Rail Baltica, compliance with the corporate governance principles set out in the Economic Cooperation and Development Organization (OECD) standards.

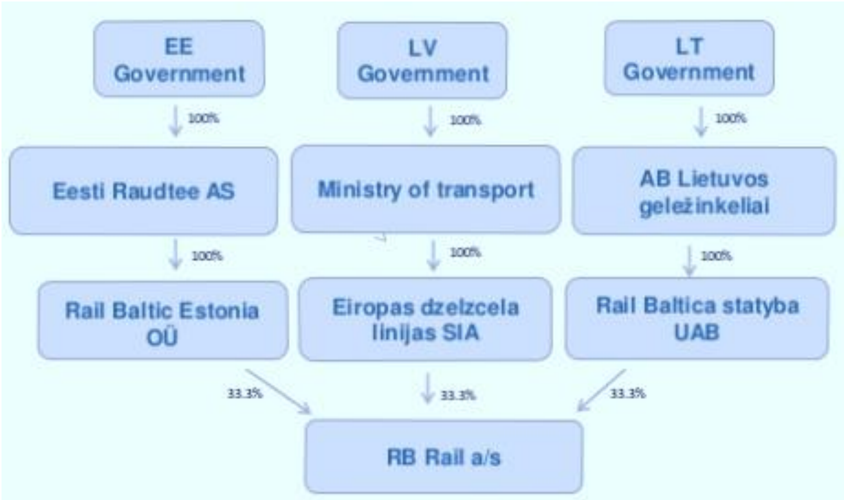

Figure 3.26 Rail Baltica project promoters

Source: Business Finland (2023)

Since the beginning of the project development, and especially at the project construction stages, the Rail Baltica project management has been transferred to the software system – Oracle Primavera P6 and Oracle Primavera Cloud solution management, programming, planning, and risks reporting software, which can track the progress of the project, detect glitches and find optimal solutions.

Rail Baltica is a large-scale investment project and stands out for its uniqueness. In all countries, the project implementation does not start simultaneously but is a continuous phase of the previous task or takes place in parallel. The starting point for the project can be considered the year 2004, when the project was included in the list of priority transport projects. 2010, when the states signed a memorandum expressing the political will and commitment to carry out implementation work, is also important. Although the construction works of the line have already taken place, in 2017, the governments of the Baltic states once again consulted on the project's development **(**Kalinkaitė-Matuliauskienė**,** 2020). The pro-design phase, as in some projects, does not have a specific end, it continues almost until the end of the project, taking into account how the work already started is completed, the changed situation, the allocated funding (Table 3.8). In 2019, design works were created in Latvia in the central part of Riga and the direction of Lithuania and Estonia. At the beginning of 2020, design works took place on the Tootsi sections of Tallinn – Rapla and Rapla – and Lithuania performed design works on the area from Kaunas to the Latvian border.

Table 3.7

Progress and deadlines for the Rail Baltica project (following the example of the GANT timetable)

Implementation	**2010-2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Study														**TESTING PHASE**
Scientific research														
Analyse of possibilities														
Projection														
Construction of railway lines														
Construction of stations and terminals														
Technical maintenance														
ERTMS implementation														
Electrification														

Source: compiled by the author

On 10 May 2010, the first construction works of the Rail Baltica railway line on the section Sestokai – Mockava were started, but only in December 2013 the construction works of the Rail Baltica railway line were completed and confirmed that the project complied with the 2014-2020. A national transportation development plan and funding were provided.

Table 3.8

Stages of the implementation of the Rail Baltica project

Stages of the project	Implementation	Date	Financing
Stage I	**Polish/Lithuanian border – Kaunas** (123 km), **"Muuga" cargo terminal**, **Ülemiste passenger terminal and viaduct in Estonia**	2013-2015	EU structural assistance (cohesion fund) and TEN-T program support, CEF Funds (including CEF) Lithuania - EUR 2.47 billion; Latvia- €1.97 bln. Euro Estonia: 1.35 billion Euro
Stage II	Section **Kaunas (Palemonas) – Panevėžys – LV border.** (169 km**), Central station in Riga, Geležinkel bridge over Daugava river, railway section of Riga airport**	2020-2025	
Stage III	Section **Vangažu – Latvian/Estonian state border** (94 km): Section **Misos river-Latvian-Lithuanian state border** (45 km): Section **Pärnu-Estonian / Latvian state border** (93.5 km)	2018-2025	
Stage IV	In Estonia- electrification works., Ülemiste railway terminal in Tallinn, Muugakroviniai terminal, ERTMS installation, elactification	2020-2025	85% of the funding required for the works of the Rail Baltica project was provided by the EU. Each allocated other funds (i.e., 15%) by Lithuania, Latvia, and Estonia.
Stage V	Final works of railway lines **in Lithuania – 392 km, in Latvia – 265 m and Estonia – 213 km final works, testing, the opening of traffic**	2025-2026	
			5.79 bln. Euro

Source: created by the author

The construction of a 1435 mm railway line in the Rail Baltica corridor through Estonia, Latvia, and Lithuania is financed by EU funds (85%) and the project promoter (15%). 2020 An additional

EUR 184 million was allocated to the Rail Baltica project in the Baltic States. CEF funding, with other investments in the Rail Baltica Global project amounting to €216 million by 2024 (Rail Baltica, 2020). Support to countries can resume once the 2021 technical project has been completed and after forecasting and studies of possible passenger and freight flows have been carried out.

The Rail Baltica project of European integration is not only a railway line with stations and terminals but also new business opportunities, and new directions in freight flows will be jobs for people in the region.

Direct benefits of freight transport development projects:

- ✓ time savings for freight transport;
- ✓ savings in the operating costs of vehicles for road users;
- ✓ reduction of accidents on the road;
- ✓ reduction of noise pollution;
- ✓ reduction of air pollution;
- ✓ reduction in greenhouse gas emissions.

The project's cost-benefit analysis states that "the construction of a new railway will create a high-quality economic corridor that will increase the mobility of passengers and goods, and the estimated socio-economic benefits of the project will amount to EUR 16.2 billion euros" (Rail Baltica, 2020).

Table 3.9

The value of the project "Rail Baltica"

Project value (euro)	
Lithuania	
EU funds	€2.473 billion
Project promoter	€493 million
Latvia	
EU funds	€1.968 billion
Project promoter	€393 million
Estonia	
EU funds	€1.35 billion
Project promoter	€268 million
Total:	**€6.945 billion**
EU funds	€5.791 billion
Project promoter	€1.154 billion

Source: compiled by the author based on Rail Baltica (2020)

Since the implementation of the project is only halfway through, the benefit analysis is based on interim information and forecasting, taking into account the project implementation practices of other countries, providing for equal access to infrastructure following national and EU legislation.

An analysis of macroeconomic factors that may affect the project is carried out to assess the impact of the project. According to the PEST methodology, political, economic, social, and technical factors are characterized.

Table 3.10

The influence of macroeconomic factors on the development of rail freight transport

The influence of macroeconomic factors on the transport of goods by rail			
Political	EU directives on emission limitation.	The creation of the EU railway network reduced the political influence of Russia and the CIS countries.	Development of the railway network on the North-Baltic sea corridor increased, and new freight flows between regions.
Economic	Economic integration, Collaboration, elevated demand for goods and services.	Cargo flows the increase stimulates the economic growth of countries.	Increased activity of logistics centers, enterprises located near the railways.
Social	Clean vehicle development due to environmental requirements.	Caring for a healthy environment for the population, pollution, noise norms.	Labor mobility in the region served.
Technological	Development of transportation methods (intermodality) – combining vehicles for cargo transportation.	Digital Information application of technology in the provision of services.	Modernization of transportation processes and the development of new technologies are required.

Source: compiled by the author

The final report of the 2017 Rail Baltica Global cost-benefit analysis, taking into account the performance of the carriers, states that the project will be financially profitable for carriers. The data provided shows that after the implementation of a large investment project after 25 years. Profit will be almost 24% of income. The average operating costs will be 2.4 times lower than the income received (Rail Baltica, 2020).

Table 3.11

Financial performance forecasts by the freight carrier

Mln. Euro	2030	2040	2050
Income	189,1	240,9	270,0
Million tkm	4710,0	6001	6725
Operating expenses	81,2	101,7	114,0
Operating profit	42,2	58,7	64,1
Operating profit margin (%)	22,3	24,4	23,6

Source: Rail Baltica (2020)

Table 3.12

Allocation of Rail Baltica's investment costs in Lithuania

No.	Title of expenses	EU investment (mln. euro)	Investments for Lithuania (mln. euro)
1	Technical studies, planning, and design	219.4	32.0
2	Railways	2 403.8	761.2
3	Electrification	512.4	171.9
4	Alarm	356.0	138.2
5	Crossings	683.6	229.8
6	Bridges	406.4	184.6
7	Stations and facilities	710.8	74.6
8	Noise walls	120.0	33.3
9	Land acquisition	129.9	35.0
10	Contingency costs	173.0	73.7
	Total:	**1 734.2**	**5788.1**

Source: compiled by the author based on Rail Baltica (2020)

Along with the financial return, the most important quantitative and qualitative aspects of the economic-social impact are also evaluated, attributing monetary significance to such aspects. "SNA, CBA, Cost-benefit analysis) – cost-benefit analysis – a method of assessing the effectiveness of investments, the essence of which is the comparison of the costs required to implement the project with the socio-economic benefits generated by the investment" (ES Investicijos, 2023).

Table 3.13

Conversion factors based on conversion factors

Cost (the conversion factor)	Conversion factor marking	Conversion factor 2019	Cost level by conversion factor
Costs of installing railway infrastructure (railways)	KK1	0,904	761,2
Costs of installing railway infrastructure (stations, installations)	KK1	0,904	74,6
Costs of installing railway infrastructure (bridges)	KK1	0,904	184,6
Total:	**KK1**		**1020,4**
Costs of installing railway safety measures (alarm)	KK3	0,904	138,2
Costs of installing railway safety measures (crossings)	KK3	0.904	229,8
Total:	**KK3**		**368,0**
Costs of reducing rail noise pollution (noise walls)	KK4	N/a	33,3
Costs of reducing rail air pollution (electrification)	KK6	N/a	171,9
Total costs (million euros)			**1593,6**

Source: compiled by the author based on Rail Baltica (2020)

The cost-benefit analysis method can measure a project's contribution to the well-being of a region or country and social benefits to society. One of the main goals of such projects is the satisfaction of social, economic, and environmental needs. In the freight transport additional policy field, economic analysis is applied to assess the importance of a particular project. Cost-benefit analysis helps answer whether the project is worth implementing with limited resources to get the maximum benefit.

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Table 3.14

The net present value of the Rail Baltica project will benefit Lithuania

Sector	Benefit (effect component)	Estimates 2019* (euro)	Net current value
Transport	1. Time savings freight transport: euro per hour per tonne of cargo transported	4,77	13327,86
	3. Reduction in accidents: − death; − for serious injury; − for mild injury. 4. Reduction of noise pollution (≥60) 6. Reduction in carbon dioxide (as a greenhouse gas) (central value)	 607 474,44 86 966,94 5 845,90 23,09 25	 1697344332, 8 242994327,1 16334029,2 64515,8 69852,5
	All the benefits		**1956,82 (mln euro)**
	Benefit-cost ratio: N/S=1956.82/ 1593.6		**1,23**

Source: compiled by the author based on Central projects management agency (2019)

The choice of benefit components is based on the approved list of typical projects in the transport sector (Central projects of public institutions management agency, 2019).

The cost-benefit analysis shall calculate the impact on society. This effect is manifested in social benefits, which include improvements in the ecological environment, the state of health of the population, time savings, better conditions for mobility, a decrease in accidents, etc. time savings are among the most significant benefits. They have a direct impact on reducing transportation time. Noise pollution has an impact on the health of consumers when railways are located near densely populated areas.

In the cost-benefit analysis, these aspects are expressed in monetary terms and compared with the investment made to the project. If the project's benefits exceed its cost, it is worth implementing it.

The calculation of the benefits of the implemented project for Lithuania was based on the impact of changes in railway transport, taking into account the number of permanent residents in 2020. as of January 1, according to official statistics, it was 2,794,100 inhabitants (Lithuanian official statistics portal, 2023). It is assumed that a slight variation in the number will not have a significant effect. A conversion factor of 1.23>1 indicates that social benefits will be achieved.

It is predicted that cargo flows will increase not only between the north and south corridors but a significant part will also go to transit between countries with a 1520 mm geležinkel track gauge system, and through the intermodal terminals of the Baltic States, cargo will travel to different countries of the world.

The implementation of projects is a test for all sides involved in it. Some sections of priority projects are being designed at different times, resulting in rising prices, rising pay costs, a change in political conditions (sanctions, Brexit), stricter environmental protection requirements, growing resentment among landowners over the compensation mechanism, protectionism, the decisions of the late-halibut of individual states are starting to stall and funding. Not deviating from the plan may mean that costs are increasing, and the project may exceed the budget. Therefore, constant supervision of the project, control, and ensuring financing at all stages of design and construction is required.

Designing the development of freight transport by rail is a difficult task. The presented example of the implementation of the Rail Baltica project shows the scale of the projects being implemented in the European region. This is a long-term development project with significant investments and a wide geographical scope, which will bring benefits in the future. For an extended period, the interaction of the Baltic states was only in the east-west direction, the technical standards of the railway networks were integrated with Russia, and freight transportation took place only in this direction. Implementing the Rail Baltica project will allow cargo to be transported in different directions, and the interaction of port terminals, logistics centers, and railways will ensure the mobility of freight movement. The development design in this region is not only a vision of future benefits but also a problem with the national ambitions of countries and restrictions in national legislation that enshrine the monopoly right of a national carrier to transport transit cargo. High fees for the use of infrastructure and minimal involvement of private transporters in providing services limit competition, which does not encourage customers to provide services at a lower price.

The design options and benefits analysis for the development of rail freight transport includes a huge amount of data, most of which are not publicly available and are not published. Private agencies often carry out forecasting and submit reports to project promoters. The method of calculating the social benefits presented in work using conversion factors was applied with the help of knowledge gained during the years of study. Applying this method according to the main items of expenditure, it can be said that a positive social effect will be achieved (the value of the conversion factor 1,23>1). A detailed forecast of the movement of cargo and a financial socio-economic analysis was carried out and presented in 2017. private agency EY in cooperation with national stakeholders (see Rail Baltica, 2020).

The European Commission has set a target of relocating 30% of road freight to rail or rail transport by 2030 and more than 50% by 2050 to provide high-quality rail freight services, increase connectivity, the development, upgrade, and modernization of the rail network walking is a necessity.

3.2.2. The introduction of digital technologies in the design of the development of rail freight transport

Freight transportation by rail is a complex system. State-owned and private carriers transport cargo via common networks, but digital data exchange is stalled.

Railway technologies in Europe are different: there are other signaling systems, the width of the tracks, and the railway networks have been expanded for a long time without considering the single European market. Promoting the interoperability of these different systems, harmonizing technical standards, and integrating advanced technologies into the development of railways is entrusted to the European Railway Research Agency Shift2Rail.

The bulk of rail freight transport is made up of international transport (Figures 3.10, 3.11), so the visibility of the movement of goods from start to finish is significant. In the process of conducting operations, when preparing cargo documents, a large part of the data is already created by such devices as cameras and data scanners when; when moving the vehicle and cargo through reading points, the necessary data is scanned, and information from electronic documents circulates between countries. The more the Internet of the railway network expands, the faster data will be processed, delivery times will be shorter, and services will become more accessible – this is called the positive effect of the network. Rail transport services are moving from physical data to digital applications. The purpose of these measures is to optimize transportation functions, reduce costs and offer customers reliable services.

Directions of the digitalization and innovation plan for the development of freight transport by rail:

✓ emission reductions-electrification and renewable energy;

✓ incandescent rail transport management – optimization of delivery time, increasing the speed of trains, implementation of programs for finding optimal routes;

✓ automation and robotization of equipment – automation of loading/unloading and checking of cargo, robotization of rail track machines;

✓ digitization of traffic management – the latest ERTMS technology;

✓ innovative rail transport – hybridization of locomotives, the use of electric traction to reduce the cost of rail transport and increase operational efficiency, the improvement of the technical parameters of the new generation of freight wagons;

✓ data transfer integration-electronic documents, data exchange.

Figure 3.27 Objectives of the digitalization of railways
Source: A Roadmap for Digital Railways (2019)

The largest innovative technical solution to improve rail traffic and signal transmission is the European Rail Traffic Management System (ERTMS), the versatility and reliability of which are recognized by the global standard. The European Rail Traffic Management System (ERTMS) is "a common European signaling and speed control system that ensures the interoperability of national rail systems, reduces the cost of purchasing and maintaining signaling systems, as well as increasing train speed and infrastructure capacity. the level of safety in rail transport" (European Union Agency for Railways, 2019). ERTMS consists of the European Train Management System-ETCS (on-board cab signaling system), the rail mobile communication system GSM-R and the operating rules.

Digitalization increases the portfolio of rail delivery services. The use of navigation programs can track the movement of cargo and vehicles in real-time and provide information to the customer.

Program algorithms are being implemented that allow you to predict costs, transit time, proximity, etc. Multilingual mobile applications will enable you to expand cooperation between countries by providing translations in the client's language. Satellite technology systems on the future railways will make it possible to determine the cargo's location accurately; security will be ensured.

The strategy for the decarbonization of Europe imposes new demands on developing new technologies that reduce pollution.

Table 3.15

Benefits and implementation of ERTMS technologies

Benefits of ERTMS technologies	
Increased security	Constant monitoring of train speeds
Increased productivity	Railway line safety systems are in place, a long road is introduced faster and punctually
Reducing operating costs	The purchase and constant maintenance of alarm devices are replaced by a system of sensors
Digitalization and benefits	Digitized control and control
Increased competitiveness in the market	Nweaving a verified and harmonized system reduces costs
Development of cross-border rail freight services	Establishment of a common international traffic management and signaling system for the railway network, the disappearance of traffic restrictions between states
European Rail Traffic Management System – ERTMS	
Stages of ERTMS deployment	2005-2009- 2012- 2016- 2017- 2023- 2030
Investments (EUR billions)	20 billion Euro
Project objectives	Digitise European rail transport, automate train management, increase the use of railways over long distances in freight transport, create a reference system for railway safety, and install advanced software in the rail traffic management, supervision, and control system.

Source: compiled by the author, based on European Union Agency for Railways (2019)

In summary, it can be said that the development of the transportation of currents by rail is aimed at digital technologies that can provide a door-to-door service. Digitalized rail is several technologies: smart data analysis, train internet, next-generation communication networks, data and traffic management programs, and sensor installation. Technological development is needed to change the transport of goods by rail, allowing it to occupy the largest possible market share and make the services flexible, convenient, and reliable.

Table 3.16

The benefits of digital technologies for the transport of goods by rail

The benefits of digitalization in rail transport	
IoT sensors	Determines the location of the cargo in real-time, detects violations of the rolling stock, and performs the timing of traffic management.
Digital monitoring systems	Ensures traffic safety at level crossings, cargo safety
Mobile apps	Accelerates the transfer of information, cross-border cooperation
Pollution detection sensors	Helps to detect violations of the conditions of transport of dangerous goods (flow of cargo, crumbling)
Navigation systems	Facilitates the movement of railway transport on the section, the place of determination of vehicle.
Digital applications	Data transfer capabilities throughout the region, movement of e-documents, quick settlements, optimization of activities, data accumulation, transmission, analysis, and development design are required.
ERTMS system	Optimizing traffic schedules, setting up free lines, centralized management, lower delays, higher throughput
Robotization	Road maintenance, construction, control facilities, reduced use of physical labor

Source: compiled by the author

3.2.3. Methods for identifying and evaluating development and change

The assessment of the operational efficiency of rail freight transport is based on statistical data. The methodology for statistical surveys on rail transport contains the legislation governing statistical surveys on rail transport, describes the methods of collecting and processing statistical data and methods of conducting surveys and provides links to where statistical information is published to users (Lithuanian official statistics portal, 2023).

Parameters required for evaluation:

1. Carriage of goods by rail (amount in tonnes);
2. Turnover of freight transport by rail (amount in tonne-kilometers);
3. Direction of carriage of goods (local, transit, total carriage-sum in tonne-kilometers);
4. The amount of planned income (in euros);
5. Amount of financial costs (in euros);
6. Mileage traveled by rolling stock (sum of kilometers), energy consumption;
7. Transported by rail of intermodal transport units (amount).

Statistical data are needed for the preparation of financial statements. According to Juonytė et al. (2019), "financial analysis is a process during which, using certain mathematical and statistical methods, the data of the company's activities are sought to be turned into useful information" (Juonytė *et al.,* 2019).

Typically, the rail freight market is analyzed using freight volume (t/km) and financial data (turnover). Laroche *et al.* (2015) propose a new type of database, a new approach to competition analysis, to study the rail freight market. Using the indicator-constancy of profit (POP) developed by the industrial economy, the authors analyze the profit indicators (in 2006 and 2014) and note that the low profits of the established largest European market operators – DB Schenker (DE), Rail Cargo (AU), PKP Cargo (PL) can be interpreted as a strategy for maintaining a dominant position, and high profits among newcomers (for example, Hector Rail, Continental Rail) can be niche strategies, which focuses on relatively small market share, a sign. In the long term, profit results and profit rates converged. The authors also explain the possible reasons: from a market point of view, most of the operators established in the market manage their rolling stock and provide maintenance, and state-owned enterprises receive subsidies or share overhead costs. And newcomers rent rolling stock and relocate maintenance to reduce constant costs and increase flexibility (Laroche *et al.,* 2015).

The strategy of liberalization and competition of the railways is reflected in the cost and mode of transport – the minimum charges on railway infrastructure increase the multimodal use and the share of rail freight in the transport market (Dolinayova *et al.,* 2016). By the method of comparative analysis, the authors found that the minimum fee for the infrastructure access package depends on the amount of cargo being transported, the amount of the toll for traffic management and organization, and ensuring safety. To increase the share of freight transport by rail, it is necessary to provide services of the required quality at a reasonable price. Cargo delivery time is as important a factor as transportation costs.

To solve the dynamic tasks of the transport sector, Labanauskas (2010) identifies economic-mathematical methods. Each development project requires investment, and the company calculates its payback time. With the help of the payback period method, Labanauskas (2010) proposes to determine the payback time of investments in the project based on annual income in year *n*, initial investments, and the cost of capital (Labanauskas, 2010).

The freight carrier needs to have a flexible transport system to be able to deliver the goods at the right time and in the right place. Both quantitative and qualitative indicators measure rail freight transport activities. "The main characteristics of the quality of service are frequency, convenience, accessibility, reliability, and integration of different modes of transport" (European Commission, 2013).

To optimize the time of cargo delivery and reduce transportation costs, Šakalys *et al.* (2019) propose to apply linear mathematical modeling programs for the modeling of multimodal traffic flow synchronization to develop new models based on which decision-making options would be obtained based on the entered data, both in terms of the price of cargo transportation and in terms of time (Šakalys *et al.,* 2019).

Research methods are used to assess the design and operational efficiency of the development of freight transport by rail transport: the systematization of literature analysis and data using horizontal and vertical analysis methods and comparative analysis. According to Juonytė *et al.* (2019), horizontal analysis "is used to determine the change of indicator values over time. The calculated indicators are expressed in absolute, relative terms or percentages. The analysis is carried out using data from 3-5 years. The purpose of the method of vertical analysis is to determine the percentage of a specific indicator" (Juonytė *et al.,* 2019). The development of rail freight transport is undoubtedly aimed at economic and social changes, often leading to organizational changes. Their effectiveness can be determined by forming a multi-criteria assessment involving all essential values; the assessment should be based on a comparison of internal and external factors of the change and an evaluation (Banevich, 2016).

Demir *et al.* (2015) find that estimating all the external factors affecting the cost of transportation costs is difficult and requires many data, that no study is sufficiently detailed, so some studies are looking for a common set of cost factors that can be used for the same type of external factors (Demir *et al,* 2015).

In China (Zhang *et al.,* 2019), an integrated programming model has been developed to maximize the benefits of rail transport. The optimal model for rail freight services includes pricing, planning, and reducing pollution.

The carriage of cargo is its delivery to its destination. The main transportation conditions – safety, time, and service quality-determine customer satisfaction with the service received. To meet the needs of customers, the external environment and available resources are evaluated, and a development strategy and tools for providing services are provided, among which is the development design.

After reviewing the scientific literature of various authors, it can be said that cargo transportation is essential for the economic life of countries. Rail freight transport requires development, which must be directed primarily at integrating railway infrastructure. The need to reduce transport weans, save energy resources, protect the environment and the population's health, promote the modernization and renewal of the railway network, and introduce centralized traffic management and signaling systems. In the scientific literature, it is noted that to occupy a dominant position in the market in the transportation of goods, development in a competitive environment must be associated with introducing innovation and digitalization. Emphasis is placed on political barriers, such as the monopoly dominance of carriers and the lack of market liberalization, and some national legislation does not promote competitiveness. Each development requires investments and their payback. Therefore, the authors propose to choose a variety of parameters and indicators, ways and methods, to assess the usefulness of development in financial terms and economic and social impact. Rail freight is becoming global, and it is, therefore, necessary to strengthen interconnections to create a common rail network and provide directions and measures for development.

3.2.4. Design methodology for the development of rail freight transport

The railway transport company's main income is earned when transporting goods in different directions. The rail freight transport development issues are relevant for all states developing this sector. The railway network of the USA, with enormous resources, China's Silk Road, and Japan's railway, with the most modern traffic management and high-speed trains, are the results of the implementation of large projects.

The theoretical part of the work analyzes the insights published in the scientific results and articles of various authors: why it is needed, what is hindering, what should be changed and applied in the design of the development of freight transport by rail, and various methods of evaluation are proposed.

In the practical part of the work, based on the scientific literature and the developed methodologies for calculating railway indicators and their application, the development of transport of freight transport on roads is analyzed. Strategy papers – "Roadmap for the creation of a single European transport area", European Union legislation, directives of the European Parliament and of the Council, National transport development in 2014-2022. The program, the documents of the Executive Agency for Innovation and Networks (INEA) set up by the European Commission, the agency coordinating the European Rail Traffic Management System (ERTMS), etc., were the basis for identifying the necessity, objectives, and benchmarks for enlargement. For the analysis and comparison of statistical data, data from Eurostat, the official statistics department, and European statistical sets were used. The analysis used reports on the feasibility, investment, cost, and benefit calculation methodology and analysis of ongoing projects. Forecasting changes were based on comparisons and forecasts. The data showed on the trends and dynamics of freight transport by rail cover the period 1995-2018, the state of the railway infrastructure network, the number of inhabitants – data for the current year, the amount of investment and cost funds - according to the allocated funding. It studied how profitability indicators are calculated. Attention was paid to the value of operating profit margins when an increase in revenues from freight transport was predicted.

$$\text{Operating Profit Margin} = \frac{\text{Operating Income}}{\text{Revenue}} \times 100 \tag{3.1}$$

To determine the socio-economic utility, conversion factor, and impact estimates were used, which were set by the project management agency for 2019.

Using this methodology, the design of the development of rail freight transport was considered.

3.3. The benefits of designing the development of freight transport by rail

The effective development of the transport of roving by rail impacts the economic growth and social security of the countries and the entire European region and helps to survive and strengthen in a competitive market. The benefits can be assessed from the following aspects:

- Increasing freight volumes through taxes and increased consumption contribute to the region’s GDP.
- During the implementation of the projects, hundreds of new jobs are created in the areas of railway, production, construction, supply, service, etc., and they are maintained after the end of the project for the maintenance, management, and administration of the railway network.
- The market availability of countries, especially those located away from central Europe, and the competitiveness of freight transport is increasing.

- The development and expansion of the rail transport network and the introduction of the latest ERTMS system guarantee railway lines' safety, reliability, and performance.
- There will be a new economic corridor in the Baltic region, which will benefit the region's countries. They will no longer be dependent solely on east-west carriages, and economic and political security will be strengthened.
- Compliance with the deadlines for the implementation of projects leads to increased confidence and the growth of the foreign investment.
- New opportunities for developing intermodal and multimodal cargo logistics, terminals, and ports appear.
- Rail transport is becoming more environmentally friendly by transporting goods on modernized and new lines and has the potential to move from fossil fuels to renewable energy sources.
- New opportunities are emerging, and digital innovations are being introduced at all project stages.

The development of rail freight is a long-term project that brings benefits in ten years or more. The European Union budget for the financing of TEN-T projects for the period 2014-2020 amounted to 26.4 billion Euros (Figure 3.28). For the implementation of projects, national, private, European Regional Development Fund (ERDF), and Cohesion Fund funds are attracted. The merging of outputs shows that the EU is working towards achieving transport policy objectives.

Summing up, we can say that the design of the development of cargo transportation is important in regional and global constellations. The scale of implementation of development projects requires significant investments, but their benefits are obvious. The European region is becoming increasingly competitive with its services. The development and modernization of railway networks and the introduction of digital technologies make it possible to increase the volume of cargo transportation to transport goods in all directions, thereby contributing to the increase in the economic strength and influence of the region in the global market.

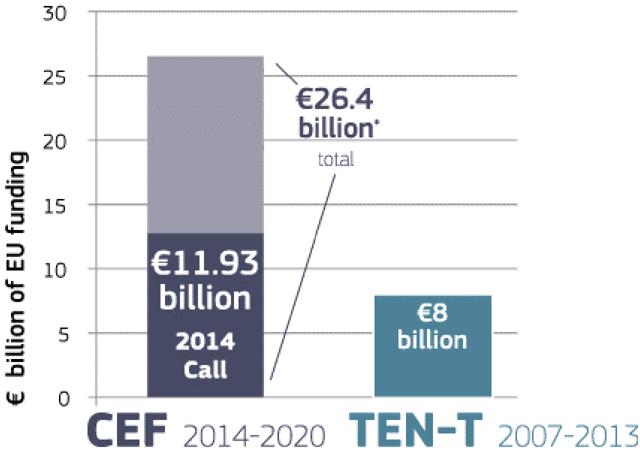

Figure 3.28 Comparison of TEN-T funding from the CEF Fund
Source: Global Mass Transit (2022)

LAST MILE FREIGHT DELIVERY SERVICES BY RAIL

Then the customers of the cargo transportation service may require the carrier to collect a certain amount of parcels in a shorter time during peak working hours (Li *et al.*, 2021). Meanwhile, the arrivals of the mover simply reduce the number of possible parcels as faras to, which can be delivered during later business hours (Xu *et al.*, 2022).

The operator uses the same type of trainto as the passenger servicei, so it is assumed that the operating and maintenance costs of each train are the same as the passenger's (Xie *et al.*, 2020). Carriers' depots are considered to be located at the railway station and the travel time is not required before the parcels are loaded (Larrodé *et al.*, 2020). The time required to upload parcels to the train does not depend on the time of departure is always guessed if the train arrives on time (Liang *et al.*, 2019; Watson *et al.*, 2019).

Then the loading capacity per runway is equal to the capacity of the train, resulting in loading into the subsequent train may not be released until the existing train rans (Shainesh *et al.*, 2000).

In order to achieve environmentally friendly transport, rail and road transport modes could be used for last-mile delivery if the train path is not sufficient for delivery. In some exceptional cases, also, last mile freight delivery delivery by boat could be considered in combination with rail (Ge *et al.*, 2020). To achieve a high timeliness of the entire transportation process, pickup and delivery services are being improved at the same time to measure the level of their service (El Yaagoubi *et al.*, 2022). The modelling of intermodal road and rail transport routes shall take into account fixed rail timetables and flexibility in road traffic time (Boehm *et al.*, 2021).

Conclusions

The chapter reveals the main directions of development of rail freight transport: 1) creating and developing a common railway infrastructure for the European region, paying particular attention to regional integration and reducing exclusion, ensuring the effectiveness of international connections, removing administrative and technical barriers; 2) to ensure that, in the market for rail services, public and private carriers carry goods on an equal footing in all countries and to enable regional accessibility through the development of international rail networks; 3) the creation of a unified traffic management and signaling system ERTMS for faster and safer delivery of goods; 4) the development of railway networks must be based on the digitization of iron-line transport, the use of the latest technologies.

The work identifies the factors contributing to the development: the strengthening of the influence of rail freight transport and the size of the market occupied, the growing international transport, the possibility of transporting over long distances using renewable energy and less polluting the environment, and increasing competition both between carriers and between individual regions of the world. The primary disturbances are the underdeveloped railway network, different technical parameters and standards, the monopolistic interests of the parties, and the absence or unevenness of competitive conditions due to the incomplete liberalization process.

Based on rail Baltica, the largest project in the Baltic region, a brief socio-economic-benefit analysis was carried out, and the social benefits of the impact of rail transport were assessed. With the help of the conversion factor, it was established that the international implementation of the project has a positive social impact on Lithuania and is beneficial.

The benefits of designing and implementing the development of freight transport by rail have been presented. The implementation of development in one of the most critical sectors of the economic branch of the economy is important for the economic-social development of the European region. The integration of states on equal terms using the railway networks strengthens cross-border links and reduces the gap between regions, ensures greater economic and political security, creates the possibility of increasing the volume of freight transport and bringing the largest possible contribution to the GDP of both states and the region, and trade relations are being strengthened.

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THE IMPACT OF THE EUROPEAN UNION MOBILITY PACKAGE ON THE PERFORMANCE OF ROAD FREIGHT TRANSPORT COMPANIES: A CASE STUDY OF LITHUANIA

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Abstract
Mobility package – general rules for carriers working in European Union (EU) countries adopted in 2020. The implementation of this package had to maintain a balance between driver safety and a sustainable economy, while taking care of the market and economic needs of EU countries. However, the entry into force of this package caused many problems for the carriers of small countries such as Lithuania. The carriers of this country have almost no conditions for implementing Mobility Package solutions, and companies are starting to look for opportunities to transfer their activities to foreign markets, thus getting closer to the main markets where they carry out transportation.

Keywords: *European Union, Mobility package, road, freight, transport companies.*

Introduction

Having adopted the "Europe on the Move" Communication in 2017, the European Commission presented the Mobility Package proposals to the European Parliament and the Council aimed at achieving the following objectives: improving road safety, creating a level playing field for all transport operators, reducing the environmental impact of transport pollution, and improving the working conditions of drivers (Vaškys and Vitkūnas, 2021). However, the Mobility Package proposals have created many challenges for countries (including Lithuania and others) operating in Europe. The transport logistics business is one of the main sectors of economic activity in Lithuania. Data of the official statistics portal reveal that this sector accounts for around 13% of Lithuania's GDP. Lithuania is conveniently located geographically, with two quite important international corridors crossing it, which allows it to successfully develop road transport logistics and expand it in the European market. However, there are increasing obstacles that encourage companies to look for opportunities to expand their activities in foreign markets, and the Mobility Package is one of these reasons. Lithuanian carriers have almost no conditions for the implementation of the Mobility Package, and its enforcement will have a significant impact on the competitiveness of Lithuanian companies in Europe. The second reason is an increase in the daily subsistence allowance and the minimum salary. According to estimates, having increased the daily subsistence allowance coefficient led to an increase in the minimum salary of carriers of as much as 40%, which undoubtedly means increased costs for transport companies in Lithuania. Recruiting drivers from third countries is another challenge which Lithuanian carriers face. The main workforce of transport companies operating in Lithuania is third-country nationals, and without additional quotas for the recruitment of non-EU nationals, companies face staff shortages. In order to manage operational risks, Lithuanian carriers look for opportunities to operate and expand in other countries, such as Poland, Germany, Latvia or the Netherlands. However, so far, Poland has been the main destination for relocation of road transport companies due to its geographical location and proximity to Western Europe, favourable tax environment and formalities for the recruitment of third-country nationals as drivers, thus new opportunities for expansion open up for companies that decide to relocate to the neighbouring country.

The impact of the European Union Mobility Package on road freight transport companies

Transport is the key economic factor enabling businesses to trade and increase their competitiveness and prosperity by providing goods and services that are the backbone of economic life (European Investment Bank Group, 2021).

The transport sector currently employs around 10 million people and accounts for around 5% of gross domestic product (GDP) (EU Science Hub, 2021). Logistics processes, such as transport and warehousing, account for 10-15% of the cost of a manufactured product for European companies. The sector consists of five main branches: road, maritime and inland waterways, rail, air and pipelines. However, road freight transport can be said to be the most important sector in the European market economy employing the largest number of people. There are more than 570,000 road transport companies operating in the road transport sector and 3.3 million people employed in this sector (Summary et al., 2020). According to estimates, the majority of freight carried by road transport in Europe was national (65%), with the remaining percentage share coming from international transport in 2020. The five main and most influential European economies in the transport sector are Germany, France, Italy, Spain and the UK (Intelligence, 2018). These leaders collectively account for around 60% of all European road freight transport sales.

According to (Cedergren, Hassel, & Tehler, 2022), risk management includes a plan of measures and actions aimed at minimizing adverse consequences. (Jia & Li, 2022) state that effective risk management is the identification of risks before they even occur.

In 2017, the European Commission proposed a Mobility Package for regulating activities of road transport companies, covering social, economic and environmental changes in the sector. As the Mobility Package is a relatively new document and its content is still subject to debate and change, scientific sources are scarce, thus this study relies more on reports from the mass media and various transport associations. There has been a total of three releases of Mobility Packages: the first two were published in spring and autumn of 2017 and the third one was released in May 2018. However, following the publication of the provisions of the Mobility Package, two opposite positions have formed among the countries involved in road transport activities in the EU market. The major EU countries, such as France, Belgium, the Netherlands and Germany, have welcomed the announced Mobility Package and encouraged other countries to join in the support. Western European countries are seen to benefit from these developments because the entry into force of the Mobility Package regulations puts their competitors in Eastern Europe at great risk of bankruptcy and increasing operating costs, thus they can be expected to be driven out of the market. Eastern European countries have expressed their dissatisfaction with the new EU policy. According to data of "Verslo Žinios" and LINAVA, Lithuanian carriers have appealed to the European Parliament's Transport Committee asking to reconsider the provisions of the Mobility Package as to whether they offer a level playing field for all EU countries in the road transport sector. The release of the provisions of the Mobility Package is believed to undoubtedly complicate the market situation for transport companies. First of all, the *Regulation (EU) 2020/1055* provides for the obligation to return trucks to the company's headquarters every 8 weeks, which means that the compliance with this Regulation will undoubtedly increase costs of transport companies. Moreover, the European Commission's reports present specific figures relating to the obligatory return of a truck on 0.8% to 4.6% higher CO_2 emissions. Thus the enforcement of the truck return regulation would increase CO_2 emissions several times. Therefore the Regulation (EU) 2020/1055, which aims to establish proper functioning of the internal market in the transport sector, can be said to run counter to the principles of green logistics, also promoting economic decline of companies due to the cost of fuel. Validation of the *Directive (EU) 2020/1057* aims to establish the rules on posting and remuneration of drivers to be followed by all EU Member States. Typically, drivers' pay consists of the basic salary, overtime pay, and daily travel expenses such as meals and accommodation (CNR European Studies, 2016). However, the rules on the posting of drivers are unfavourable for carriers in peripheral countries. In particular, these rules regulate that drivers engaged in international transport shall earn minimum wages set by the country on whose territory a freight is transported. This problem is important and relevant from the economic point of view of road transport companies, as Lithuanian drivers usually transport goods to Germany, France and other Western European countries where the minimum salary is rather high.

Challenges of the road transport sector in Lithuania

The transport sector undoubtedly plays a key role in the national and international economy. Transport is a part of the economic and social area of the Republic of Lithuania, the main purpose of which is to meet the needs of the society and the economy by transporting freight or passengers (Ministry of Economy and Innovation, 2020). According to the official data of the Department of Statistics, road transport is the most popular and predominant mode of transport in Lithuania. This business is widespread and successful in Lithuania for several reasons: the country's convenient geographical location and the ongoing globalisation, where a distance is no longer important and the movement of goods becomes a priority (Bagdžiūnas, 2014). Still, the Lithuanian road transport sector has been facing competitiveness and productivity challenges for the last few years. The satisfactory level of competitiveness of Lithuanian carriers recorded so far now struggles to remain competitive with Western European carriers (Baltic Institute for Research and Development, 2019). The government's decision to increase the minimum monthly wage (MMW) and the coefficient for drivers is one of the biggest challenges to the competitiveness of the road transport sector today. Representatives of LINAVA say that having increased the MMW to €607 and applied the coefficient of 1.65, the labour costs of a road transport company per truck would increase by €427.51 compared to the current situation. The Lithuanian transport sector faces the problem of employing third-country nationals. There are quotas and limits on the number of non-EU nationals employed. Thus, a labour shortage is another reason hindering competitiveness of companies. The forthcoming EU Mobility Package adds to the above challenges, reducing the financial efficiency and competitiveness of road transport companies. Road transport companies in Lithuania face a major threat as the changes introduced by the EC and the Mobility Package will have a significant impact on their economic performance. The obligatory return of vehicles to the country of operation, changes to drivers' weekly rest periods and the rules of posting and remuneration of truck drivers will certainly impede the competitive advantage of peripheral countries (Breemersch, 2019). Thus, prompted by the Mobility Package adopted by the EC and the decisions taken by the government of the

Republic of Lithuania on an increase in daily subsistence allowances, road transport companies are obliged to reconsider their further operational strategies (Bank of Lithuania, 2020). Recently, offshoring has been identified as one of the most popular alternatives for companies willing to remain competitive.

Opportunities for expanding activities of road transport companies in foreign markets

The additional costs and changed business circumstances encumber the situation of transport companies in Lithuania, so that carriers are forced to look for ways to "survive" at the lowest possible cost and to continue to operate profitably. Targeted risk management in the light of market conditions is one of the options. The main activity of Lithuanian carriers is international transport in export markets, so in a worsening environment, price increases to cover costs are not possible, as they are mainly competing with Polish and Romanian carriers, whose transport services are the cheapest in Europe. The only solution is therefore to relocate the company's activities abroad. There is a tendency for Lithuanian transport companies to relocate rapidly to foreign countries, including Germany, the Netherlands, Belgium and Poland. If companies have to send their vehicles to the country of operation, most of these trucks will travel empty, which will lead to a significant increase in the company's costs. Relocating to Poland is likely to solve this problem easily – the country's convenient location in Europe close to Europe's main logistics hubs will undoubtedly reduce the cost of having to return to the company's headquarters. In addition to its convenient geographical location, Poland has a favourable tax environment for businesses. First of all, it has a lower minimum wage, and the options for acquiring and maintaining new trucks are much more favourable from the financial perspective. One of the more important factors is the absence of quotas for the employment of third-country nationals. According to economists, there is no restriction on the employment of foreigners in Poland, so the process itself is fast and smooth. The Table 3.17 below compares Poland and Lithuania in terms of certain taxes that affect business development.

Table 3.17

Comparison of the Polish and Lithuanian tax systems

	Poland	**Lithuania**
Vehicle tax (24t.)	€141 per truck, €213 per trailer	€150 per truck, €243 per trailer
Association's freight transport licence	€50	€43
Professional liability insurance	€104	€403
Basic salary of drivers	€600	€1205
Employer's monthly salary costs	€724	€1226
Tax on the employment of a third-country national	No data	€200-500

Source: (Trans.Info, 2020)

The analysis of the Table 3.17 above shows that one of the main factors that prove a more favourable tax environment in Poland is the basic salary of drivers, which is twice higher in Lithuania. Moreover, the Polish transport market is appealing to Lithuanian carriers due to the absence of a daily allowance coefficient, which is used to calculate monthly salary of drivers, while in Lithuania this coefficient is 1.65%. Companies buying and registering trucks in Poland have a significant opportunity to save, as compulsory insurance for trucks in Poland costs almost €1,000 less than in Lithuania, so a company having 60 trucks would save around €60,000 per year. This difference in insurance prices is due to the fact that there are many companies offering insurance services in Poland, so prices are highly competitive. It is important to mention that the financial stability of Lithuanian transport companies is affected by restrictions and quotas on the employment of third-country nationals, which is why it becomes difficult and financially expensive to recruit non-Lithuanian nationals, and the recruitment process can take more than a month, so companies start to face a severe labour shortage, posing a threat to their competitiveness. Although there is no precise data on the cost of employing third-country nationals in Poland, there are no employment quotas and the recruitment process itself is smooth and fast.

According to estimates, around 500 road transport companies have moved from Lithuania in the last two years. Transport companies choose to open their branches and subsidiaries in Poland without ceasing operations in Lithuania. They buy new vehicles, but register them in a branch in Poland instead of registering in Lithuania, and create new jobs there. This process is posing a significant threat to the Lithuanian economy, as taxes are paid to the Poland's rather than Lithuania's budget. In order to stop this, the Lithuanian government has introduced a corporate income tax to be paid by companies leaving the Lithuanian market and moving their operations abroad. The tax consists of the gain in the value of property, i.e. the difference between the cost of its acquisition or creation and the market price at the time of relocation (*Verslo Žinios*, 2020). However, this tax does not seem to cause problems to carriers, as the companies are leaving the Lithuanian transport market indirectly, without changing the jurisdiction of the company. They establish subsidiaries abroad, set up branches or acquire existing companies, thus avoiding corporate income tax, which will not prevent them from seeking better operating and business conditions abroad.

A cost-based assessment of the opportunities of development of activities of a road transport company in a foreign market. The aim of development of activities of a company abroad is to reduce the costs incurred due to the entry into force of the Mobility Package, high transport insurance prices in Lithuania and the tax burden. In order to assess the economic benefits of these opportunities, the costs incurred in Lithuania before the development of the company's activities must be compared, also calculating costs in the new market:

1. **General liability (GL) insurance costs.** GL insurance costs per truck are €2,800 per year in Lithuania and €977.78 in Poland. Assuming that 70 of the company's trucks are re-registered in the course of the expansion of the road transport business, the cost of GL insurance for the company after the expansion would be €68,444.44, while the cost of GL insurance if continuing the transport business in Lithuania would total €196,000 per year. It can therefore be concluded that the successful completion of the expansion project of a transport company to Poland would result in annual savings on general liability insurance of €127,555.56.
2. **Implementation of the Mobility Package.** The entry into force

of the Mobility Package enshrines an obligation to return trucks to the company's headquarters every 8 weeks, thus costs of return of a truck when operating in Lithuania and the cost of relocating the company's headquarters to Poznan, Poland, should be compared. It is assumed that to return a truck to the transport headquarters, it is necessary to send it "empty" kilometres from Berlin in Germany, because extensive competition between carriers and transport companies in Poland makes it almost impossible to find a well-paid freight from Germany to Poland or Lithuania. For this reason, it is estimated that a truck will return to the headquarters from Berlin empty and go back to Berlin empty due to a huge demand for freight in the implementation of the Mobility Package. The distance between Berlin and Poznan is 273 km and between Berlin and Vilnius – 1,112 km. The cost per kilometre today, due to an increase in fuel and other maintenance costs, is approximately €1,10. Therefore, the route Berlin-Poznan-Berlin (545 km*€1.10) = €599.5 and Berlin-Vilnius-Berlin (2224 km*€1.10 EUR) = €2,446.4. The results show that a single truck could save €1,846.9 over the course of 8 weeks. Thus, returning one truck to Poland will save the company €1,846.9*6 = €11,081.4 over a year. Therefore, the return of 70 trucks to headquarters in Poland will save a company €775,698 per year.

3. **Assessment of changes in CO_2.** In addition to the economic benefits, there is also an environmental aspect in terms of emissions. From the point of view of the Mobility Package, the obligatory return of trucks to the company's headquarters every 8 weeks will not only increase the company's fuel costs, but will also result in higher CO_2 emissions into the atmosphere, as trucks will have to travel additional distances. From an environmental perspective, it can be said that the project for the expansion of the company's operations to Poland will contribute to the reduction of CO_2 particles in the atmosphere. It is estimated that a vehicle manufactured in 2017 and afterwards emits 118.5 g of CO_2 per kilometre. Thus, for the routes under consideration, the return to Poland of a single truck will emit 4 times less pollutants than its return to Lithuania.

In conclusion, the company's development opportunities in Poland not only significantly reduce transport insurance and fuel costs, but also contribute to environmental sustainability and emission reduction policies. Shorter driving distances lead to lower exhaust emissions, resulting in cleaner air and a lower risk of pollution and disease.

Conclusions

1. The analysis of scientific sources and legislation revealed that the transport sector plays an important role in modern society and has a significant impact on growth and employment in the European market. Transport creates favourable conditions for companies to trade and increases their competitiveness in the provision of goods and services, also ensuring uninterrupted mobility. An analysis of statistics shows that road freight transport in Europe is the main mode of logistics, ensuring the prosperity of the European economy while maintaining job creation.
2. The road transport sector in Lithuania has been facing competitiveness and productivity challenges over the last few years, which require targeted management of operational risks. These are the implementation of the Mobility Package, rising fuel and insurance prices, employment quotas for third-country nationals, and changes in wages. The need for the Mobility Package has arisen due to unequal working conditions and wages of truck drivers from different countries working in the same market. The three Regulations and one Directive published will undoubtedly worsen the position of peripheral countries in the European Union's transport sector market. The satisfactory level of competitiveness of Lithuanian carriers seen so far is suffering considerable losses in order to remain in a competitive environment with Western European carriers. Increasing fuel prices are one of the reasons behind that. This is happening not only in Lithuania, but also throughout Europe, and companies willing to survive in the market are forced to increase their prices due to increased costs. An analysis of the requirements of the EU Mobility Package shows that it is becoming increasingly difficult for companies to remain

competitive due to labour shortages, as the process of employing third-country nationals in Lithuania is becoming more complex and restricted. The government's decision to increase the minimum monthly wage and the coefficient for drivers is among the biggest challenges to the competitiveness of the road transport sector today. For the above reasons, companies are forced to look for alternatives to carry out their activities, one of which is the expansion of the company's operations to a foreign country which has a more favourable geographical and tax situation.

3. The successful completion of an expansion project and the relocation of the road transport company's operations to Poland will result in a significant reduction in annual costs, with a company saving as much as €127,555.56 per year on its general liability insurance. This will allow the company to save money when registering new trucks and trailers in Poland, as high competition on the insurance market in this country allows offering these services at much better prices here. Secondly, the issue of employing third-country nationals will be resolved and the employment process will be simplified, as there is no quota restriction in Poland. Thirdly, the Mobility Package will make the cost of obligatory return of drivers and trucks to the company's headquarters cheaper than returning to Lithuania. In addition to the above, savings will also be achieved on daily subsistence allowances, as the daily subsistence allowance rate in Poland is lower than that in Lithuania.

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TEORETICAL FOUNDATIONS OF THE STUDY OF URBAN MARKETING AND CORPORATE BRANDING FOR BUILDING A CITY IMAGE

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Abstract
More and more European cities use marketing methods and techniques in their governance practices. With the beginning of the new millennium, urban marketing evolves into urban branding, while the existing concept of product branding has undergone transformation and begins its rapid development towards building city brands with the emphasis on creating their compelling images due to the fact that an object of urban branding is not the city itself but its image. This image is formed by city residents, tourists and visitors, representatives of its business community, influencers, celebrities, whose interactions occur either due to their residence in or visits to a city (direct experience) or indirectly, through its presentation in mass media (indirect experience).

Keywords: *place (city) marketing, city brand, marketing complex, image, city image model.*

The history of urban marketing is known since the 19th century, however, only in the last three decades cities began to actively use marketing methods. This was facilitated by competition for inward investment, increased revenues from tourism and residents at different spatial scales (Kotler *et al.*, 1999; Ward, 1998). The scientific literature provides examples of promotional activities that took place in cities or regions at different times (Ashworth & Voogd, 1994).

Place marketing is becoming one of the key features of entrepreneurial models of urban management that have emerged since the 1970s (Hubbard & Hall, 1998). The most common concepts are place marketing and city marketing (Braun, 2008). Philip Kotler defines place marketing as “the design of a place to meet the needs of its target markets. It succeeds when citizens and businesses are satisfied with their community and the expectations of visitors and investors are met” (Kotler & Gertner, 2002). According to the above definition, the basis of place marketing is to meet the needs and requirements of place customers.

Many stakeholders are involved in place marketing, which is why places must find ways to differentiate and position themselves in their target markets. When analyzing target customers, segmentation is the main task of place marketing to identify potential customers. The main target customers of place marketing are visitors, residents and employees, business and industry, and export markets (Kotler *et al.*, 1999).

In the monograph we consider place marketing as city marketing. This trend is realized in the context of the so-called “entrepreneurial city” and differs from traditional city or regional management activities. City governments, public planning agencies apply marketing approaches not only as an additional tool to solve existing planning problems, but increasingly as a philosophy of place management. Cities began to be managed in a new way, using the practice of business entrepreneurship, and local governments increasingly use such business characteristics as risk, ingenuity, promotion and profit (Hubbard & Hall, 1998).

The use of marketing became a natural consequence of entrepreneurial activity, and its implementation was and largely remains limited to methods and techniques that were easiest to transfer from marketing - advertising activities.

The introduction of marketing philosophy and methodology, marketing methods that can be easily adapted and used in the practice of urban management, is reflected in the growing interest of scholars from various fields who believe that marketing principles, after some modification, can be applied to cities and urban environments.

New research is distancing itself from traditional marketing, approaching local and urban marketing. One of them, which has emerged in recent years and is directly related to the implementation of marketing in cities, is the concept of corporate branding and corporate-level marketing, which is a theoretical and practical development of the concept of corporate image and corporate identity (Balmer & Gray, 2003).

It can be concluded that the application of marketing theory and practice in urban management and administration needs to be clarified and further developed, especially within the changing environment in which European cities operate.

Most authors agree with the thesis that place marketing uses well-known terminology, techniques and philosophy, but still it is a special kind of marketing (Borchert, 1994). One of the priority elements of this “new” type of marketing is the definition of the main areas of activity, the description of certain categories of actual measures and actions to be taken by city governments together with urban marketers to implement integrated urban marketing (Balmer & Gray, 2003).

Therefore, we will explore the problems that will allow us to move from the marketing complex of the city to the city brand, which, in the author’s opinion, are two separate approaches to city marketing.

In the scientific literature, in particular, on urban marketing, the marketing complex is understood as a combination of marketing activities necessary to achieve the desired strategy (Kotler *et al.*, 1999; Ashworth & Voogd, 1994; Berg van den & Klaassen, 1990). This is an important and necessary step in all marketing activities.

At the first stage of the marketing mix formation it is necessary to determine a set of traditional marketing tools and actions that can be used to assess a certain market reaction (Waterschoot, 2002). Since the marketing complex should be included in the context of city marketing, it is necessary to take into account the problems associated with the peculiarities of cities as market assets, in particular, to include the marketing of services.

At the next stage of the marketing process of the city it is necessary to create a geographical marketing complex, which will differ from the traditional marketing and will be a combination of the following sets of measures:

- promotion;
- spatial-functional;
- organizational;
- financial (Ashworth & Voogd, 1994).

The scale and effectiveness of the city marketing will be determined by the choice and application of the appropriate combination of these measures.

Philip Kotler believes that it is necessary to distinguish four different strategies to improve the place, which are the basis for the formation of its competitiveness and competitive advantage (Kotler *et al.*, 1999). They are:

- design (place as a symbol);
- infrastructure (place as a fixed environment);
- basic services (place as a service provider);
- attractions (places as entertainment and recreation).

Hubbard and Hall in (Hubbard & Hall, 1998) believe that the entrepreneurial model of city or area management should be based on the creation of its new image due to specific factors:

- advertising and promotion;
- large-scale physical redevelopment;
- public art and sculpture;
- mega-events;
- cultural revival;
- public-private partnership.

A decisive role in the complex of city marketing is played by the formation and dissemination of the image. The importance of the image becomes the main focus in the advertising process when it is formed through promotional activities or the city's image is disseminated through art, festivals and cultural attractions. The image of the city is transmitted through the creation of urban images that reinforce or contradict the promotional activities.

The communicative effect will be achieved by combining different marketing activities, as each of them has an impact on the effectiveness of the others. The meeting with the city takes place through perception and images, that is, the object of urban marketing is not the city itself, but its image.

The image is the result of various and often contradictory messages sent by the city and formed in the minds of each individual recipient of these messages separately. It is the image of the city that is the object of urban marketing activities, and the concept of an entrepreneurial city operates primarily with images, culture and communication experience.

Since urban marketing deals with the image of the city, this thesis is dominant for many marketing proposals found in traditional marketing, however, there are still unexplored issues to which urban marketing does not yet have a single answer – the definition of the city product, the mood of the city market and understanding the nature of the local consumer.

Studying the issues of urban marketing we come to the conclusion that we are dealing with the branding of the city. Obviously, image marketing and branding or brand management are closely related - branding plays a crucial role in urban marketing.

Branding gives the product a specific and more distinct identity, which is necessary for cities (Cova, 1996). Branding becomes the tool that brings marketing theory and practice closer to the nature and characteristics of places. It provides a framework for identifying and combining a wide range of images intended for the city in one marketing message, the city brand. The development of corporate branding within the framework of modern marketing is the basis for understanding the city brand.

With the rapid development of globalization, city marketing does not correspond to the concept of a developing city; the era of cities as brands has begun. According to one of the most famous researchers of city branding, Michalis Kavaratzis, the central importance of the city image for place marketing has been the main driving force of place (city) branding (Kavaratzis, 2004; Kavaratzis & Hatch, 2013).

Since the first years of the XXI century, place marketing has fully accepted the existence of place branding. Although cities cannot be considered simply as products, scholars and practitioners of place branding argue and prove in their works that the concept of product branding can be transferred to place branding. The result was that scientists tried to brand cities as products and shaped the image of cities through their publications.

In the field of marketing, branding and brand management have been considered as one of the leading parts not only by scholars but also by practitioners. As mentioned above, product branding has become very useful for the development of the city brand, and the transition from urban marketing to city branding is facilitated not only by the widespread use and success of product branding, but also by the concept of corporate branding.

In fact, the ability to extend modern branding ideas and techniques to places has allowed to argue that place branding is a more modern concept compared to place marketing. This young scientific concept is not sufficiently developed, there is a fuzzy distinction between marketing and branding of a city. Scientists divide the definition of the relationship between city branding and city marketing into two parts. Some of them argue that branding is one of the tools of the marketing toolkit (Balmer, 2001; Kotler & Gertner, 2002), while others consider city branding as a "general strategic guideline for marketing" (Aaker, 1996).

Michalis Kavaratzis considered it quite logical to apply the theory of branding to the branding of cities, but, at the same time, he considered it necessary to reconsider the nature of the city image, which is a central element in the situation of improving all the assets of the city to improve its perception by people (residents, existing and potential residents, visitors). Image and its communication play a significant role in marketing processes, in particular, in the marketing mix of the city (Kavaratzis, 2008).

Speaking about the image of the city brand, Simon Anholt considers it as a reputation and part of the "synthesis of brand management with public diplomacy, trade, investment, tourism and export promotion". The author defines place branding as "place image management through strategic innovation and coordinated economic, commercial, social, cultural and public policies" (Anholt, 2007). That is, a clear understanding of the image of the city is the primary task for understanding the city brand.

Michalis Kavaratzis argues that a city can be seen as an "entity" to which (customers) ascribe an "identity" with a set of stable values nurtured as a result of the city's long-term development. Just as a product has a utility value, a city can generate utility functions that "customers" can directly experience through daily business transactions and related activities (Kavaratzis, 2008).

Almost all scholars share the same opinion that the customers of places are investors, visitors, artists and celebrities, local residents (Keller, 2003; Zhang & Zhao, 2009). These authors emphasize that when the "customers" of city branding are mentioned, the differences between cities and ordinary products begin to appear.

The same types of customers are mentioned in other works. For example, (Ashworth & Voogd, 1994) argues that potential customers, investors and residents are the stakeholders of cities. In (Hubbard & Hall, 1998), scientists held a similar view that the target group can be divided into tourists, residents and workers, business and industry. The author in (Braun, 2008) has additional comments on these target groups. In terms of customer needs, it is the citizens who need an appropriate environment for their purposes. Residents are looking for an attractive living environment, businesses are looking for a favourable business environment and visitors are looking for interesting places and a cultural environment. Potential conflicts and synergies between the needs and desires of different target groups are inevitable.

We can generalize that brand communication for the target groups of the city should be developed taking into account these factors, although they use places in different ways, but form a common opinion about the images of the city. In general, people understand places or create them in their minds through three processes: planned interventions (planning, urban design, landscape transformations, etc.); through the possibilities of using certain places for their needs; through artistic images and forms of representation of places (films, literature, paintings, cultural and artistic events).

Interaction with places can take place through direct residence or visiting the city, i.e. directly or indirectly through media representation. Kavaratzis in (Kavaratzis, 2008) created a model of the city image of direct and indirect experience (Figure 3.29).

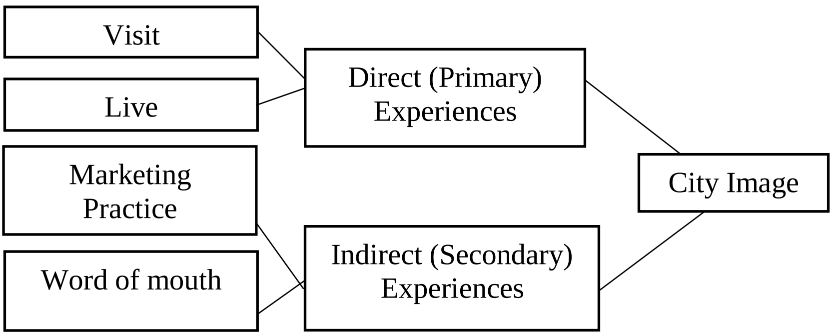

Figure 3.29 Direct and indirect experience in the city image model

Source: (Kavaratzis, 2008)

Long-term observation of visitor behavior shows how investors, artists and tourists experience the city. The result of such observations will be the conclusions how direct experience, visits, external promotion influences the branding process. At the same time, behaviors (e.g. lifestyle, local cuisine, rituals, etc.) belong to the locals. The city image model of direct experience allows us to understand how well the internal communication of the brand takes place.

In fact, indirect experience most often occurs through well-known marketing practices, such as internal and external advertising, public relations, graphic design, use of logo, identity, etc. This developed marketing practice can be distinguished from “word of mouth” (WOM marketing), which is a source for reducing the perceived risk in the presence of clarification and feedback.

It can be generalized that the image of a place/city, which is the result of various and often contradictory messages sent by the city, is formed in the minds of each recipient of these messages separately. As the messages are not stable and permanent, the brand has to be processed through cognitive processes in order to become fixed in people’s minds. At the same time, people often transform their perceptions (images, feelings, evaluations and judgments) into their own understandable identity of the city, which the creators of urban marketing cannot control. That is why the object of urban marketing is not the city itself, but its image. As we can see, knowledge about the brand is a key factor of its consumer capital, which, in turn, is conceptualized as the brand image in the memory of consumers, as it is associated with various associations.

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THE COMPETITIVENESS IN LOGISTICS USING SHARING COLLABORATION

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Abstract

In recent decades, supply chain management is a significant strategic management tools for companies that have set strategic goals to improve product or product quality, customer service and develop competitiveness. Sharing is one of the most important parts of supply chain value. Logistics is the main force of macroeconomic development. Comprehensive logistics accounts for 10% of GNP in economically developed countries and even more in developing countries.

In the development of global markets, competition takes place in the supply chain, not within companies. Sharing not only gives you a competitive advantage, but also develops partners. In present day competitive setting, companies should pay more and more attention to the management of logistics networks when developing and improving competitiveness.

Companies must focus on collaboration to exist in a competitive environment. Solving the issue of customer expectations, the issue of cooperation between companies is becoming more and more relevant. Collaboration in the supply chain is increasingly relevant as companies find that in some situations, the benefits of working together far outweigh the risks. In uncertain circumstances, companies seek to strengthen supply chain cooperation by leveraging suppliers' expertise. Therefore, in order to create effective cooperation mechanisms, it is necessary what value this cooperation creates. The paper describes how the level of implication varies between customers and suppliers in the supply chain processes of different sectors. Sharing opinions with a particular focus on business effectiveness and the company's contribution to supply chain solutions. Customers are actively involved in product development by managing demand, while suppliers focus more on transportation and stock management. Numerical experiments show that sharing sharing can enrich supply chain performance, stabilize influence and service level.

Keywords: *competitiveness, logistics, sharing, collaboration.*

Introduction

A conventional supply chain is often identified as having low efficiency among related activities both internally and externally. Thus, collaborative sharing is recognized as an important process with value-creating potential that favors supply chain development. Mechanisms of sharing are identified as being rich in variety and complexity. Establishing effective sharing and collaboration mechanisms requires a value assessment and impact assessment.

In the reviewed literature, most researchers believe that one of the main benefits of demand is the exchange of information, forecasts and inventory sharing. Some researchers who analyzed the supply chain said that a very important success factor is the trust of the partner to achieve a successful cooperation.

Materials and Methods

In both professional and academic literature, several authors have consider various relationships in effective collaboration within the supply chain. Horizontal sharing can be replaced by cooperation inter companies that share information about resources and technologies. For this purpose, in collaboration, solutions are planned within companies from the operational to the strategic level.

In this paper, we will analyse these collaborative supply chain relationships are found in transportation and logistics (Soysal et al., Citation 2018): (i) horizontal sharing, (ii) vertical sharing, and (iii) lateral sharing.

Horizontal sharing occurs through the dynamic collaboration of more than two companies that operate and function at the same level of the supply chain. Horizontal sharing cooperation is defined as sharing between competing companies that are at the same level of the supply chain.

Companies cooperate with other companies with the target of reducing costs, making better market conditions, reducing changeability, increasing compliance, complying with operational and environmental restrictions, and developing new markets. One of the goals of collaborative logistics is to reduce execution costs, to make the logistics chain more efficient, in order to identify and exploit situations that are beneficial to companies at the same level of the supply chain that pursue a common goal by strengthening operations and increasing work productivity. It is a relative innovation that, if properly managed, is relatively inexpensive and can help other companies' logistics departments resist the intense pressure to reduce logistics efficiency as changes occur. Horizontal sharing cooperation in logistics has proven to be widely used and useful. At the time of advice, horizontal cooperation in logistics has been in the spotlight due to potential benefits such as reduced costs, fulfilment rates, and efficiency in reducing the distance travelled.

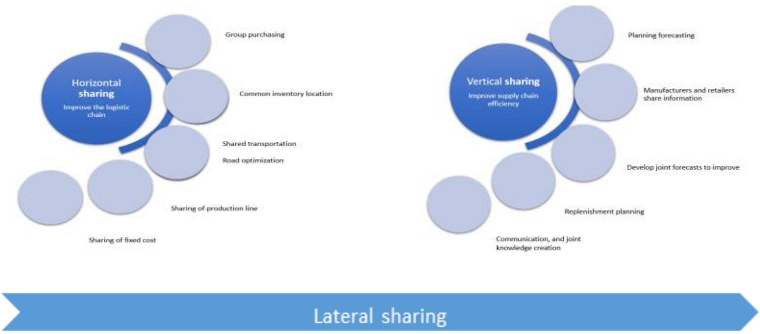

Figure 3.30 Sharing types models

Horizontal sharing collaboration has become attractive to companies seeking to be more efficient. This strategy usually involves independent planning of decisions related to economic goals. Horizontal sharing logistics has recently attracted more and more attention due to its high potential for cost reduction, uncertainty reduction, and ambient concerns.

One of the common cases of horizontal sharing is the bundling of purchases, sharing of fixed costs using common inventory locations, promoting efficiency, and joint use of transportation and production. Horizontal sharing collaboration has been widely studied due to the many the value created by sharing resources between different logistics participants, which can be warehouses, distribution centres, transport, etc. A review of the literature identifies three solutions that are considered for sharing optimization problems: location allocation, inventory management, and transport routing. In the field of transport, two operational methods of horizontal logistics sharing can be identified: sharing of orders and capacity. In theory, sharing can have many benefits, the most important of which are cost reduction and higher completion rates.

When making decisions about the distribution and layout of logistics objects, which are used in strategic decisions, because they have a protractedly term influence on logistics efficiency. In addition, such cooperation sharing route and inventory issues were related to tactical and operational decisions. Planning decisions are usually made separately from in the literature, it is analysed that various planning solutions are applied when optimizing logistics has a significant impact on the network efficiency, which is economically efficient for companies. Increasing competitiveness and productivity in logistics, it is very important to make simultaneous planning decisions that will have an impact on solving the problem of sustainability.

Recently, the development of new technologies, such as cloud computing and e-commerce, which help reduce logistics costs, increase logistics efficiency and improve capacity utilization. In such cases, multi-supplier cooperation in logistics distribution networks becomes increasingly important.

On the social side, sharing reduces the distance travelled by drivers, which means less emissions. Through horizontal sharing collaboration, information can be shared on route optimization, truck sharing, and delivery times (Pan *et al.,* 2019). Cooperation between several suppliers in logistics distribution networks is becoming more and more important and possible, especially with the recent development of new technologies. such as cloud computing and e-commerce (Wang *et al.,* 2017). On the Sharing tends to reduce the distance travelled by drivers, which means less emissions. Through horizontal sharing collaboration, information can be shared on route optimization, truck sharing, and delivery times (Pan *et al.,* 2019). During horizontal sharing cooperation, the sharing of information about customers and transport capacities enables joint route planning between partners.

Horizontal sharing is cooperation between companies that compete at the same level of the supply chain. Depending on the type of cooperation established, the practical issues can vary greatly. This encourages a clear sophisticate and describe many logistics sharing schemes. Horizontal sharing cooperation partners purpose to propose additional services to escape redundant logistics costs. Horizontal sharing collaboration between companies increases the efficiency of activities such as transportation and warehousing, reducing logistics costs and allowing companies to achieve efficiencies by individually transporting goods in small quantities. Information sharing is necessary to synchronize goods flows with information flows, which improves transport efficiency by reducing combination work. Sharing logistics information is important in reducing unnecessary costs of transporting or storing goods.

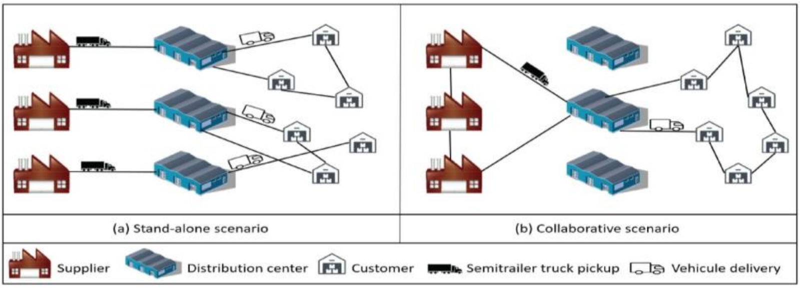

Figure 3.31 Comparison between the non-collaborative and collaborative scenarios

Horizontal sharing cooperation is often the fastest way to reduce reaction time, gain first-mover advantages, or successfully enter a new market. In all tested cases, regardless of the optimized objective, the collaboration results in savings ranging from 24% to 66% of the total cost.

Five main groups of objectives can be distinguished from the list of possibilities. These are: cost reduction, growth, innovation, rapid response and social relevance. Figure 3.32 shows objectives of horizontal sharing collaboration.

First, overall goal of horizontal sharing contribution is to reduce the costs main and non-main activities. Mainly of the momentary contribution initiatives have the main objective of reducing costs. A second potential goal of horizontal sharing contribution is development. By cooperating, logistics departments of companies can ensure financial improvement by increasing turnover or profits, and there is also the possibility of geographically expanding their potential by connecting their (distribution) networks.

Figure 3.32 Objectives of horizontal sharing collaboration

Third, horizontal sharing cooperation can be directed towards innovation. The introduction of innovative services to the market, the sharing of knowledge between organizations and the implementation the application of new technologies improves the quality of the logistics services. These new technologies often require more capital. One solution may be horizontal sharing collaboration.

In order to gain an edge over competitors and penetrate new markets, the fourth contribution of the horizontal division objective is identified as a method of shortening returns. Horizontal sharing collaboration can get a social goal. As an example, road transport has grown steadily over the past decade. In theory, the implementation of horizontal sharing cooperation in logistics would achieve many benefits.

Vertical sharing involves cooperation in the same supply chain. Vertical sharing is widely studied: cooperation can be mentioned when data is shared in t in the supply chain to reduce demand deviations. The aim of vertical sharing is to create reciprocal value between supply chain participants, increasing its efficiency. Vertical cooperation has been very successful in many aiming areas and is often named to as a "seller-buyer" setting. One of the main contribution objectives of vertical division is innovation, efficiency, flexibility and quality. Objectives of vertical sharing contribution describe in Figure 3.33.

Figure 3.33 Objectives of vertical sharing collaboration

Vertical sharing in logistics is used to reduce company costs and improve supply quality. In the case of vertical sharing cooperation, an important indicator is the profit margin.

Horizontal sharing cooperation is more valuable, because technology facilities, cooperation probability, suppliers' offer and information sharing probability are fundamental parameter for evaluating partners. Collaboration is fundamental for information sharing and horizontal integration of chain operations. Focus of vertical sharing contribution is risk management where companies collaborate to increase security. Other goals of vertical division cooperation are inventory reduction, sales and margin growth, market share expansion and efficient material flow management, better utilization of real estate, quick response to changing needs and operating conditions, acquisition of competitive advantage.To improve demand visibility and thus improve supply chain efficiency, a model of vertical sharing collaboration is often used, which uses forecasting and fulfilment planning, where manufacturers and retailers share data to create joint forecasts, thereby improving demand visibility and supply chain efficiency. Partners who participate in vertical sharing in supply chains share information that includes: sales data, resource availability, inventory levels, capacity, inventory policies, market trends, customer preferences, competitor activity, production schedules, delivery plans, supply disruptions, operational status. In the vertical sharing phase, partners have a common goal to plan together, harmonize decisions, solve problems, share resources, monitor inventory, and exchange knowledge. The luck of vertical sharing cooperation belong on keeping commitments, trusting the partner, effective communication and prompt resolution of conflicts. These factors are central to reducing costs and improving customer fulfilment and improving processes (Yang, 2009). Research on vertical sharing logistics collaboration shows that collaboration is an effective cost reduction strategy that positively influences business decision-making. Lateral collaboration as collaboration that seeks to gain greater elasticity in sharing capabilities both vertically and horizontally. As an example of lateral cooperation, one of the goals is to connect several companies into one efficient logistics network. Lateral collaboration aims to gain more elasticity by combining capabilities both vertically and horizontally.

Results and Conclusions

This paper discusses methods for evaluating supply-side collaboration with a focus on decisions and influences in the supply chain. Complex activities and diverse competing organizations with different technological, knowledge, information and resource capabilities create difficulties in achieving the goal. In addition, the degree of implementation of cooperative activities among competing organizations may differ. In order to identify and evaluate various forms of cooperation, the typology of cooperation includes the following aspects: level of decisions, competition, common assets and goals.

Collaboration in the supply chain improves the collaborative advantage that has a fundamental impact on the company's performance. Logistics cooperation is an effective management strategy that influences sustainability and economic growth.. Intercompany cooperation in logistics is an effective management strategy that brings significant benefits to logistics companies. In such a supplier-customer connection, the customer is the player and the supplier is the passive observer. This can affect pricing strategies for horizontal and vertical partnerships. When discussing the differences between vertical and horizontal sharing, the main message is that horizontal cooperation is less resource dependent because the partners are independent of each other. Horizontal sharing collaboration usually takes place between companies and describes interpersonal relationships compared to vertical sharing collaboration. Many (horizontal) collaborations aimed at reducing response time require active customer involvement, so lateral collaboration is most effective in this situation. However, such a horizontal sharing initiative can have many disadvantages, such as (a) bereavement of elasticity, (b) loss of control, (c) high arrangement costs (d) able to consolidate of the supply market in the long-term perspective.

The paper provides theoretical insights and theoretical challenges for sharing collaboration that require further research, thus providing theoretical insights that are beneficial for companies participating in horizontal and vertical cooperation, as they help define the directions of sharing, which are shared to achieve the goals to be achieved.

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MARKETING RESEARCH AND ITS ROLE WITH TACKLING THE CRISIS

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Abstract
Bearing in mind the fact that the modern market is becoming complex, multi-structured and dynamic, marketing research has a key role in enabling the reduction of the level of uncertainty. Tackling the crisis would be more complicated and slow process for any business without using the opportunities provided by the marketing research. The purpose of the study is to clarify the essence, role and characteristics of the marketing research, as well as to bring out the problems of entrepreneurial business. Through the considered specifics and substantive aspects of the marketing research, the interrelationship with the marketing decision-making process is presented. Based on the conducted research, the activity of the entrepreneurial business related to marketing research is analyzed. Important findings are made and the difficulties it faces are clarified.

Keywords: *marketing research, entrepreneurial business, marketing decision-making, problems, crisis.*

Introduction

Tackling with the crisis in modern conditions for business development is unthinkable without accurate and timely marketing decisions. Marketing research play a key role in the process of strategic marketing decision-making. Moreover, they provide the necessary, reliable, comprehensive and timely information, allowing the right marketing decisions to be made.

At the same time, N. Malhotra and D. Birks make the important clarification that marketing research is not a substitute for the decision making. They serve to create research findings that are actionable and relevant to the process. According to them, the information is used to “identify and define marketing opportunities and problems; to generate, refine and evaluate marketing actions; and to improve understanding of marketing as a process and of the ways in which specific marketing activities can be made more effective” (Malhotra, Birks, 2007).

The marketing research provide an opportunity to take actions on the part of the entrepreneurial business to reduce the uncertainty primarily in determining the guidelines for practical implementation of the activity. Moreover, adopting the approach of their periodic implementation, the entrepreneurial business has the opportunity not only to achieve an effective market presence but also prosperity. An important condition for successfully solving a problem or strategically important business tasks is the analysis of the market situation and consumer behavior based on the marketing research. On the other hand, the permanent study of the marketing environment, market and consumer demand is of crucial importance for acquiring sustainable competitive advantages over time.

In addition, marketing research is one of the most important marketing activities of the entrepreneurial business. It is no coincidence that they also support the administrative process in terms of setting goals, establishing strategies, developing a marketing plan, put the plan into action, evaluating the effectiveness of the plan (Nair, 2014).

It is obvious that the marketing research’s role is key in the implementation of the marketing activity management of the entrepreneurial business in the context of strong uncertainty of the marketing environment in the conditions of crisis. Moreover, without marketing research, the modern market would not be possible at all (Avdokushin, 2007). In this context, an important question is that of clarifying not only the inherent characteristics and substantive aspects of the marketing research but also the problems encountered by the business representatives.

Materials and Methods

In order to study the main characteristics of the marketing research as a tool for dealing with the crisis situations, a survey of 76 representatives of the entrepreneurial business in Bulgaria was conducted in the period October – December 2022. The method of responsiveness is used to collect the data due to its applicability to the specifications of the researched subjects and the nature of the obtained data. It is suitable because of the field work with the researched persons, as it provides an opportunity for direct contact with them – personal and group meetings. The processing of the collected data is carried out using statistical methods – group method, analysis method, graphic method and calculation of relative quantities.

Results and Discussion

Essence of the marketing research

The publications research shows considerable interest among different authors in clarifying the nature of marketing research. In this context, it is necessary to note that a number of authors maintain the thesis that marketing research is based on both decision-making and the solution of specific marketing problems (Sak, Zhuravlev, 2010; Pride, Ferrell, 1995). At the same time, starting from the position of a research activity directly related to satisfying the information-analytical needs of marketing, A. Sak and V. Zhuravlev define the marketing research as gathering, processing, analyzing, evaluating and forecasting the information that is necessary for the development and making of marketing decisions and for their implementation (Sak, Zhuravlev, 2010).

More particular is the view of W. Pride and O. Ferrell who associate the marketing research with the systematic development, collection, interpretation and presentation of information. They emphasize that the goal is to enable marketers to solve specific marketing problems or exploit marketing opportunities (Pride, Ferrell 1995). Other authors have defined the marketing research as a “systematic and objective search for, and analysis of, information relevant to the identification and solution of any problem in the field of marketing” (Green, Tull, Albaum, 1993). Burns, Veeck and Bush add two other aspects – designing and reporting the collected information (Burns, Veeck, Bush, 2017). On the other hand, for N. Mykolayovych, the achievement of high results, the elimination of errors, inefficient information gathering, timely decision-making and operational control at each stage of the marketing research implementation can be achieved due to the assessment of compliance with the requirements (Mykolayovych, 2014).

It is evident that the marketing research cannot be realized without the provision of marketing information. In addition, an important requirement for the success of the entrepreneurial business, depending mainly on its ability to explore and analyze the environment, is the availability of complete and reliable information (Madgerova, Kyurova, Atanasova, 2017). The possession of such information serves to “reduce uncertainty, increase the efficiency of management decisions and improve the financial performance of the company” (Karasev, 2016).

The analysis of literary sources shows that American Marketing Association (AMA) suggests the most complete definition of the marketing research defining it as a connecting function between the consumer, customer, public and marketer (Burns, Veeck, Bush, 2017).

Clarifying the question of the marketing research’s substantive aspects, it is necessary to keep in mind that some researchers associate them with the use of different methodological approaches. For example, W. Zikmund and B.Babin use the scientific method to clarify the marketing phenomena and comprehensively understand the marketing process as applicable to the management decision-making in all aspects of a company’s marketing mix (Zikmund, Babin, 2010). At the same time, L. Anastasova considers that marketing research is also based on the application of an interdisciplinary approach. Moreover, she starts from the idea that marketing research is based on the simultaneous use of the interdisciplinary and scientific approach. This, in turn, is invariably related to the provision of the necessary marketing information of the entrepreneurial business (Anastasova, 1998).

With the help of the generated information, marketing problems and opportunities are identified, and marketing actions are evaluated and improved. The goal is to improve understanding of the marketing process and make marketing activities more effective (AMA, https://www.ama.org/the-definition-of-marketing-what-is-marketing).

In this regard, E. Sarafanova and A. Yatsuk present the following stages of the marketing research: defining the problem and objectives, developing the research plan, implementing the research plan, interpreting the results and presenting the recommendations (Sarafanova, Yatsuk, 2011). Relatively more thoroughly and detailed, Ph. Kotler defines the mandatory stages that the marketing research process should include paying attention to the collection of information, its analysis and the presentation of the findings (Kotler, 1996). S. Smith and G. Albaum expand the stages by adding cost-value analysis, method of inquiry, research design и data collection design (Smith, Albaum, 2010).

Among the main advantages of the marketing research are the obtaining competitive advantages, reducing financial and commercial risk, evaluating the company’s strategic and tactical activities, increasing the effectiveness of the communication market measures, effective segmentation (Mykolayovych, 2014), monitoring customers and markets, measuring monitoring customers and markets, measuring awareness, attitudes and image, tracking product usage behavior, diagnosing immediate business problems, supporting strategy development (Smith , Albaum, 2010).

It should be considered that the process of choosing and implementing a strategy as a main part of the marketing activity of an entrepreneurial business, is invariably related to the marketing research. In this regard, Y. Bezrutchenko emphasizes that "the selection and implementation of strategies proceed synchronously: the organization implements the strategy based on previous research and at the same time conducts research in search of new strategic solutions" (Bezrutchenko, 2012). That is why proactive marketing investment and effective strategy can stabilize the positions of the organizations that are under recessionary pressure (Quinn, Dibb, 2010).

Considerable attention in the process of marketing research is given to the marketing information system. D. Doganov defines it as an organizational set of procedures, methods and technical means for creating and storing permanent information flows, necessary to be used in making managerial decisions in marketing (Doganov, 1998). It also includes the people responsible for collecting, classifying, analyzing, evaluating and disseminating the necessary information (Kotler, 1996). According to Ph. Kotler, the marketing information system consists of a system for internal records/databases, marketing intelligence, marketing research and marketing decision support. With their help analysis, planning, implementation and control of the marketing activity is carried out.

Important for the effectiveness of the marketing research process are operation and support systems providing the internal company marketing needs. At the same time, marketing intelligence aims to obtain reliable and timely information about changes in the marketing environment. The performers of the marketing research may be company units and departments, marketing specialists, a working group of economists and/or external marketing agencies. In practice, it became necessary to use a variety of quantitative and qualitative approaches, methods and models for maintaining the marketing information system.

An assessment of the marketing research's role for the entrepreneurial business

In order to reveal the role of the marketing research as an opportunity to deal with the crisis, it is necessary to examine some key aspects related to the process.

The distribution of the respondents according to the size of the enterprise found a preponderance of micro enterprises – 44.7% and small enterprises – 30.3%. The survey also includes 12 medium-sized (15.8%) and 7 large enterprises (9.2%).

It is interesting to note that before the crisis, only half of the business representatives made efforts to conduct such research to solve their urgent problems, despite the availability of sufficient financial resources. At the same time, they point out that it was not necessary to conduct research because of the relatively stable environment in which they operate.

After 2022, 84.2% say they will conduct marketing research more often. As the main reason, they mention the dynamics of the market environment and the availability of more financial resources, compared to the crisis period, marked by the highly restrictive measures taken on both a national and an international scale (Figure 3.34).

The analysis shows an increase in the frequency of conducting marketing research – at least once a year for 78.9% of the respondents. Some of them even pay more serious attention to this marketing activity, doing it every six months (6.6%) (Figure 3.36). In comparison, before the crisis, these surveys were carried out over a longer period (once every 2-3 years) even by larger businesses (Figure 3.35).

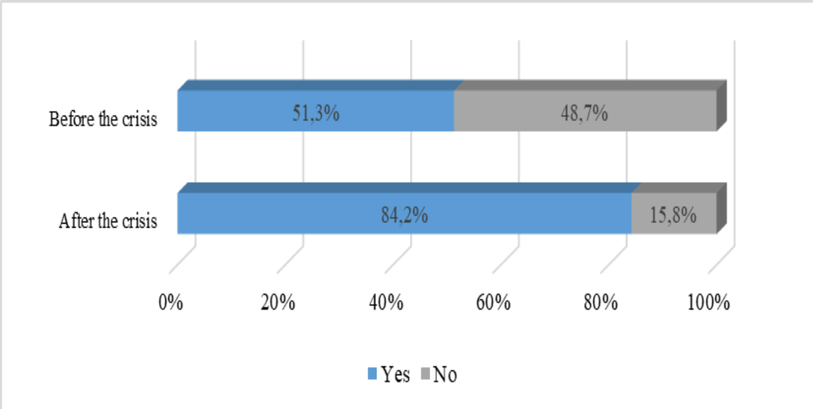

Figure 3.34 Conducting marketing research in the enterprises from the entrepreneurial business, %

Source: own calculations based on authors' survey

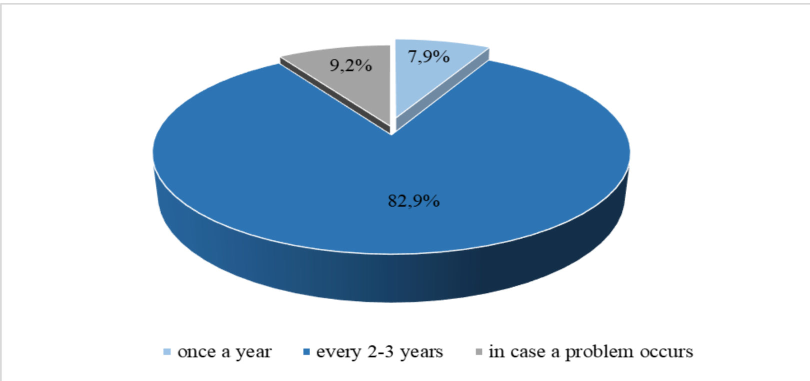

Figure 3.35 Frequency of conducting marketing research before the crisis

Source: own calculations based on authors' survey

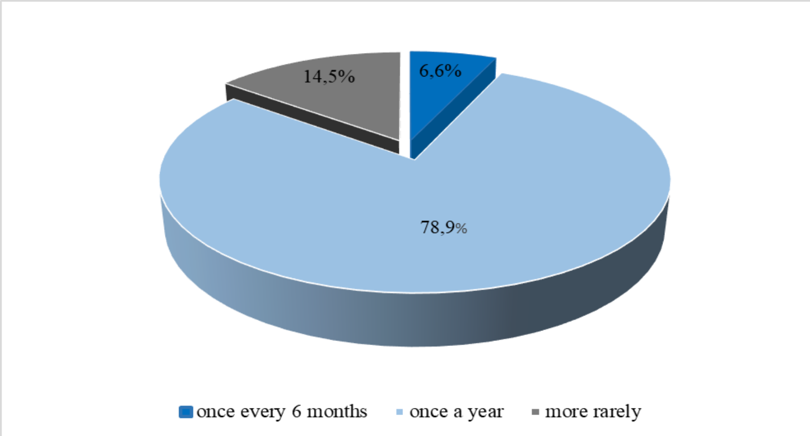

Figure 3.36 Frequency of conducting marketing research after the crisis

Source: own calculations based on authors' survey

An important issue related to the marketing research is that of its organization. In this context, the research results indicate that a small share of businesses have a specialized marketing department – 15.8% or rely on the efforts of a marketing specialist – 26.3%.

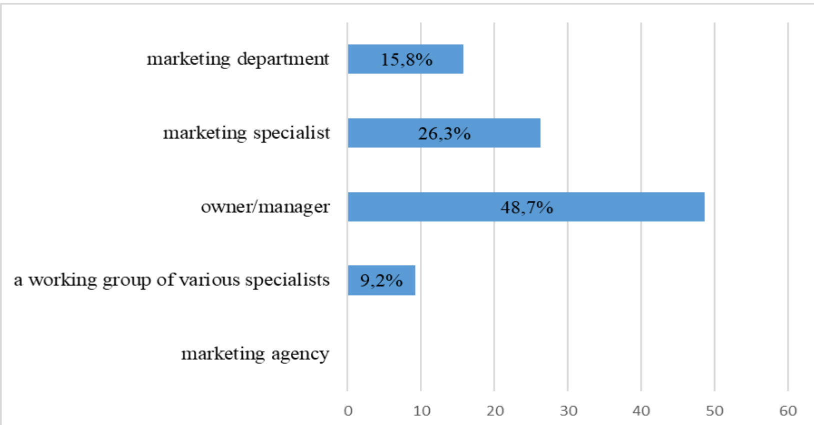

Figure 3.37 Organization of the marketing research in the enterprises from the entrepreneurial business, %

Source: own calculations based on authors' survey

It was found that in almost half of the studied enterprises (48.7%) these activities are carried out by the owner or manager. This is explained by the fact that the majority of the surveyed enterprises are micro and small enterprises. 9.2% of the respondents stated that they form a working group of various specialists just to solve a specific marketing problem. The results of the research show that the respondents do not rely on the services provided by external marketing agencies. As a main reason, they highlight the saving of money and time, as well as overcoming the dissatisfaction with the quality of the provided service dictated by the lack of knowledge of the specifics of the enterprise's activity (Figure 3.37).

As a result of the global crisis, there has been a change in the focus of the marketing research conducted by the businesses. An evidence of this is also the results of the study according to which an increased attention to the research activities of consumer behavior was found. The majority of the business representatives (82.9%) are aware of the need to study the developing trends and regularities in consumer needs and preferences in order to make informed management decisions in the new conditions. The problem-solving activities of the marketing mix did not show any significant fluctuations compared to the pre-crisis period.

An important condition for the successful conducting of the marketing research is the specially developed program including the activities related to the exact definition of the researched field, purpose, object and methods. It was found that almost all representatives of the large and medium-sized enterprises (94.7%) rely on such a program in conducting the marketing research. In the case of small and micro enterprises, there is a lack of developed marketing program. However, a significant part of the representatives of this type of enterprises (73.7%) claim that the marketing research conducted by them includes the above-mentioned activities. In addition, the results of the survey show that currently a significant part of the funds in the marketing budget is intended for marketing research.

The analysis of the presented results makes it possible to draw some conclusions regarding the marketing research. First of all, it is necessary to take into account that only after the onset of the crisis, a significant part of the representatives of the entrepreneurial business pay serious attention to the marketing research as an important approach in their activities. The lack of reliable organization of this activity emerges as a serious problem. In this regard, priority is given to the implementation of the marketing research by owners and managers. This makes the enterprise's marketing activity management not efficient enough. However, the presence and role of marketing specialists or departments should be leading.

At the same time, after the onset of the crisis, the company's management directed its efforts mainly to the study of consumer behavior. The lack of a program for conducting marketing research among the representatives of micro and small enterprises shows that they still do not realize the possibility of conducting these surveys correctly and successfully. However, a significant part of the enterprises' marketing budget is the funds related to the marketing research implementation.

Conclusions

The theory and practice prove that an invariable part of the modern marketing management of the entrepreneurial business is the marketing research. The timely diagnosis of the opportunities and threats of the environment as well as of the consumer and competitive behavior by means of marketing research contributes not only to making correct management decisions, but also to correct positioning and achieving a long-term market presence. In the modern market and crisis conditions, the optimization of the marketing efforts of the entrepreneurial business is invariably connected with the combination of the marketing activity with the implementation of the marketing studies. Lack of commitment to solving marketing research problems can lead to serious business problems. Timely diagnosis of the opportunities and threats of the environment, consumer and competitive behavior through the marketing research contributes not only to make adequate management decisions but also to correct positioning and achieve a long-term market presence. In the modern market and crisis conditions, the optimization of the entrepreneurial business' marketing efforts is invariably connected with the combination of the marketing activity with the implementation of the marketing research. Lack of commitment for solving marketing research problems can lead to serious business problems.

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ENTERPRISES COMPETITIVENESS IN CONDITIONS OF MARTIAL LAW ECONOMY

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Abstract
Increasing the efficiency and competitiveness of the enterprise in conditions of martial law economy is associated with the ability to adapt to the changing external environment, and therefore the research is aimed at determining the ways of managing the enterprise competitiveness in conditions of business environment volatility. Achieving the specified goal was carried out on the basis of a combinatorial approach, which includes a comparative analysis of national business management models, as well as an assessment of the operating conditions of domestic business entities under martial law conditions, which made it possible to identify the vectors of implementation of international experience in managing enterprise competitiveness. The prerequisites for the effectiveness of business decisions in conditions of turbulence are analyzed.

Keywords: *competition, competitiveness, competitive environment, national economy, competitiveness management.*

Introduction

A modern enterprise is a complex dynamic system that functions in macro-, meso- and micro-environments formed within the national economy. The ability to withstand competition and improve market positions is the result of effective management of the company's operation and consideration of all factors of the external and internal environment that may affect the company's position on the market. Thus, the management of the enterprise's competitiveness is an important part of the overall management system, aimed at improving the competitive position in conditions of ensuring acceptable financial results for the enterprise. The experience of developed countries in the sphere of managing the competitiveness of the national economy requires a thorough analysis, since the issue of creating new competitive industries is related to the strategy of national development. This issue becomes especially relevant in the conditions of martial law in Ukraine, because according to the survey conducted by the Innovation Development Center, the Office for Entrepreneurship and Export Development and Advanter Group, 39.9% of enterprises stopped or almost stopped their activities and only 11.5% did not have changed or increased the scope of work compared to February 23, 2022. More than 30% of Ukrainian businesses have already adapted to new realities and have a business strategy and a business development plan, but this indicator varies by region (Innovation Development Center, Office for Entrepreneurship and Export Development, Advanter Group, 2022).

Thus, new challenges necessitate the adaptation of enterprises in conditions of instability of the business environment, which is directly reflected in the mechanism of development and implementation of competitive strategy and approaches to competitiveness management.

Materials and methods

The issues of theory, methodology and practice of enterprise management in conditions of the need to ensure its competitiveness are reflected in the works of domestic and foreign scientists. In particular, the key principles of competitiveness management at the level of enterprises, sectors and national economies are reflected in the works of M. Weber, J. Keynes, M. Porter, A. Thompson, F. Kotler, J. Schumpeter, P. Drucker, and others. Among the domestic authors: A. Mazaraki, T. Melnyk, V. Geets, N. Iksarova, R. Lupak, T. Vasyltsiv, L. Antonyuk, and others, which made a significant contribution to the development of the categorical apparatus and methodological foundations of managing the enterprise international competitiveness. At the same time, paying tribute to the results of scientific research by scientists, it should be noted that in the conditions of global uncertainty and turbulence, ways of managing the competitiveness of the enterprise need to be evaluated, taking into account the challenges in the modern business environment. Thus, the purpose of the research is to identify problems and prospects of managing the enterprise competitiveness.

Results and discussions

The enterprise competitiveness is one of the most important categories of the market economy, which characterizes the possibility and effectiveness of the adaptation of the enterprise to the conditions of the market competitive environment. The concept of competitiveness of an enterprise includes its ability to produce competitive products on a specific market, its advantage over other firms in a certain industry within the country or abroad. Currently, the adaptation of the experience of the world's leading countries in the field of enterprise competitiveness management is conditioned by the integration of the Ukrainian economy into the global economic space. Therefore, enterprises are forced to constantly work in the direction of increasing their own competitiveness and to form relevant competitive advantages. Under such conditions, enterprises need to build a high-quality competitiveness management system.

In general, the concept of enterprise competitiveness management provides (Berezina *et al.*, 2021):

- choosing a competitive activity strategy;
- improving the personnel management system and work motivation;
- using a comprehensive approach to improving the quality and competitiveness of manufactured products;
- a systematic approach to diversification and production planning;
- reorganization of internal company accounting and analysis;
- improving the internal corporate financial management;
- improving the information support of the management system.

The issue of creating new competitive industries is interconnected with the strategy of national development. The development model aimed at increasing competitiveness requires the structuring of dialogue between the public and private sectors (Krasnyak & Mytsyk, 2019). International experience shows the creation of institutional structures aimed at planning, implementation and evaluation of programs and competitiveness policy. At the institutional level, national competitiveness policies are implemented through national competitiveness councils accountable to the president or prime minister (USA, Ireland, Greece, Croatia, Denmark) or national productivity councils (Canada, Singapore, Malaysia, Hong Kong). Responsible for the implementation and monitoring of competitiveness policy are national ministries that develop national competitiveness strategies or operational programs in which competitiveness policy priorities are determined.

Management style and the role of top management directly affect the decisions, which are taken at the enterprise. The process of implementing changes in the company is characterized by potential opportunities and threats. The management apparatus has a key role in making and implementing decisions regarding competitiveness management. When forming a successful business model in different national-geographic territories with different cultures, it is necessary to analyze the external socio-cultural environment and national stereotypes of behavior inherent in the nation as a whole, its businessmen, managers, etc. Table 3.18 provides a comparative analysis of modern national models of business management.

Recently, the study of the competitiveness of regions is relevant in the context of state regional policy. After all, structural changes both in developed countries and in countries with a transition economy are accompanied by the territorial concentration of economic activity. The experience of these countries refutes the hypothesis of the reduction of regional disparities as a result of economic growth, especially as regards innovation processes. Therefore, the so-called “regional innovation paradox” is formed, which consists in the need to increase costs for innovation activity in depressed regions and a relatively smaller opportunity to attract budgetary and private sources of financing compared to economically developed regions.

The main reason for this paradox lies not only in the lower availability of funding sources, but also in the nature of national and

Table 3.18

Comparative analysis of national business management models

American model	Japanese model	European model
Hiring personnel for a relatively short time	"Lifetime" recruitment of personnel	Long-term employment
Individual decision-making	Collective decision-making	Collective decision-making
Individual responsibility	Collective responsibility	Individual responsibility
Development of a specialized business career (vertical)	Development of a non-specialized (diversified) business career (horizontal)	Moderately specialized career (with elements of centripetal)
Mechanisms of explicit, accurate control	Mechanisms of indirect, implicit control	Informal control with formalized criteria
Selective attitude towards a person as an employee	Attitude towards the employee as an individual	Holistic approach to the person (attention to the family)

Source: conducted on the basis of (Berezina et al, 2021; Krasnyak & Mytsyk, 2019; Sharko, 2015)

regional innovation systems, which determine the innovative competitiveness of the country and its regions. The experience of highly developed countries of the world, such as the USA and EU countries, shows that the creation of a post-industrial society and the improvement of international competitiveness are possible only on an innovative basis, with the maximum use of the innovative potential of the regions, and taking into account the peculiarities of each of them. The creation and implementation of fundamentally new products plays a decisive role in strengthening the competitive positions of product manufacturers on world markets, which is possible only under the conditions of an effective national innovation system, which is formed individually in each country and includes the following subsystems (Melnyk & Iksarova, 2016):

- the sphere of R&D;
- education and professional training;
- innovative infrastructure;
- production of competitive products and services;
- legal, social and financial institutions.

The nesessity for adaptation to changes occurring in the external environment is a mandatory component of the company's success. Failure by managers to take into account changes in the world economy, including those caused by the pandemic, can lead to the loss of the company's competitiveness (Melnyk *et al.,* 2021). Domestic entrepreneurs face new challenges that need to be taken into account when planning their activities. According to N. Taleb, enterprises, faced with the impossibility of predicting events in the international environment, should change the classic (on the criteria of optimality and the ability to predict future indicators based on current information) approaches to decision-making, business management, etc. The current era requires a radically new paradigm in making business decisions, which will allow not only to withstand unforeseen shocks in an extremely turbulent world, but also to gain significant management experience. Turbulence stems from the theory of the "black swan" (Black Swan Theory), which considers difficult to predict and rare events that can have significant consequences (Taleb, 2018).

In 2021, Ukraine took 54th position according to the global competitiveness index, and 50th position according to business efficiency, which is a component of the rating (World Competitiveness Report, 2021). At the same time, it is necessary to take into account the current conditions of domestic enterprises. Thus, in the current conditions, it is quite difficult to quantitatively predict the fall in Ukraine's GDP as a result of the war unleashed by the Russian Federation, given the prolongation of the acute phase of hostilities, the daily increase in the losses of Ukraine's production and infrastructure potential, and the absence of signs of a suspension of military intervention by the Russian Federation. According to the estimates of the Institute of Economics and Forecasting of the National Academy of Sciences of Ukraine, the following factors lead to a direct reduction in the GDP of Ukraine (Institute of Economics and Forecasting, 2022):

– destruction of production facilities, housing stock, non-residential, transport and social infrastructure;
– restrictions on the use of the national land fund as a result of its partial occupation, as well as damage caused by mining, shelling and pollution of territories;
– reduction of the labor force employed in production;
– decrease in the volume of consumer spending of the population;
– reorientation of state expenditures in favor of industries not directly related to GDP production;
– increase in the level of inflation, debt obligations and devaluation of the national currency;
– increasing prices for energy resources, etc.

The beginning of a full-scale Russian invasion became a challenge for domestic enterprises. Some enterprises faced problems in disrupting supply chains or reducing demand, however significant part suffered from damage to fixed assets or were forced to start the process of relocating production facilities. The war year of 2022 became for Ukraine the period of the greatest losses in the entire history of independence. According to the estimates of the Ministry of Economy, the fall in GDP by the end of 2022 amounted to 30.4%.

In future, the potential for restoring the industrial potential in wartime are (Institute of Economics and Forecasting, 2022):
– relocation of enterprises and their personnel;
– restoration of supply and production chains;
– attraction of help from international partners;
– determination of the list of industries and enterprises that will require a state order to provide the population with essential goods, including for the purpose of import substitution;
– developing programs to stimulate production in Ukraine with the definition of clear mechanisms for obtaining state orders and selling products.

Conclusions

The variability of the business environment is a characteristic feature of the development of any enterprise in market conditions. The enterprise functions and develops in a dynamic external environment, adapting to its changes. The complexity and instability of market conditions require the enterprise to constantly improve the forms and methods of management. In order to survive and maintain the enterprises competitiveness in the current conditions, systematic adjustments of their economic activities are required, taking into account changes in external conditions.

The process of managing the enterprises competitiveness is carried out taking into account the goals and objectives of the enterprise based on taking into account its capabilities, as well as factors of the internal and external environment. The management of the organization's competitiveness should be systemic, and the set of measures aimed at the realization of the established goals should be constantly revised based on the comparison of the obtained results with the planned indicators and taking into account changes in the conditions of the competitive environment in which the enterprise operates.

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Chapter 4

MIGRATION PROCESSES AND MANAGEMENT OF THE LABOUR POTENTIAL OF SOCIO-ECONOMIC SYSTEMS

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THE PROFESSIONAL EDUCATION' PUBLIC INSTITUTE IN UKRAINE: TASKS IN THE CONDITIONS OF THE LABOR POTENTIAL QUALITY' GLOBALIZATION CHALLENGES

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Abstract
The study defines the goals, tasks, tools and expected results of the implementation of the concept for the professional education system' modernization as a lever for stimulating the Ukraine' socio-economic development in the conditions of nowadays competitive challenges of global and macro-regional scales. The set of influences and functions of the professional education system in the economic and non-economic life spheres (primarily, resource-reproducing, standard- and worldview-forming, innovation productive and transferring, social-stabilizing) embody a number of the competitiveness' significant factors for countries, national producers, certain communities (territorial, functional), social groups and individuals in the main competitive areas (in the internal and foreign markets of goods, services, labor; within the framework of cross-border, nationwide, regional mechanisms of access to free services provided by state and regional order, as well as to the respective levels of socio-economic development funds). Civilization trends and economic practices of developed countries stimulate national civil society to actualize a number of requests to provide an average individual' decent opportunities to meet the needs for quality education

services, profession acquirement, confirmation and increase of qualification regardless of the residence place, equalization of the appropriate starting conditions in local communities and regions, as well as to improve the efficiency of public and state control over the corresponding legislative and social-labor guarantees' implementation.

Keywords: *professional education, labor potential, workforce, competitiveness, innovations, globalization challenges, socio-economic policy, Ukraine' prospects.*

Introduction

The professional education' public institute covers the processes of functioning and interaction (including through legal and sub-legal, formal and informal regulation mechanisms) of higher institutions, vocational and technical schools, organizations of career guidance, professional development and retraining with or without separation from labor activities of various ownership forms that are providing appropriate services to the population' target categories of various ages throughout life (among them, to priority, vulnerable, marginal groups). The activity of the professional education institute solves a number of important tasks for socium, including: reproduction and improvement of quantitative and qualitative characteristics of the workforce and labor potential in general; participation in the implementation of socially accepted guarantees for social harmony and stability, the corresponding social protection and security' state policy, equalization of basic (including starting) living conditions; creation, dissemination, implementation of socio-economic development' innovative resources and mechanisms; reproduction and transmission of worldview, social (among other components, economic) culture, ethics, morality, as well as formal and informal interactions' mechanisms that are considered as productive.

Modernization of social approaches to the professional education' organization, its institutional foundations, principles, functioning methodology at the national, regional and local levels is an important condition for improving the efficiency and results of the national economy, the structures' and mechanisms' spectrum of its innovative development and personnel support, implementing the population' basic constitutional rights the regarding professional self-realization, comprehensive development and education throughout life, obtaining decent labor income, improving the life' level and quality by the average individual' own efforts. These tasks' solving are necessary prerequisites for the effective response of the state, its economic system, the whole socium to the challenges of world-wide globalization processes, first of all, regarding the competitiveness of both producers and workers, as well as the technological basis of the business processes' set in the economy and extra-economic life spheres.

Materials and Methods

Modern researchers pay considerable attention to the substantiation of: accents and priorities for improving the functioning mechanisms, structure, content of professional education in its links' spectrum; interrelationships of this public institution with other socium macrostructures (especially, regarding the determination of the socio-economic development' level, quality, rates); the system of professional education effects on the parameters of innovative processes and competitions in the spectrum of their deployment spheres in the globalized world, as well as among a number of integrated cross-border business, foreign economic, cultural and educational structures.

In particular, this studies are identifying risks and opportunities, developing approaches to improve the higher and vocational education quality, taking into account the world-wide globalization and integration processes' requirements for the professional training and qualifications of the economically active population, as well as to the workforce' competitiveness (R. Pinheiro, G. Wangenge-Ouma, E. Balbachevsky, Y. Cai, 2015; L.J. Teague, 2015; T. Kromydas, 2017; E. Charney, 2019; O. Marchenko, N. Sydorenko, 2019). At the same time, the problems that are specific to the various stages of the latest period of the vocational education system' functioning are defined and analyzed, while taking into account the needs for increasing the higher and vocational institutions' economic efficiency, balancing regional labor markets, implementing a number of socio-economic reforms (L.J. Teague, 2015; S. Vavreniuk, 2018; O. Marchenko, N. Sydorenko, 2019; I. Kalenyuk, D. Djakons, 2019; O. Voliarska, 2020; L.Ya. Benovska, O.V. Paska, 2021; M. Poplavskyi, 2021). An important direction of specialized researches is to ensure the proper role of professional education in stimulating, disseminating, capitalizing the scientific and technical progress' achievements, performing a systemic innovative impact on the economy and society (R. Pinheiro, G. Wangenge-Ouma, E. Balbachevsky, Y. Cai, 2015; O.V. Mahuta, 2016; E. Savicheva, O. Chesnokova, 2017; A. Moscardini, R. Strachan, T. Vlasova, 2020; M. Poplavskyi, 2021). Also it's appropriate to note the studies on the assessment of the current situation and prospects for ensuring the vocational and technical education sector' stable functioning, which is extremely important for the qualified workers' provision in territorial economic systems and the population vulnerable strata' social protection (T. Kromydas, 2017; A.P. Vashchenko, 2018; L.Ya. Benovska, O.V. Paska, 2021; S. Hreben, 2021).

The considered specialized researches substantiate the need to update the concept and strategy for improving the Ukraine' professional education system in its links' spectrum (in particular, the main problems, goals, tasks, tools, expected results of this process), taking into account the near and distant priorities regarding diversification, modernization, increasing the competitiveness of the national economy.

Thus, the purpose of the study is to found out conceptual approaches to the professional education system' further modernization (its goals, tasks, tools, expected results) in the context of urgent needs and strategic priorities of the Ukraine' socio-economic development acceleration in the conditions of numerous nowadays competitive challenges.

Results and Discussion

The realities of Ukrainian socium activity in the professional education provision indicate the presence of a number of problems that are quite inertial due to their consequences and solving measures' effectiveness (O.V. Mahuta, 2016; A.P. Vashchenko, 2018; S. Vavreniuk, 2018; O. Marchenko, N. Sydorenko, 2019; I. Kalenyuk, D. Djakons, 2019; O. Voliarska, 2020; L.Ya. Benovska, O.V. Paska, 2021; S. Hreben, 2021; M. Poplavskyi, 2021). Among these problems, we should note: the unsatisfactory objectivity of the mechanisms for the formation and distribution of the personnel training order' state and regional segments, weak control of these processes by civil society; education institutions' excessive orientation on meeting the current conditions of local labor markets and requests of the applicants’ most solvent groups without adequate consideration of the strategic outlook and priorities; an acute lack of vocational training funding, including due to the local communities budgets’ deficit; the shortage of practice bases for pupils and students, deficiencies in material, technical and personnel support of production practice programs.

The competitiveness of persons acquiring professional education, so as workers and specialists of various qualifications on the labor market directly depends on the modernity level of the comprehensive and professional training that they have received, which is ensured by the consistent updating of the content, methodology, technological base, methods of teaching professional knowledge, relevant academic disciplines, their materials, programs, practices, etc., as well as of the qualifications’ and competencies’ level of the scientific and pedagogical staff in the spectrum of professional education institutions (the establishments for career guidance, vocational diagnosis, vocational training, advanced training, career development). At the same time, educational cycles’ and programs’ saturation with the latest knowledge, means of their teaching and assimilation is not a sufficient condition for increasing the competitiveness of pupils, students and graduates; it should be supplemented by strengthening the focus on the relevant knowledge’ practical application, assimilation of appropriate abilities, skills, competencies within the framework of seminars, laboratory classes, practice in production, etc.

Therefore, the goal of the Ukrainian professional education’ modernization is to improve the organizational and economic grounds and the functioning mechanisms of this social system links’ aggregate in the directions of increasing the population’ professional and qualification level and competitiveness in the labor market, strengthening the economy’ personnel potential, improving the resource provision, as well as the quality of services and functioning processes of the professional education system itself in the area of fulfilling the professional and educational demands of the population’ various strata and economic subsystems.

The general trend in the development of social activities for the professional education’ provision and the professional education system itself is determined as balancing integration and implementation of current and prospective public demands and guidelines in the professional and qualification potential reproduction' sphere, the capitalization of which will ensure the population well-being' improvement, the national economy' diversification and innovative modernization (R. Pinheiro, G. Wangenge-Ouma, E. Balbachevsky, Y. Cai, 2015; T. Kromydas, 2017; S. Vavreniuk, 2018; O. Marchenko, N. Sydorenko, 2019; O. Voliarska, 2020).

The process of the professional education' modernization should solve the tasks related to:

– improving the education quality, the educational and pedagogical process' structure, the list of specialties and professions, the content of relevant curricula and programs in accordance with the modern knowledge' and technologies' sum, achievements and prospects for the scientific and technical progress development, public expectations and strategic goals for the technological structure' modernization in Ukraine, as well as for the diversification of the national economy and foreign markets for internal goods' and services' sales;

– developing the professional education regional subsystems' functional and territorial organization in the directions of enhancing the relevant services' availability, their material and technical, scientific and pedagogical support, integrating the links' spectrum (vocational guidance, vocational and higher education, activities for advanced training and retraining throughout the working life) for effective communications with communities of services' users and employers' representatives, as well as for inclusion in territorial scientific-innovative-production clusters and a number of free economic zones' structures;

– rising up the effectiveness of connections and communications between professional education institutions, these services' users and social dialogue' subjects (i.e., the state, the public, employers) in the development and forecasting of the scope and structure of the personnel' training, career development and retraining within the framework of state and regional orders, employment services' programs, as well as at the private persons' expense; society-wide popularizing of objective ideas about competitive education in the Ukrainian market economy' conditions;

– optimizing the public control mechanisms over the balancing of educational programs' mandatory and optional components in professional education institutions of various ownership forms, as well as over the resources’ spending, received from their economic (professional, auxiliary) activities, primarily for the educational and pedagogical process’ needs, its material and technical base’ improvement;

– ensuring the competitive education availability for the population’ vulnerable groups; assisting graduates in finding the first job in their specialty on the labor market.

We should highlight the following tools for modernizing the organizational and economic foundations and functioning mechanisms of the professional education, developing these services’ quality, such as:

– regulatory and administrative (first of all: objectification of the content and scope of the order’ state and regional components for personnel training, career guidance, retraining in the higher and vocational education institutions; coordination of specialties’ and professions’ state standards with the National qualifications’ system, setting precedents for the dominance of the professional education’ state standards in the practice of non-formal education’ recognition, as well as approval of corporate standards for knowledge, skills, competencies, qualifications by positions);

– financial and fiscal (in particular, the initiation of: a state budget subvention for a regional order of personnel training, retraining and advanced training in vocational and technical schools; tax benefits and preferences for business entities that are funding their stuff’ training, professional guidance and retraining with or without separation from production);

– marketing (encouragement of professional education entities of various ownership forms to promote the aggregated brands of universities, vocational schools and their specialties, aligned with both the regional labor markets’ current needs and the state development strategy for the whole economy, certain spheres and types of business activities; involvement of the social dialogue’ institutions in determining the content and providing professional education services).

The assessment of the social activities’ situation for providing professional education in Ukraine, the existence of the above-mentioned problems, which are rather inertial due to their consequences and solving measures’ effectiveness, doesn’t allow to expect significant changes in this public institute’ organizational and economic mechanism in the near future.

The main results of the modernization of the professional education' system and content in the short-term prospects will be:

– improvement of the education' content and structure, the educational services' quality according to the list of specialties and professions for which the order' state and regional components for personnel' training, professional development and retraining are distributed;

– dissemination of the dual education' programs and methods in vocational and technical institutions (from colleges to schools of narrower specialization);

– further enhancement of the specialties' and professions' state standards, coordination between this aggregate, the National qualifications system, non-state systems and standards for the professional education' recognition;

– formation of the resource centers' network providing services for the personnel' vocational education, professional development and retraining on the basis of regional status' vocational and technical schools with educational services' diversified offer;

– increase of the control effectiveness over the target use of funds obtaining from the business activities of vocational education institutions of various ownership forms.

The modernization process in the professional education' system and content in the long-term prospects will contribute to:

➢ the improvement of the professional education system' organizational and economic mechanism and structure, including through:

– the higher and vocational institutions' integration in professional education territorial subsystems, regional scientific-innovative-productive clusters; development of programs and a bases' network for pupils' and students' production practice; dissemination of programs and measures of professional education territorial subsystems' innovative activities;

– strengthening the colleges' role as a link of higher institutions' and vocational schools' integration due to providing their students with thorough comprehensive education and broad specialization that allows them to have jobs in a certain profession on workers' or junior specialists' positions, or to continue higher professional education' obtaining;

– diversification of the professional education system' funding sources due to a noticeable increase in the employers' costs for the personnel' training, professional development and retraining with or without separation from production;

– optimization of the vocational schools' territorial organization in accordance with the regional economic subsystems' needs;

➢ the enhancement of the education quality and competitiveness of graduates from Ukrainian universities and vocational schools on the internal and foreign labor markets, including as a result of balancing nation-wide state and corporate standards of professions and qualifications by certain positions;

➢ the expansion of the vulnerable groups' access to competitive professional education with the possibility of improving qualifications or acquiring a related profession, in particular, within the framework of programs with extensive state or regional funding;

➢ the popularization of Ukrainian services for professional education and advanced training among applicants from other countries due to the ratio "quality – price";

➢ the increase of the state and local budgets' income from the professional education system' services.

Conclusions

Civilization trends and economic practices of developed countries, powerful cross-border associations and transnational corporations, aspirations for cultural, foreign economic, socio-political integration into the EU structures, as well as measures for their implementation, are spreading in modern Ukraine. Such trends stimulate national civil society to actualize a number of requests to provide an average individual' decent opportunities to meet the needs for quality education services, profession acquirement, confirmation and increase of qualification regardless of the residence place, equalization of the appropriate starting conditions in local communities and regions, as well as to improve the efficiency of public and state control over the corresponding legislative and social-labor guarantees' implementation.

In this context, it is expedient to update the concept and strategy of increasing the efficiency of Ukrainian professional education system, aimed at enhancing the competitiveness of the national workforce and economy in the conditions of the world-wide challenges for business integration, as well as for globalization of economic and extra-economic life spheres' standards and practices.

In particular, the main directions of the lifelong professional education system' modernization should ensure:

– its popularization and establishment of the management' and financing' effective system through the public-private partnership and improvement of the professional education' content and quality;

– further consolidation of the efforts of the tripartite public dialogue' participants regarding the professional education development in the direction of solving both corporate and local tasks for providing qualified specialists and workers, so as for the modernizing territorial economic complexes and labor markets;

– development and improvement of education standards for a number of professions, educational programs' update, rise of teachers' qualifications, including due to the active cooperation with employers' institutions during the further implementation of the National Qualifications System, subordinated to state professional standards;

– strengthening the autonomy of the professional education institutions' spectrum, as well as the local authority' management of vocational and technical schools;

– further planning of the vocational education institutions' regional networks, including through their aggregation;

– renovation of the professional education infrastructure due to the creation of educational and practical centers with systematically upgrading equipment and technique that provide services for obtaining practical skills by students, improving qualifications or retraining adults with the funds of the state and local budgets, professional education institutions' special funds, as well as with the business companies' support.

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ORGANIZATIONAL AND PEDAGOGICAL CONDITIONS FOR IMPLEMENTING THE COOPERATION PRINCIPLE IN MANAGING A VOCATIONAL EDUCATIONAL INSTITUTION IN ORDER TO DEVELOP PROFESSIONAL COMPETENCE OF STUDENTS

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Abstract
The article defines the concepts of "condition", "pedagogical conditions", "motive" and "motivation" in psychological and pedagogical theory. It explores organizational and pedagogical conditions for implementing the cooperation principle in managing a vocational educational institution based on the principles of partnership pedagogy. Non-traditional teaching methods (based on the cooperation principle) aimed at developing professional competence of students in a vocational educational institution are proposed. The article emphasizes that management of a vocational educational institution using innovative approaches involves creating a system that should be focused specifically on developing competences among students of a professional institution. That system should be based on partnership relations, use project technologies and take into account content and structural components, apply various techniques, methods and modern technologies in managing the educational process.

Keywords: *vocational education, head of a vocational educational institution, socioeconomic changes, the cooperation principle, professional competence, organizational and pedagogical conditions, methodology.*

Introduction

Nowadays, vocational education provides both fundamental professional and practical training, obtaining qualification levels, retraining and continuing professional development. Therefore, the role of professional education is determined by its place in the life of the society, which accounts for the social needs it satisfies and the social functions it performs.

The state should provide «training of qualified personnel capable of creative work, professional development, acquisition and implementation of knowledge-intensive information technologies that are competitive on the labour market» (National Doctrine..., 2001). At the same time, the quality of staff training in vocational educational institutions does not yet fully meet modern socioeconomic needs of the society. The following factors contribute to the current situation: policy and legal frameworks that are not regulated at the legislative level, ineffective monitoring of the labour market, inefficient mechanism of managing and motivating employers, etc. (Radkevich, 2016).

Current changes in education, in particular in vocational education, necessitate the search for ways and means of improving the managerial activity of the head of a vocational educational institution. After all, cooperation principle in managing a professional educational institution and increasing the effectiveness of the educational institution through the implementation of the cooperation principle can become an effective way to achieve the successful functioning of a professional educational institution.

Therefore, implementing the cooperative principle in managing professional educational institution will enable the head of the institution to navigate in the conditions of modern socioeconomic changes, organize and plan their managerial activities in such a way as to ensure the competitiveness of the graduates of the vocational educational institution.

Thus, applying major principles of vocational education in managing a vocational educational institution, in particular, the implementation of the cooperation principle among subjects of the educational process for its successful functioning and further implementation in managing a professional educational institution is of particular importance.

Materials and Methods

Cooperation principle in pedagogy isn't a new one, since the ideas of this principle are consistent with humanistic psychological and pedagogical views that have been traced in the theoretical heritage since the beginning of the 20th century. From a pedagogical perspective, the peculiarities of this principle, that is interaction of subjects of the educational process, can be effectively used in teaching as well as managing vocational educational institution, but only taking into account certain organizational and pedagogical conditions.

To define and justify the organizational and pedagogical conditions for implementing the cooperation principle in managing a vocational educational institution, we will analyze the concepts of "condition" and "pedagogical conditions".

The explanatory dictionary provides the following definitions of the term "condition":

- A necessary circumstance that enables the implementation, creation, and development of something.
- Circumstances, features of reality under which something happens or is carried out.
- Rules that exist or are established in certain area of life, realities that ensure the normal operation of something (Busel, 2009, p. 1506).

In the philosophical dictionary, the concept of "condition" is defined as a category that reflects the universal relationship of the subject and those factors due to which it arises and exists (Philosophical Dictionary, 1986, p. 703).

In pedagogy, there are different approaches to defining the concept of "pedagogical conditions". In the handbook on professional pedagogy, Semenova & Stasiuk (2006) define "pedagogical conditions" as circumstances that determine an efficient pedagogical training of specialists, which is mediated by the activity of individuals and groups of people (Handbook on professional Pedagogy, 2006 , p. 243).

Researching pedagogical conditions for ensuring the quality of professional training of future specialists, Honcharenko (2015) gives the following classification:

- Objective (variable) conditions that ensure functioning of the pedagogical system, include the regulatory and legal framework of the education field, means of information, etc. and act as one for the reasons that encourage the participants of the educational process to behave themselves appropriately.

- Subjective conditions affect functioning and development of the pedagogical system, reflect the potential of participants in pedagogical activity, the level of coherence of their actions, the degree of personal significance, priorities and leading ideas of education for those who study.
- General conditions that contribute to functioning and development of the pedagogical system (social, economic, cultural, national, geographical, etc.).
- Specific conditions including socio-demographic peculiarities of students, the location of the educational institution, material and technical resources, etc. (p. 107-108).

Stelmashenko (2001) believes that the concept of "organizational and pedagogical" means:

- Coherence between basic education and the aim of training specialists of various qualification levels.
- Implementation of general didactic principles of comprehensibility, scientificity, systematicity, transparency, correlation of theory and practice, etc.
- Reliance on the principles of fundamentalization and integration of basic knowledge.
- Ensuring internal connections between the components of the specialist training quality management system.
- Compliance of educational programs material with the discipline content, the concepts system and specialties in a certain field of knowledge.
- Dynamism and flexibility of professional knowledge system in accordance with the professional hierarchy levels.

According to Spodinova (2001) pedagogical conditions comply with external and internal factors: external factors take into account the organization of the educational process; planning educational and methodical materials content; interaction at interpersonal level; internal ones are determined by professional motivation; need for self-improvement; inclinations; preferences, interest in professional improvement (p. 79).

Therefore, the majority of authors interpreting the concept of “pedagogical conditions” presume the efficiency and effectiveness of the educational process.

We also agree with the Ortynskyi’s opinion (2009), who emphasizes that in the educational process it is necessary to create such conditions that contribute to achieving the goal and, in particular, developing students’ skills aimed at organizing educational activities and professional competence. To solve this problem, it is necessary to develop a program of continuous professional and pedagogical training of pedagogical workers (p. 457).

As Kozlovskyi (2016) notes, the activity of a teacher has high social significance and takes one of the central places in developing psychological culture of an individual, national consciousness and spiritual culture, since a teacher is called to prepare a specialist for future professional activity with an appropriate system of professional knowledge, skills, qualities (p. 216).

Mukan is of similar opinion (2007), pointing out that professional education is aimed at providing opportunities for professional development, acquiring another qualification, obtaining a specialty, or another profession based on the previously attained degree and acquired practical experience (p. 234) .

Thus, it is important to emphasize that students’ professional competence development in non-pedagogical institution will be effective due to a combination of the following organizational and pedagogical conditions: developing a valuable attitude to continuous self-education, self-development and creative self-realization; focus on active use of personality-oriented technologies aimed at building dialogue and subject-subject interaction in the educational process.

Tsikra & Kulid (2013) in their scientific study provide quite specific organizational and pedagogical conditions for applying the principle of cooperation, namely:

- Interpersonal interaction.
- Adding a “dose” of uncertainty into the educational process (achieving the final goal in different ways; teachers’ tolerance to «a different opinion», the desire to develop criticality, independence, therefore, when preparing for classes, it is advisable to plan several different options for presenting the material).

- Developing the ability to ask questions (contests for the most original question, etc.).
- Creating the situation of “unfinished” thought, incomprehensibility (developing a problematic vision of the researched issue, cognitive incompleteness of thought).
- Clash of views and theories (new or contradictory facts, theories, hypotheses, interpretations).
- Creating an atmosphere of mutual respect and ethical equality (“the effect of mutual learning”, the possibility of changing one’s point of view).
- Eliminating psychophysical barriers to dialogic communication (interactive, emotional influences, intellectual fatigue).
- Creating an emotional background of learning (the desire to bring the subjects of the educational process closer together, informal communication, emotional responsiveness, attention to interlocutors).
- Advantage of positive feedback, encouragement, positive reviews (p. 176).

Results and Discution

Thus, taking into account the material regarding the term “organizational and pedagogical conditions” it is important to emphasize that, productive and efficient activity of the subjects of the educational process must be carried out within the framework of a permanent system of collective work that acts purposefully in all spheres of social and economic life. Based on such interaction, the head of a professional educational institution should be able to apply the principles of innovation and cooperation. These major principles in management incorporate:

- Supporting innovative initiative, creativity, self-activity and independence of management objects.
- Transition from spontaneous mechanisms of innovation processes to consciously controlled ones.
- Informational, material and technical resources, personnel support for the implementation of the main stages of innovative educational processes.

- Forecasting reversible or irreversible structural changes in the innovative socio-pedagogical environment.
- Strengthening the sustainability of innovative educational processes.
- Accelerating the development of innovative processes in an educational institution.

Students' professional competence is also developed by exchanging experience with other educational institutions, doing internship in organizations and institutions (which can also be regarded as a manifestation of the cooperation principle), studying promising professional experience, attending various conferences, seminars, trainings, workshops etc. Regarding the use of various technologies to develop student's professional competence, it is worth emphasizing that game technologies, in particular, a business game have an essential role. The importance of business games in the educational process was highlighted by such scientists as Katerusha (2009, p. 54-55), Huziy (2002, p. 15), Yavorska (2005, p. 243) and others.

In scientific literature, we find confirmation of business game efficiency in resolving conflict situations that may arise in the professional interaction of people. As Belkin (2017) notes, such use of this method is based on a combination of administrative (technological factors), social (building interpersonal and professional relationships) and intellectual (critical, non-standard, creative thinking) components (p. 70).

Playing business games enables every participant to get the most out of it. However, the extent to which a student can benefit depends on the students themselves, and not on the teacher, as in the traditional organization of the educational process. The main organizational attributes of game simulation methods are as follows:

- Game simulation attempts to reflect a certain aspect of the purposeful professional activity.
- Game simulation participants receive various roles that determine the difference in their interests and motivational incentives in the business game.
- Game actions are regulated by a system of rules, penalties and incentives.

- In game simulation, the spatio-temporal characteristics of the simulated activity are transformed.
- Regulation of game interaction includes the following blocks: conceptual, scenario, production, stage blocks, block of analysis, criticism and reflection, block of evaluation of game participants work, and block of providing information.

The main tasks of a teacher conducting business games are as follows:

- Providing an additional source of information about the role requirements.
- Assessing a team and its leader, developing recommendations aimed at revealing the multivariate nature of completing the task.
- Controlling the planning process and coordination meetings.
- Ensuring clear regulations of the business game, correct understanding.
- Providing information on the methodology of public speaking techniques.

The tasks of the head of the business game are primarily to ensure the clarity of game instructions in all rounds. In addition, active participation in polemics (a mandatory condition of the business game) enables the analysis of the opponents' behavior, possible questions, and therefore preparing answers (Belkin, 2017, p. 74).

Summing up, it should be pointed out that applying game modeling technologies in educational process contributes to the development of: cooperation skills, a sense of collective responsibility; analytical, prognostic, research and creative potential; presentation skills, communicative and interactive competence of students; practical professional skills for solving real life situations in professional activity (Belkin, 2017, p. 91).

Non-traditional forms of educational process such as excursions to other educational institutions, organizations or institutions; seminars and workshops, quizzes; brainstorming sessions, interactive exercises contribute to the development of professional competences of students.

As Sushentseva (2015) points out, what is really important nowadays is to enhance the attractiveness of the vocational education system for the potential investors/social partners and strengthening its relations with the modern labor market. After all, it enables professional institutions to define the requirements of employers more clearly and widely and to respond more quickly to modern changes in the labor market. Cooperation on a partnership basis will also help in this aspect, that is, creation of a system that will combine employers, the employment service, students, and their parents, as well as education management administration and professional educational institutions (p. 272).

We can't ignore such a method of developing the professional competence of students in a vocational educational institution as boosting motivation and success situations based on partnership, combined with a positive emotional and psychological experience, which also contributes to achieving important quality results.

Therefore, a motive is an incentive to an activity that is related to satisfying the subject's needs. Motive is also a factor that causes a certain activity, the choice of actions, and combines external and internal conditions that prompt the subject to act. The term "motivation" is a broader concept than "motive" (Stepanov, 2011, p. 25).

In modern psychology, the word «motivation» is interpreted as something that: defines a certain system and its factors that encourage action (in particular: purpose, needs, motives, intentions, aspirations, and so on); description of the process that motivates and supports behavior in activity at a certain level. In the scientific and theoretical literature, motivation is most often defined as a set of factors of psychological qualities that explain the activity and behavior of an individual and encourage the direction and activity of this behavior (Zinevych, 2015, p. 22).

Conclusions

Therefore, the greatest effect in the use of the considered organizational and pedagogical conditions for implementing the cooperation principle in managing a professional educational institution in order to develop the students' professional competence can be achieved when using a systematic and comprehensive approach to their selection in accordance with the specified tasks of the students' professional competence development.

Therefore, the first organizational and pedagogical condition for implementing the cooperation principle in managing a professional educational institution is the use of game technologies to develop comfort communication between the subjects of the educational process in the game environment.

The second organizational and pedagogical condition for the implementation of the principle of cooperation in the management of a professional educational institution is the use of non-traditional forms of educational organization, focused on developing the competence among students of a professional educational institution.

The systematic selection of defined organizational and pedagogical conditions is based on the fact that each condition enables to solve a specific task in the educational process, and on the other hand, complements other conditions. The correct choice of the place and time for applying certain conditions using the cooperation principle in managing a professional educational institution makes it possible to achieve a cumulative effect, that is proficient skills and extensive knowledge, broadening the horizon and, as a result, developing professional competence of students in the educational institution.

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VALUE DIFFERENCES BETWEEN WILLING TO MIGRATE LITHUANIANS AND EMIGRANTS IN THE MAIN DESTINATION COUNTRIES

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Abstract
This chapter aims to reveal differences of individual values of Lithuanian emigrants in the main destination countries and non-migrant citizens. In total, 2358 Lithuanian emigrants residing in four destination countries (the United Kingdom, Ireland, Norway and Germany) and 598 non-migrants but willing to migrate citizens of Lithuania were explored. The results revealed statistical differences between the values of the respondents living in different countries. Research insights could be useful for managers to better understand their foreign employees, focusing on the changing values, which could finally enable them to integrate and perform better in the organization.

Keywords: *values, non-migrant citizens, emigrants, Lithuania.*

Introduction

Global changes and developments increased the international demand for skilled and specialized labor (Fernando and Cohen, 2016). Millions of people work abroad every year resulting from migration, expatriation, or short overseas assignments. Therefore, finding a skilled, specialized foreigner in an organization is no longer exceptional (Dang *et al.,* 2020). The flexibility of the labor market in the European Union and the Schengen area has led to increased internal migration in these regions (for example, 1.9 million people who previously resided in one EU member state migrated to another EU member state in 2017 (Eurostat, 2020)).

When people migrate, they move between societies that can have different value systems (Fischer and Schwartz, 2011). Therefore, the value differences between locals and migrants could influence the different challenges at work and in the daily life of migrants. However, Bhugra (2004) points out that it does not matter what migration reasons are and when individuals migrate abroad for economic, political, or educational purposes, their cultural and ethnic identity is likely to change. When reviewing previous studies of migration values and their changes, we could highlight some research directions. The first group of authors (e.g., Alba & Nee, 2009; Bardi *et al.,* 2014; Leong, 2013; Lönnqvist *et al.,* 2011, 2013; Rudnev, 2014; Tartakovsky, 2009) have investigated value changes and provided insights on how the values of immigrants change in the process of immigration, and what value system immigrants hold after some years of life in the new country. Others (e.g. Bobowik *et al.*, 2014; Kumpikaitė-Valiūnienė *et al.*, 2020; Tartakovsky *et al.*, 2017) have compared migrants with the non-migrant population in the destination country or their country of origin. Kumpikaitė-Valiūnienė *et al.* (2021) highlighted that values statistically differ between people who have migration experience and intention to migrate in relation to citizens who do not have such experience or intention to move.

Due to the different cultural backgrounds and values, international employees working in an organization influence the working relationship within the organization (Perlstein & Ciuk, 2019; Kim *et al.,* 2018), and the organization faces new challenges in managing multinational teams of employees. Moreover, it should be noted that international employees look for a job in a foreign country and they work not only for multinational organizations but also for local ones (Makkonen, 2016), which have less experience working with international employees and cultural differences. Therefore, it shows the importance of international employee management issues including research on their values in various companies.

In this chapter, our aim is to explore how values of one-nation emigrants differ in different destination countries in relation to values of non-migrated citizens in the country of origin. To achieve the aim, we attempt to apply the Schwartz Value Survey instrument (Schwartz, 1992). We took an example of Lithuania, which is known as one of the most emigrating countries in the European Union (Kumpikaitė-Valiūnienė, 2021) and lost its every sixth citizen in 1990-2018 (Migration in numbers, 2020). We explored not-migratory Lithuanians and emigrants who moved to the four main destination countries: the United Kingdom, Ireland, Germany, and Norway for our study.

Theoretical Background

Values in the Context of Migration

By analyzing the values in relation to migration, some previous studies are important to mention. Lönnqvist *et al.* (2011) conducted a longitudinal study with around 19 months between measurement points exploring Ingrian–Finnish migrants from Russia. The results revealed the increased importance of the values of *universalism* and *security* and the decreased importance of the values of *achievement* and *power* for migrants from Russia. However, their (Lönnqvist et al., 2013) follow-up study after two years of migration identified that *universalism* and *security* values were on the decline and importance of *achievement* increased. Other study by Rudnev (2014) highlighted that the values of migrants correspond better to values that are common in the destination country than values widespread in the country of origin. Moreover, Leong (2013) asserts that value similarity is one of the most important signs of immigrant acculturation. All these results demonstrate that the time spent in the destination country and its culture have an impact on changes of values of migrants.

Other group of studies (e.g. Bobowik *et al.*, 2014; Kumpikaitė-Valiūnienė *et al.* 2021; Tartakovsky *et al.*, 2017) were looking at value differences among migrants and non-migrants. Tartakovsky *et al.* (2017) found that migrants provide higher importance to *power* and *security*, and lower to *universalism*, *benevolence*, and *self-*

direction than non-migrants. Kumpikaitė-Valiūnienė *et al*. (2021) compared migrants in relation to the non-migrant population. They found that *universalism* is more important whereas *security* and *achievement* are less important for migrants than for non-migrants in the country of origin. The findings of the reviewed studies reveal that the values differ between migrants and non-migrants in the country of origin and in the destination country. Therefore, seeking to research deeper the value differences of non-migrant Lithuanians and Lithuanian emigrants in the different destination countries, we formulated the following research question:

RQ: How do individual values of migrants differ in relation to the main destination countries and to non-migrant citizens?

Method

The Context of Lithuania and the Main Destination Countries

Lithuania is a former Soviet republic that gained its independence in 1990 and joined the European Union in 2004. It could be highlighted as one of the most suffering from emigration countries in the EU. We could observe changes in the destination for migration countries after Lithuanian independence starting from 1990. At first, the United States was the most attractive destination country for Lithuanians. It remained a Western dream country, as it was before World War II (Kumpikaitė-Valiūnienė & Žičkutė, 2017). Germany and the UK were other attractive countries. They were preferred due to their destination, language issues, and economic development. During the Soviet regime, Lithuanians used to study English or German as the second foreign language. Therefore, it was easier to go there because of the possibility to communicate. When Lithuania joined the European Union in 2004, the United Kingdom became number one as a destination country for Lithuanians due to legality, distance and expenses. This situation remained until 2017 when everyone who wanted to leave already have left to the UK. Later, due to the unclear future of Brexit, the UK started losing its attractiveness (Kumpikaitė-Valiūnienė, 2019). On the other hand, the USA lost its popularity after 2004. Moreover, the attractiveness of Scandinavian countries came into focus after 2004. It could be noted that during 2010-2019, the largest number of emigrants left to the UK, Ireland, Norway, Germany, Russia, the USA, Spain, Denmark, Sweden, and the Netherlands (Migration in numbers, 2020).

Summarizing statistics of emigrants from Lithuania in 1990-2019, these main destination countries could be highlighted: the UK, Ireland, Germany, Norway, and the USA.

Research Design

The selection of countries was based on the amount of data available for analysis. The country was selected if the number of respondents living in the country was 100 or more. Therefore, for the analysis of the results, we selected four of the most frequent destination countries for emigration from Lithuania, namely the United Kingdom, Ireland, Norway, and Germany.

Sampling Procedure

Sampling was carried out using a convenient sampling method, as long as other methods were at risk of a commonly low response rate. Lithuanians living in foreign countries were asked online (via emails, via personal contacts with local Lithuanian communities, via social networks, etc.) to participate in the survey. The most frequent destinations for emigration from Lithuania were identified and selected for the investigation, namely the United Kingdom, Ireland, Norway and Germany. In addition, Lithuanian respondents were also included in the research for the comparison of values.

Sample Description

The total sample consisted of 2358 respondents, 598 of them living in Lithuania (20.2% of the total sample), 1219 – in the United Kingdom (41.2%), 600 – in Norway (20.3%), 294 – in Germany (9.9%) and 245 – in Ireland (8.3%). The majority of the total sample (74.4%) and subsamples in each country were women (from 70% in Norway to 86.1% in Ireland).

Measures

Main concepts. For the measurement of values, the Schwartz set of 56 values was used. According to Schwartz and Bilsky (1987), the primary 11 types of values that distinguish cultures are: 1) *self-direction*, 2) *stimulation*, 3) *hedonism*, 4) *achievement*, 5) *power*, 6) *security*, 7) *conformity*, 8) *tradition*, 9) *benevolence*, 10) *universalism* and 11) s*pirituality*.

The original 8-point Likert scale (where '-1' means 'opposed to my values', '0' means 'not important' with the following growing importance up to '7' with the meaning of 'supreme important') by

Schwartz was used for coding. Following Schwartz theory (1992), 56 values were grouped into 11 value groups, and each of them was used for comparison.

Demographic variables. The country of real (not officially declared) residence was a demographic variable used for comparison analysis. The countries were coded according to the number of respondents from a particular country. Willing to migrate Lithuanians were coded as 1, the United Kingdom was coded as 2, Norway was coded as 3, Germany was coded as 4 and Ireland was coded as 5.

Data Analysis Methods

Statistical analysis was performed using SPSS software. The respondents were divided into groups according to the country of their residence for descriptive statistics of the sample. Comparison analysis of the values of the respondents was conducted using one-way ANOVA test, based on the analysis of variance. Furthermore, the variance homogeneity was completed for POST-HOC multiple comparison. The Tamhane POST-HOC analysis was used if a significant difference in variance was found, while Bonferroni POST-HOC analysis was used if there was no significant difference in variance was found.

Results

Comparison of Values

Security was the most important value for non-migrant Lithuanians (Table 4.1). Regarding the rank of *benevolence*, it was the highest in the case of the UK and Ireland. The second rank in Norway was the same as by non-migrants in Lithuania. *Benevolence* was ranked third one in Germany and in Lithuania by non-migrants. Non-migrant Lithuanians value *benevolence* significantly less than emigrants, living in the top destination countries ($F = 22.664$, $df = 5$, $p < 0.001$, MD (LT1) = [-0.669;-0.464], $p < 0.001$).

Self-direction was another value, important to Lithuanians. It was ranked the highest by the respondents in Germany and Norway and the second highest in the UK and Ireland. However, it was seen as less important for non-migrant Lithuanians and was ranked as the fourth. This value was significantly different from the respondents from other countries ($F = 32.062$, $df = 5$, $p < 0.001$, MD (LT1) = [-

0.703;-0.572], $p < 0.001$).

Stimulation was the second-ranked value by non-migrant respondents in Lithuania, while in all other respondent groups it was only the fifth one.

Other differences in values were related with differences between non-migrant and emigrated Lithuanians in the case of *achievement*, *hedonism*, and *universalism. Achievement* was ranked higher by emigrants than by non-migrant respondents. *The achievement* was also significantly higher ranked by emigrants than by the non-migrants ($F = 15.140$, $df = 5$, $p < 0.001$, MD = [-0.493;-0.348], $p < 0.001$) but with one exception. In case of *hedonism*, the non-migrant respondents valued it more than emigrants. Significant differences were found between non-migrant respondents and all other groups of respondents ($F = 6.343$, $df = 5$, $p < 0.001$, MD = [0.265;0.511], $p < 0.05$). Furthermore, non-migrant respondents scored *universalism* significantly lower than respondents from top destination countries (($F = 30.534$, $df = 5$, $p < 0.001$, MD = [-0.802;-0.644], $p < 0.001$).

The differences between the groups of respondents were also confirmed for *conformity* ($F = 10.942$, $df = 5$, $p < 0.001$), and *spirituality* ($F = 3.238$, $df = 5$, $p = 0.006$). When the ranks of *conformity* and *spirituality* were found to be almost similar, some significant differences were observed. Respondents, willing to emigrate, scored *conformity* significantly lower than all other groups of respondents (MD = [-0.629;-286], $p < 0.01$). Furthermore, respondents willing to migrate scored *spirituality* significantly lower than respondents from Ireland (MD = -0.369, $p = 0.013$).

Finally, *power* and *tradition* were the last values ranked by all the groups of respondents. However, the difference in score was significant only for *tradition* ($F = 12.694$, $df = 5$, $p < 0.001$). Respondents who wanted to migrate scored *tradition* lower than respondents in Norway, the UK, and Ireland (MD = -0.782;-0.398], $p < 0.001$). Furthermore, *tradition* was found to be more important for respondents in Ireland than to the respondents in Germany (MD = 0.450, $p = 0.032$) or Norway (MD = 0.384, $p = 0.029$).

Comparison of the values of respondents from Lithuania and abroad showed the differences in most of values except *power*. In addition, all values, except *hedonism* and *spirituality* were scored lower by non-migrants than by respondents of the top destination countries.

Together, these results provide additional insights for international companies on the importance of values and trigger factors on emigrants' which will be reviewed in the discussion part.

Discussion

The results demonstrate differences in values in the main destination countries of Lithuanian emigrants. They valued *security* and *stimulation* before emigration the most. However, after emigration *security* was in the third position in Norway and the UK and in the fourth position in Ireland and Germany. At the same time, *stimulation* became a value number five in all destination countries. These results are in agreement with the findings of Lönnqvist *et al.* (2011), which identified that values change after emigration.

We could see that Lithuanians after emigration developed different values in different countries. They started to value *self-direction* in Germany and Norway and *benevolence* in the UK and Ireland the most, while *benevolence* was in the third place and *self-direction* in the fourth for respondents willing to migrate.

Ralston *et al.* (2011) conducted a study across 50 societies exploring 10 groups of universal values, excluding *spirituality*. The study included the UK and Germany and showed that the value order of the UK citizens was 1) *universalism*, 2) *tradition*, 3) b*enevolence*, 4) *self-direction*, 5) *hedonism*, 6) *achievement*, 7) *security*, 8) *conformity*, 9) *stimulation* and 10) *power* and values of Germans were as following: 1) *benevolence*, 2) *self-direction*, 3) *achievement*, 4) *hedonism*, 5) *security*, 6) *universalism*, 7) *conformity*, 8) *stimulation*, 9) *power* and 10) *tradition*.

Taking into account the previous findings that the values of migrants correspond better to values that are common in the destination country (e.g., Rudnev, 2014), we compared the values of the UK and Norway with the values of Lithuanian migrants there. We could highlight that the values of migrants are not the same as those of locals in the destination countries. However, we could reveal, as already noted before, that values of *self-direction*, *benevolence*, and *universalism* were more developed as for non-migrant Lithuanians.

Table 4.1

Value ranks of Lithuanian non-migrants and emigrants

Rank	Non-migrants willing to emigrate citizens		Lithuanian emigrants in ...							
			... Germany		... Norway		... United Kingdom		... Ireland	
	Values	Mean	Values	Mean	Values	Mean	Values	Mean	Values	Mean
1	Security	5.11	Self-direction	5.60	Self-direction	5.69	Benevolence	5.58	Benevolence	5.70
2	Stimulation	5.07	Universalism	5.51	Benevolence	5.55	Self-direction	5.56	Self-direction	5.57
3	Benevolence	5.03	Benevolence	5.50	Security	5.48	Security	5.41	Universalism	5.55
4	Self-direction	4.98	Security	5.48	Universalism	5.41	Universalism	5.39	Security	5.53
5	Hedonism	4.97	Stimulation	5.21	Stimulation	5.32	Stimulation	5.29	Stimulation	5.31
6	Universalism	4.75	Achievement	4.94	Achievement	5.02	Achievement	5.06	Achievement	5.09
7	Achievement	4.59	Conformity	4.76	Conformity	4.76	Conformity	4.84	Conformity	5.00
8	Conformity	4.38	Spirituality	4.54	Hedonism	4.51	Spirituality	4.52	Spirituality	4.75
9	Spirituality	4.38	Hedonism	4.46	Spirituality	4.50	Hedonism	4.51	Hedonism	4.53
10	Power	4.01	Tradition	3.94	Power	4.07	Tradition	4.14	Tradition	4.38
11	Tradition	3.24	Power	3.87	Tradition	4.00	Power	3.98	Power	4.07

However, some values, especially *traditions* are valued lower, particular in the case of the UK (Lithuanian migrants –number 10, the UK – number 2) This has a sense as *traditions* are valued the least by Lithuanians and migrants even start to value more their traditions when they move abroad as it demonstrated in the cases of Germany, the UK, and Ireland (when values of *tradition* from the last 11th place moved to the 10th). *Stimulation* for Lithuanians became not so important and from the 2nd place fell down into the 5th place in all destination countries. However, citizens of the UK and Germany value *stimulation* less (the 9th place in the UK and 8th in Germany).

Summarizing value analysis, we could note that even though values of migrants change, they still remain different from the host country and, therefore, managers should pay attention to these value differences among employees and see if they fit into the organizational values. This is especially important for international companies, which have employees of different nationalities. Rudnev *et al.* (2018) highlight that lifelong socialization plays the most important role in the value formation process of migrants who experienced an extreme change of their sociocultural and economic conditions. Therefore, fostering socialization at the organizational level and outside with other international employees and host country nationals, could help reach values similarity, better adjustment and performance.

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MIGRATION PROCESSES AND ENSURING LABOR POTENTIAL OF THE COUNTRY IN CRISIS CONDITIONS

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Abstract
A characteristic feature of the development of the international community and the world economy in recent decades is the consolidation of each national economy's respective place and role in the international division of labor, which largely depends on the level of development in the country and the conditions for using the labor potential. The formation and use of labor potential is carried out under the influence of a wide range of socio-economic, national-cultural, historical-educational and other factors that have specific effects at different stages of the economic cycle. The specified factors have special manifestations in the crisis periods of the development cycle, which have the nature of both direct economic recession and other manifestations of the economic crisis, and are related to the indirect influence of other crisis phenomena in the political, national-cultural, religious and other spheres. The purpose of this work is to consider the impact on the demographic situation in the country as a whole, as well as on the formation and development of its labor potential, migration processes occurring in the conditions of the military-political and economic crisis in Ukraine.
The article examines the essence of the labor potential, its levels and features of the components that make it up, as well as the influence of migration processes on the quantitative and qualitative characteristics of the labor potential. The peculiarities of the causes of existing migration processes in Ukraine in the conditions of economic crisis, political upheavals and war, as well as the consequences of internal and external migration from the point of view of its impact on the formation of labor potential are given. Certain courses of action regarding the restoration of the labor potential on the way to overcoming the effects of the crisis in the post-war period are proposed.

Keywords: *labor market, labor potential, quantitative and qualitative characteristics of labor potential, migration, internal and external migration, labor migration.*

Introduction

Ukraine, in terms of its territory and population, is one of the largest countries in Europe, it is a country with significant economic potential, which is confirmed both thanks to its geographical location and existing industrial complexes, the agricultural sector, infrastructure and taking into account various natural and climatic, resource, its demographic characteristics and even historical features of the country's development. The mentioned advantages of Ukraine were largely devalued as a result of the annexation and occupation of part of its territory in 2014, as well as a result of significant destruction of industrial, agricultural, construction, transport and energy infrastructure, as well as social objects as a result aggression against it by Russia from the beginning of 2022. The restoration of the country's economy in the post-war period and its further integration into the world economic system requires the reconstruction of both its resource and processing and labor potential, with the determination and further consolidation of the national economy's appropriate place and role in the international division of labor and the world economy.

Achieving the stated goal largely depends on the availability of the necessary labor resources in the country with the appropriate level of education and professional qualification structure, as well as on the ability to ensure the development of these available resources to ensure the successful functioning of the country's economy in general, as well as increasing the effective functioning of specific business structures, in particular. At the same time, it is necessary to create and successfully use effective mechanisms for the realization of these opportunities.

It is the collective social ability to work of the country's residents of working age who, based on certain characteristics (health status, psychophysiological features, educational, professional and intellectual level, socio-ethnic mentality, etc.), who are able and intend to work, determines the level potentially-possible efficiency of this society from the point of view of the use of labor resources in this country or its *labor potential*.

The depth of the structuring of the labor potential makes it possible to consider it from the point of view of a certain *parameter of potential opportunities* for the existence and development of the country's economy as a whole, which is determined by continuous changes in both the quantitative and qualitative composition of the employees themselves, as well as the applied technologies and means of production. In addition, the labor potential of employees and their competitiveness are essential components of intangible assets that form a significant part of both the value of an individual business and the economy of a certain region and the country as a whole.

The quantitative aspect of a country's human labor resources, which determines its labor potential, depends on many factors, among which one of the important ones is population migration — the mechanical movement of people across the borders of certain territories with a change of place of residence permanently, for a more or less long time, or with by regularly returning to it. The movement of able-bodied persons for the purpose of temporary employment constitutes *labor migration*, which largely determines the state of the labor market (both in a separate region and the country as a whole, and internationally) and its development trends.

Globalization processes, which expand the borders of national economies, creating free space for the movement of labor within the world, have a special influence on the modern international labor market. The steadily growing trend of international labor migration contributes to the need to study its consequences in both socio-economic and political transformation.

Many EU member states in general, as well as Ukraine, in particular, in connection with military events and political tension and economic crisis in certain countries of Central Asia, the Middle East and North Africa and others, are experiencing the largest migration crisis since the Second World War, which especially intensified in connection with the war in Ukraine. An unprecedented number of forced migrants, including from Ukraine, as a result of military operations on its territory, flooded the countries of Europe, which requires special attention to be paid to the study of problems related to migration processes by both domestic and European researchers.

Considering that the situation with the migration of the population of Ukraine is catastrophic and, without exaggeration, poses a threat to the national security of the country, one of the most urgent areas of research of socio-economic systems in order to ensure the existence and possible development in the future of both the economy of the country as a whole and its labor potential, in particular, is to identify the problems of migration processes and ways to create conditions for Ukrainians to return home.

Materials and Methods

The study of problematic aspects of the labor market as a whole, the formation and development of labor potential, the use of human resources and increasing their competitiveness, are devoted to the work of such famous Ukrainian scientists as O. Grishnova, G. Dmitrenko, T. Zayets, O. Kolot, I. Kurylo, E. Libanova, L. Lisogor, I. Petrova, M. Romanyuk and many others. In the study of migration processes in Ukraine, an important place is occupied by the works of scientists of the Institute of Demography and Social Research named after the National Academy of Sciences of Ukraine, headed by its director E. Libanova, as well as the works of such domestic scientists as V. Borshcheskyi, A. Hayuduky, S. Doroguntsov, A. Zagrobska , O. Malinovska, O. Piskun, S. Stetsenko, A. Filipenko, and others.

The ongoing processes of world globalization significantly contribute to the evolution of migration processes by forming new migration flows, accelerating the pace of labor force localization, etc. From the point of view of the formation and development of the labor potential of a separate national country, these processes have both positive and negative consequences, namely: **a)** on the one hand, migration comprehensively destroys cultural, linguistic, ethnic and traditional borders, promotes multicultural development and forms a new type of personality – people of multimodal transnationality who perfectly assimilate into the new space and make their own adjustments to its existence; **b)** on the other hand, the development of migration processes creates negative factors in the economies of recipient countries, which consider this phenomenon exclusively as a danger to the economy.

The purpose of this work is to consider the influence of migration processes taking place in the conditions of the military-political and economic crisis on ensuring the formation of competitive labor potential of Ukraine.

Considering the labor potential of the country as the presence of a certain number of people that society has at its disposal at a given level of development of science and technology, who have a certain set of different qualities that determine their maximum possible quantity and quality of work, it is necessary to divide the labor potential: **a)** of a specific person; **b)** collective of united employees (business structures); **c)** of a separate region and the country in general.

At the same time, the labor potential of an individual (certain personality) is the starting unit and the basic basis for the formation of the labor potentials of other, above-mentioned structural levels. Taking into account that the labor potential of each individual employee is a complex multifaceted composition that includes a certain number of components, there is a certain difficulty in researching the problems of formation and development of labor potential at its various levels, as well as in the practical application of the results of such studies by spreading them to more a large collection.

In particular, among the most important components of an employee's labor potential, which deserve special attention during his research, it is possible to note such as: **a)** psychophysiological components of the employee's work potential, which determine his abilities and inclinations (advantages), his health, work capacity, endurance, type of nervous system, etc.; **b)** qualification components of the employee's labor potential – characterize the volume, depth and versatility of general and special knowledge in a specific activity, as well as labor skills, abilities and practical experience in this activity. This component of labor potential determines the ability of a specific employee both to perform work of a certain content and complexity, and further improvement in this type of labor activity; **c)** social components of the employee's labor potential, which characterize the level of social consciousness, civic self-awareness and social maturity, which determine the degree of assimilation by the employee of the norms of attitude to work, value guidelines accepted by the team and society as a whole, as well as the interests, needs and requests of participants in labor processes taking into account the existing hierarchy of human needs.

Undoubtedly, the demarcation of individual components of an employee's labor potential is not only theoretical, but also of very important practical importance, because the effectiveness and efficiency of employees' work largely depends on the degree of their mutual coordination in the development of each specific employee.

The labor potential of the collective, the region and the country as a whole (social labor potential) accumulates and synthesizes the collective abilities for socially useful activities of the working population. This potential is a concrete form of materialization of the human factor of work and serves as an indicator of the level of development and limits of creative activity of workers in society.

Thus, the labor potential of society (country) must be considered both quantitatively and qualitatively, because it is the rational combination of quantitative and qualitative measurement (estimation) of labor potential that determines its competitiveness - the ability to withstand competition with similar entities.

In quantitative terms, the labor potential of a society is the ability of this society to attract different sections of the working population (of different sexes, ages, national-cultural and religious preferences, etc.) living on its territory to public work. *In qualitative terms*, the labor potential of society characterizes the real opportunities for the realization through participation in socially useful work of all the diversity of personal abilities and qualities: knowledge, abilities and skills acquired by people in the process of education, preparation for work, direct labor activity, retraining and advanced training.

One of the essential factors affecting both the quantitative and qualitative components of the labor potential of the country as a whole, as well as its individual regions, territorial associations of communities and certain labor groups, in particular, are migration processes that take place in the form of *internal and external migration*.

Results and Discussion

The starting point for characterizing both quantitative indicators of the labor potential in general and migration processes, in particular. there is the state of the total population of the object under investigation – a separate labor team, a certain region, the country as a whole.

According to the data of the last population census of Ukraine, the population of the country was more than 45 million people at that time (2001 year), which is almost 7 million fewer people than according to the data of the previous population census (1989 year). (Libanova, 2016, p. 114-116). According to the estimates of a number of labor market researchers based on data contained in the reports of 6 central executive bodies of Ukraine (namely, the ministries of social policy, education and science, health care, justice, defense and internal affairs) as of the end of 2012 year (the beginning of Russia's aggressive actions aimed at the annexation and occupation of part of the territory of Ukraine) the country's population was roughly estimated at 35 million people (Lisogor, 2012). Undoubtedly, using the specified information in the form of final integration indicators of the characteristics of the total population is, unfortunately, not enough, because it highlights only the information that is within the competences of these bodies, and it is necessary to supplement it, but it sufficiently fully characterizes certain aspects of the labor potential of the country.

Against the background of such a significant decrease in the overall quantitative indicators of the labor potential, as well as taking into account the fact that as of January 1, 2022, according to the State Statistics Committee of Ukraine, there were more than 10.8 million people of working age in the country who received pension provision and were not involved in the economy, conducting research and developing practical recommendations on the processes of both internal and external migration taking place in the country is of particular importance.

The main reasons for *internal migration* in Ukraine, according to the results of the study in the period 2015-2021, were: **a)** unequal conditions and opportunities for the use of labor in different regions of the country, which led to a difference in the standard of living; **b)** differences in changes in the content of labor activity and in the labor field as a whole; **c)** increase in some regions of social tension, etc. The military crisis changed the character of migration processes from individual to group, bringing to the fore in these processes security aspects of life preservation, destruction of the social sphere and the economy of entire regions, etc. Thus, according to the assessment of the International Organization for Migration, as of the beginning of June 2022, the number of internally displaced persons in Ukraine amounted to more than 7 million people, and in the temporarily occupied territories may reach at least 1.5 million people (Hayduky, 2021).

However, if the problems of the impact of internal labor migration on the labor potential can be solved by strengthening the regulatory and stimulating functions of the state, it is much more difficult to deal with the impact of *international labor migration* on the competitiveness of the labor potential of Ukraine, the pace of which, as a result of certain political processes and the military crisis in Ukraine, is significantly have grown.

So, for example, before the political crisis of 2013-2014 and the annexation and occupation of part of the territory of Ukraine, taking into account "pendulum" and irregular migration, the number of Ukrainian labor migrants abroad was estimated at about 2.25 million people (record places among the countries where migration flows were directed Ukraine was occupied by Russia and Poland) (Piontkivska, 2018). With the adoption of a visa-free regime with many EU countries, the number of Ukrainians subject to migration has increased significantly, which has led to a certain shortage of workers in certain specialties and even the aging of the nation. In particular, as of 2021, about 3 million permanent workers and up to 7 million seasonal workers came to Poland alone, the second most popular place after Poland was occupied by the Czech Republic (from 140 to 180 thousand permanent workers), and Spain also became popular, Italy, Portugal, Germany, Finland, Great Britain and Sweden) (Filipenko, 2021).

According to the statistics of the Office of the United Nations High Commissioner for Refugees, as of July 19, 2022, 9,567,033 people left Ukraine as a result of the war on the territory of Ukraine. In addition, cross-border movements, which may have a pendulum character and cannot be considered confirmation of sustainable return, amounted to about 3.8 million people. At the same time, research conducted on the basis of the *4refugees.info* platform shows that more than 43% of surveyed migrants from Ukraine in EU countries are interested in the availability of courses for studying and deepening knowledge of the language of the host country, schools and kindergartens, as well as places for work and employment on a permanent basis, that is, they intend to stay permanently in this country. For comparison, according to similar studies conducted on the same platform as early as May 2022, the share of migrants with the intention to stay in the host country was 20% lower than at the end of the year (Starodubov, 2022).

Thus, Ukraine is actually losing representatives of the next generation due to the fact that there is no return of long-term migrants, and the tendency of family members of successful long-term migrants to leave abroad for the purpose of family reunification is increasing. Undoubtedly, the outflow of a certain part of the population from their permanent places of residence and their loss of permanent work, taking into account the fact that being in war conditions both individual citizens and businesses as a whole are in a state of shock, significantly affect both the economy of the country in general and the business activity and its labor potential, in particular.

Taking into account the specifics of the labor market of Ukraine, a characteristic feature of which is the focus on the formation of professional and qualification structures and their development within the business, the further formation and development of labor potential with the destruction of business in the country and the strengthening of external migration becomes problematic. Thus, in the conditions of overcoming the consequences of the military-political and economic crisis, the migration crisis creates a number of additional challenges for the state and society from the point of view of the restoration and development of both labor resources in general and labor potential, in particular.

Ensuring the primary needs of the population and creating conditions for people to return home (to the country as a whole and its individual regions, in particular) should become the main priority of state policy in the field of managing social and economic systems in post-war conditions, taking into account the existing globalization challenges. Such challenges, of course, in addition to security issues, include ensuring people’s daily needs (housing, food, water, heat, light, fuel, etc.) and creating workplaces with attractive employment conditions. At the same time, in the conditions of a large share of uncertainty and risks for the further state and prospects for the development of the country’s economy in general and its individual socio-economic systems, the function of the main driver of the economy and a beacon for the investment policy of business to solve the priority problems of the population and the formation of labor potential should be performed by the state with involving the resources of international organizations and partners.

First of all, it is necessary to ensure the functioning of certain safeguards that will avoid problems with the use of such aid, for example from the European Investment Bank and other organizations and donor countries that were in the pre-war period. The purpose of using such support should be to improve in a short time both the indicators of private consumption and the improvement of indicators regarding the volumes of production of goods and services.

The starting point for restoring the country’s economy and improving its investment environment (climate) after the ceasefire in order to restore jobs and create new ones can be a balanced placement of a state order, supported by both the state and partner countries, and international financial and grant organizations.

State authorities (both at the legislative level and at the level of executive bodies of state administration and local self-government) must provide signals to businesses (regardless of the forms of ownership and types of activities) regarding the availability of new opportunities for its existence and development, as well as reducing the level of threats from on the part of the factors of the external environment. These signals, taking into account the destruction of traditional logistics chains and the significant limitation of export opportunities of business in Ukraine, are important for both small and medium-sized and large businesses from the point of view of creating favorable working conditions at existing and newly created workplaces.

In our opinion, this will allow not only to slow down the decrease in the quantitative and qualitative characteristics of the labor potential of the country, as a whole, but at the same time, it will allow to develop this potential by creating a certain foundation for the return in the future of able-bodied persons who left the country in search of security and better luck.

Conclusions

Migration processes, from the point of view of ensuring the formation of labor potential and its further development, like any other phenomenon, have not only threats, but also create certain opportunities.

The negative effects of migration processes on the labor potential are primarily related to its quantitative aspects and are based, first of all, on the loss of the country's human potential and, as a result, the decline of certain sectors of the economy that have lost labor, as well as on the devaluation of traditional family values and the decline of national identical culture in general.

At the same time, labor migration *creates certain opportunities* for the development of qualitative characteristics of the labor potential due to the acquisition by migrants of new knowledge, abilities, skills and work experience, simultaneously with the reduction of tension on the labor market, together with the inflow of foreign currency into the country through transfers of Ukrainian migrants, additional opportunities for development of the service sector and education, developing conditions for integration into the new socio-cultural space, etc.

Developing the country's economy and creating new jobs with attractive working conditions for the return of Ukrainian labor migrants is, of course, a thorough but long-term strategy for the development of labor potential. But the primary task on this path should be the creation of socio-economic and political-cultural conditions that are able to stop the migration of highly qualified specialists and contribute to the adaptation of the country's economy to its orientation towards the growth of the importance of creative industries and the innovative sphere, which will gradually transform the country's economy to the transition to a new level - information economy of knowledge. For this, state and interested business investments are needed in both formal and informal training structures, systems and practices for the formation of labor potential, its implementation and the creation of human capital in the country.

In the medium-term period, it is possible to implement the strategy of formation of labor potential and its development in such areas as: **a)** providing an opportunity to realize gains from labor migration (knowledge, abilities, skills, work experience accumulated during the period of migration); **b)** stimulating the development of the state together with those who return by creating appropriate conditions and providing them with certain benefits, loans, etc.; **c)** formation of a favorable climate for the development of small and medium-sized businesses as one of the significant aspirations of migrants accumulating capital, etc.

In our opinion, it should be important to create a comprehensive system of indicators for assessing the level of both human resources in general and labor potential in particular. In this system, there should be a place for indicators that reflect the state of labor resources and their potential, as well as an assessment of conditions and factors that influence their formation and development.

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PECULIARITIES OF TRAINING OF SPECIALISTS FOR THE FOOD INDUSTRY IN THE SYSTEM OF HIGHER EDUCATION

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Abstract
The peculiarities of training of specialists for the food industry of Ukraine in the focus of qualitative results are revealed. The list of curricula for the training of specialists in specialty 181 "Food technology" is outlined. The study of the institutional environment reveals the fact that the higher education services in the examined industry are provided by institutions specializing in food technology, institutions specializing in related industries (trade, hotel and restaurant business, agriculture, biotechnology, medicine, and recreation), and those of general profile – classical and technical higher educational institutions, which have food technology among their specialties. This creates some problems in the training of specialists and requires the definition of priorities for the transformation of quantitative results into qualitative ones. For this purpose, it is essential for higher educational institutions to focus on niche economic activity, improve the infrastructure of practical and laboratory work, and introduce double-degree programs in the training of specialists.

Keywords: *food industry specialists, educational programs, higher education system, specialization of institutions.*

Introduction

Training of personnel for the food industry of Ukraine at the level of *higher education* is determined by the specifics of goals and tasks of the given educational level. To a great extent, it is revealed by the *requirements to food specialists in Ukraine*, which can differ depending on position and qualification, yet, in general, they provide that food technology specialists should correspond to the following criteria:

– have a university degree in food technology, biology, chemistry, economics, or other related fields;

– know food production technologies, food legislation, and food quality and safety control;

– know how to work with specialized equipment and software used in the food industry;

– know how to work in a team and demonstrate qualities like responsibility, goal orientation, and observance of established deadlines;

– know foreign languages, especially English, at a level sufficient to work with international standards and documents;

– have experience of working in the food industry if applying for management positions;

– know the principles of efficient production management, including accounting, production planning, and personnel management.

Materials and Methods

The information base of the study includes the legal framework, Internet sources on the development of education, and studies of many Ukrainian researchers, such as O. Hrynkevych *et al.* (2020), I. Irtyshcheva *et al.* (2021), S. Panchyshyn *et al.* (2020), O. Panukhnyk (2019a, 2019b), N. Popadynets (2018a, 2018b) etc. However, the issues of education development in terms of specialists in the food industry need additional consideration.

Therefore, theoretical knowledge in education should be systematized, and the peculiarities of training of specialists in the food industry in the system of higher education should be determined. The methods of analysis, synthesis, comparison, grouping, and graphical and tabular analysis are used in the process of research.

Results and Discussion

In Ukraine, the food industry specialists at the level of higher education are trained according to the educational standards for three levels: bachelor, master, and scientific-educational (Ministry of education and Science of Ukraine, 2018a, 2018b).

Tables 4.2-4.4 show the parameters of the state-funded training of specialists in specialty 181 across education-qualification levels.

Table 4.2

State-funded training of specialists in education-qualification level of junior bachelor in specialty 181 "Food technology"

Year	Graduates in specialty 181, persons		Graduates in field of knowledge 18, persons		Graduates total	Percentage of 181 graduates in 18, %	Percentage of 181 graduates in total, %
	total	including full-time students	total	including full-time students			
Graduates							
2022	11	11	16	16	389		

Source: (Verhovna Rada of Ukraine, 2022)

Table 4.3

State-funded training of specialists in education-qualification level of bachelor in specialty 181 "Food technology"

Year	Graduates in specialty 181, persons		Graduates in field of knowledge 18, persons		Graduates total	Percentage of 181 graduates in 18, %	Percentage of 181 graduates in total, %
	total	including full-time students	total	including full-time students			
Graduates							
2022	1089	990	2246	2030	72076	48.5	1.5

Source: (Verhovna Rada of Ukraine, 2022)

Training of specialists in specialty 181 combines various educational programs. The analysis of the operation of educational institutions shows the main of them:

– bachelors in "Technology of fermentation and winemaking products", "Technology of food, beverages, and mineral and drinking water", "Technology and management of the dairy business", "Technology of oil and fat products and cosmetics", "Technological expertise and safety of food", "Technology of meat storage, canning, and processing", "Technology of dairy storage, canning, and processing", "Technology of fish and seafood", "Technology of the restaurant business", "Restaurant technology of healthy diet";

– masters in technology specialization of bachelor (specified above) and "Innovation technology of the restaurant business" and "Healthy diet industry".

Table 4.4

State-funded training of specialists in education-qualification level of master based on the education-qualification level of bachelor in specialty 181 "Food technology"

<table>
<tr><th rowspan="2">Year</th><th colspan="2">Graduates in specialty 181, persons</th><th colspan="2">Graduates in field of knowledge 18, persons</th><th rowspan="2">Graduates total</th><th rowspan="2">Percentage of 181 graduates in 18, %</th><th rowspan="2">Percentage of 181 graduates in total, %</th></tr>
<tr><th>total</th><th>including full-time students</th><th>total</th><th>including full-time students</th></tr>
<tr><td colspan="8">Graduates</td></tr>
<tr><td>2022</td><td>576</td><td>536</td><td>1291</td><td>1228</td><td>40415</td><td>44,6</td><td>1,4</td></tr>
</table>

Source: (Verhovna Rada of Ukraine, 2022)

Therefore, in addition to the professional component, the focus on innovation, health care, and recreation, which are the defining progressive trends in the food industry of well-developed countries worldwide, can be observed in personnel training.

A number of higher educational institutions in Ukraine train specialists in specialty 181. It is reasonable to divide them into those specialized in the food industry, related industries, and of general profile:

1) higher educational institutions specialized in the food industry: National University of Food Technologies (Kyiv, the leading specialized institution, which is a member of the European Federation of Food Science and Technology); Odesa National Academy of Food Technology; Harkiv State University of Food Technology and Trade;

2) higher educational institutions specialized in related industries: Stepan Gzhytskyi National University of Veterinary Medicine and Biotechnologies of Lviv (Faculty of Food Technology and Biotechnology – Department of Milk and Dairy Technology and Department of Meat, Meat Products, and Oil and Fat Products Technology); National University of Life and Environmental Sciences of Ukraine (Kyiv, Faculty of Food Technology and Agricultural Products Quality Management); Odesa National

University of Technology (Faculty of Innovative Nutrition Technologies, Restaurant and Hotel Business, Faculty of Technology and Commodity Science of Food Products and Food Business, Faculty of Wine and Tourism Business); Poltava State Agrarian University (Faculty of Production Technology and Animal Husbandry Products Processing); Sumy National Agrarian University (Faculty of Food Technologies); Dmytro Motornyi Tavria State Agrotechnological University (Melitopol-Zaporizhzhya, Department of Equipment for Processing and Food Production named after professor F.Yu. Yalpachik, Department of Food Technologies and Hotel and Restaurant Business, Department of Horticulture, Viticulture, and Biochemistry); Herson State Agrarian and Economic University (Faculty of Biology and Technology – Department of Animal Husbandry Production Technology, Department of Agricultural Products Processing and Storage Technology, Department of Food Production Engineering); Donetsk National University of Economics and Trade named after Myhailo Tuhan-Baranovskyi (now in Kryvyi Rih, Faculty of Tourism and Hotel and Restaurant Business);

3) higher educational institutions of general profile: Oles Honchar Dnipro National University (Department of Food Technology); Lviv Polytechnic National University (Institute of Chemistry and Chemical Technologies, Department of Organic Products Technology); National Technical University "Kharkiv Polytechnic Institute" (The Department of Technology of Fats and Fermentation Products); Herson National Technical University (Department of Food Technology), etc.

These institutions form scientific schools and centers for the training of personnel for the food industry. They should be the core of intersectoral complexes of regional development of the food industry with efficient use of the resource capacity of the territories and meeting the needs of the population for qualitative products.

Higher educational institutions training specialists for the food industry combine training in specialty 181 with other relevant specialties. The most important of them are:

– 162 "Biotechnology and Bioengineering": curriculum "Biotechnology and Bioengineering";

– 204 "Animal Husbandry Products Manufacturing and

Processing Technology”;

– 241 “Hotel-Restaurant Business”: curricula “Restaurant Business”, “Recreation Industry”;

– 242 “Tourism”: curriculum “International Tourism”;

– 073 “Management”: curriculum “Financial-Economic and Food Security”;

– 076 “Entrepreneurship, Trade, and Exchange Activity”: curriculum “Commercial Activity, Commodities, and Expertise in Customs Practice”.

Orientation toward niche economic activities is the peculiarity of higher education in the training of specialists for the food industry. Craft and organic production are the most common of them in Ukraine. Their organization requires special knowledge and skills – technological, entrepreneurial, and marketing. Healthy nutrition is another trend. Therefore, some educational institutions in Ukraine offer special curricula and academic disciplines within the framework of training of specialists in specialty 181. Their titles are related to the following directions: production of craft food; basics of nutrition and healthy nutrition technology; ayurvedic nutrition, etc.

The initiatives of the higher educational institutions to introduce new curricula and disciplines confirm their desire to be attractive and competitive in the market of educational services but must be accompanied by the qualitative information-methodological and technical framework.

The presence of appropriate infrastructure for *practical and laboratory work* is another peculiarity of higher educational institutions in the training of specialists. It can be created by:

– equipment of special auditoriums;

– the activity of separate structural units of higher educational institutions specializing in R&D.

For instance, the Problem R&D Laboratory functions in one of the profile institutions – the National University of Food Technology. The Laboratory deals with fundamental and practical problems: chemistry and chemical technology development; life sciences and biotechnology development; rational nature management, perspective technologies of the agriculture and processing industry (National University of Food Technology Laboratory, 2019).

The results of the activity of these laboratories need support and promotion of results. Taking into account Ukrainian realities, the support should include the promotion of laboratories' participation in international grants. It is necessary to involve students in the implementation of grants, which will increase the quality of training and allow the selection of people for further scientific activity and other ways to improve the skills of food industry personnel.

Limited *double-degree programs* for the training of specialists in partnership with international universities is the problematic direction in the activity of higher educational institutions in Ukraine. This direction can be efficient in the context of integration of the Ukrainian educational environment into the European and global ones, growing competitiveness in the market, and partial resistance to external migration losses of youth. In Ukraine, the National University of Food Technology (Kyiv), together with the University of Occupational Safety Management in Katowice (Poland), has the practice of double-degree diploma in food technology. These practices should be promoted by other specialized higher educational institutions, especially taking into account the perspectives of Ukraine's European integration and the need to introduce the best European educational and manufacturing practices.

Conclusions

Therefore, the training of specialists for the food industry of Ukraine has a well-developed institutional environment, much better than at the levels of professional and vocational pre-university education. This ensures the functioning of specialized educational institutions, higher educational institutions specialized in related industries, and general profile higher educational institutions, which include specialty 181 in their curricula.

The transformation of quantitative results into qualitative ones is the perspective of the development of higher education for the food industry. To a great extent, it will be possible if higher educational institutions are involved in the integrated process of personnel training for the food industry and their research-innovation activity.

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EXPLORATORY STUDY ON JOB SATISFACTION OF SELF-INITIATED EXPATRIATES DURING COVID-19 PANDEMIC

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Abstract
The COVID-19 pandemic dramatically changed regular life and work around the world. This study focuses on self-initiated expatriates (SIEs), as they get less support from the organization than other international employees do and seek to explore their job satisfaction during COVID-19. A qualitative study approach was chosen to reach the research's aim and eight interviews with different nationality SIEs residing in different countries during the COVID-19 pandemic were conducted.

Keywords: *self-initiated expatriates, job satisfaction, COVID-19.*

Introduction

The United Nations (2020) announced that 281 million people live in a country other than their native one. The main motivators of expatriates include work and career, lifestyle, studies, romantic relationships and family, and other motivators such as religion or volunteer work (InterNations, 2021). Excluding work and career as one of the main motives for expatriation, it was found that 13% of expatriates are self-initiated and found a job by themselves, 11% were recruited internationally, 10% were assigned expatriates sent by an employer and 2% started their own business (InterNations, 2021).

The COVID-19 pandemic forced employees to change the nature of work and relocate all work to home, which was unusual for many. It increased new work-life challenges, related to working from home, such as dealing with children and working at the same time, etc. (e.g., Adams *et al.*, 2021; Kumpikaitė-Valiūnienė *et al.*, 2021). Moreover, nationwide or regional lockdowns resulted in psychological stress and depression in many people (e.g., Rosa González, 2021; Atalan, 2020). All these issues had a negative impact on the well-being of people, as demonstrated studies by Alves *et al.* (2021) and Satici *et al.* (2020).

Job satisfaction in the context of COVID-19 was mostly explored in the case of health care sector (Rosa González *et al.*, 2022; Alrawashdeh *et al.*, 2021; Nemteanu *et al.*, 2021; Yu *et al.*, 2020; Giménez-Espert *et al.*, 2020). Studies highlighted the importance of social support (Nemteanu *et al.*, 2021; Giménez-Espert *et al.*, 2020) and negative impact of low salaries, work intensity and burnout (Alrawashdeh *et al.*, 2021; Yu *et al.*, 2020) on job satisfaction during COVID-19 pandemic.

However, only a few studies of SIEs related to COVID-19 have been published (Rosa González *et al.*, 2022; Sahoo *et al.*, 2022), but they do not focus on job satisfaction. Therefore, we raise the question: how has the COVID-19 pandemic affected SIE's job satisfaction?

Theoretical background

Job satisfaction is a positive emotional state resulting from job evaluation or work experience (Froese & Peltrokorpi, 2013; Fisher, 2014). Lauring and Selmer (2018) highlight that satisfaction is achieved when there is a good fit between the desires of the individual and the supplies of the organization.

Diskienė and Tamoševičienė (2015) claim that job satisfaction is a phenomenon that is extremely important not just for individuals but also for organizations. They note that job satisfaction can also be influenced by organizational factors, such as the company's structure or work characteristics. Employees who are satisfied with their work put in more effort into completing their tasks and achieving organizational goals (Kassahun & Raman, 2021). Those employees would be more engaged at work and feel a sense of commitment to the organization.

Job satisfaction reflects an individual's overall attitude toward work. If a person is very satisfied with work, their attitudes about work are positive and vice versa (Robbins & Judge, 2006). In summary, job satisfaction is defined by the positive or negative emotions an employee experiences due to various job characteristics. Given that job satisfaction means satisfaction with various job characteristics, Locke (1976) mentioned that the most important dimensions of job satisfaction are the following: the nature of the job itself (work content is interesting to the employee, variety of work tasks); reward; career opportunities; working conditions, such as a pleasant environment, modern work technologies, etc. and work relations.

SIEs are expatriates who are employed individually on a contract basis and are therefore not transferred abroad by the parent organization (Andresen *et al.*, 2012). They accept work abroad, often without a planned period, and the legal decision to hire is taken by the new organization (Tharenou, 2010). In contrast, organizational (Froese and Peltokorpi, 2013) or assigned expatriates are sent overseas by their companies.

Some studies focus on differences of job satisfaction between assigned expatriates and SIEs (Lauring & Selmer, 2018; Froese & Peltokorpi, 2013). They identified that SIEs have lower job satisfaction (Froese & Peltokorpi, 2011; Froese & Peltokorpi, 2009). It could be related to the fact SIEs more often work under host-country national supervisors (Froese & Peltokorpi, 2013) and get less support from the organization (Peltokorpi & Froese, 2009). Algarni *et al.* (2021) and McNulty *et al.* (2019) highlighted that expatriates are more vulnerable to crises than host country nationals, as they are restricted in their choice of available crises' response. Therefore, further research continues focusing on SIEs job satisfaction issues during COVID-19.

Method and interviewees

Eight interviews were conducted from March 2 to April 10, 2022, using Skype, WhatsApp, and Microsoft Teams programs. Interviews were conducted with eight self-initiated expatriates who live in different countries and work in various sectors. The interviews lasted 30-45 minutes, depending on the time available to the research participant. All participants have a university education. Three out of eight participants were male. The duration of expatriation varied from 1.5 to 13 years. General information about all eight interviewees is presented below.

N1 – 37-year-old man from Singapore. He has been working for a non-profit organization in Cambodia for 7 years.

N2 – 32-year-old woman from the Philippines. She has been working and living in Cambodia for 4 years.

N3 – 69-year-old woman from Australia. She has lived in Vietnam for 8 years.

N4 – 27-year-old woman from Lithuania. She has been living and working in Malaysia for 1.5 years. Before Malaysia, she spent 5.5 years in the Netherlands.

N5 – 37-year-old man from India. He has been working and living in Germany for 5 years.

N6 – 35-year-old woman from Lithuania. She holds a management position in one of the start-ups in Malaysia, which operates in several regions.

N7 – 34-year-old male from Italy, holds a Ph.D. He currently lives and works in Lithuania in one of the small startups.

N8 – 30-year-old woman from India. She is currently working and living in Germany for 2 years.

Results

Firstly, SIEs were asked about their job satisfaction generally and factors influencing it. All informants highlighted a level of their job satisfaction: *"Yes, but I think at this point and time, I was quite happy with the work that I do, that I did for the last three years, I am pretty happy."* (Participant N1); "*Yes, yes. I would say so. Yeah, I am almost here in this position for two years and yeah, I am already thinking about renewing my contract."* (Participant N2); "*Yeah, I, I am quite satisfied."* (Participant N5); "*Sometimes I have to remind myself that I'm still satisfied <...>"* (Participant N4).

Looking at factors that influence SIEs' job satisfaction, freedom, autonomy, and recognition were noted as the most important ones: *"<...> and here I am more satisfied because I get a lot of exposure. I* *speak to senior leadership directly and make presentations directly to them, which I could not make in India because I was in a more junior role ", "<...>You know, I also glued to the program manager here, which I have always wanted to get there. And currently I am also sitting with the leadership group, so which is also, exposure for me."* (Participant N5); *"<...> job satisfaction, because I am getting a lot of autonomy<...> I usually speak directly with the director of organization."* (Participant N1).

A salary and equal benefits for international and local employees were also mentioned as principal factors for job satisfaction: *„<...> we can't talk about job satisfaction if I cannot survive"* (Participant N1); "<...> *our working hours are beyond some time then we get overtime hours which we can take as vacation but if it also exceeds then we get it as a monetary benefit, we get extra salary for that, and that's great."* (Participant N8); "*I guess from a very point of view it also gives me extra satisfaction to know that the benefits I enjoy are being enjoyed by my local counterparts. "(*Participant N3).

Moreover, three informants also revealed the destination of the management as well as the country role for job satisfaction: *"<...> Perhaps my satisfaction could be greater if it were another country (laughs)."* (Participant N6);*"<...> yes, I'm satisfied with my organization, the only thing would have been slightly better is if my organization's executive management set in Europe."* (Participant N5).

In addition, cultural aspect as well as the distance to closest social circles were mentioned as factors influencing work satisfaction: "*<...> being in new country miss... it means that you miss all the supporting structure that I might have the after in Canada where I was staying for seven years, so nearly where I was born, so all having your family there, having your friends, so this is starting new, and it is a little bit harder than starting from scratch. Also, I think different, uh, different culture has an impact*." (Participant N7).

After asked if the country itself matters for satisfaction, local culture context and COVID-19 regulations inside the country were mentioned as an important factor several times: *"<...> Yes, it has. From the perspective, it's very comfortable to live in Malaysia. However, not from the cultural side. It is not that I really like culture or food in Malaysia. "<...> Well it's comfortable, cheap and the* *weather is always good...” (Participant N4). “<…> for example, those who now live in Hong Kong, their satisfaction has decreased significantly because of Hong Kong restrictions but not because of the job. <…> For example, Singapore still has restrictions so more than five people cannot meet at the same time, so things like that really makes people think should they stay in the country for longer. <…>So yes, country means a lot.”*

Beside mentioned factors, one informant noted good relations with her manager “*<…> my negotiations with my boss*.” (Participant N5) and another - organizational support *“<…> being fair, I guess, and see that the company takes good care of its own people. Yeah, it also makes me satisfied. “(*Participant N3).

COVID-19 with its restrictions and isolation changed the work and life of employees. Therefore, SIEs were asked to tell how COVID-19 pandemic influenced their job satisfaction. We would like to note that participant 6 did not relate job satisfaction to COVID-19: *<…> maybe my job satisfaction is not much related to COVID <…> it is my character (laughs) that I get bored very quickly with constant things and I am motivated by innovation, some kind of creation…”*

However, most comments from informants were received in relation to remote work. It is true that this type of work provides more flexibility, and timesaving: “*<…>you know, that the fact that you are more flexible you can work from home, those are good things.”* (Participant N5); “*For me, so at the beginning I was pretty excited about it, because it’s a great way to save on time and to save on some expenses for transportation <…>”* (Participant N2). Based on these factors Singaporean working in Cambodia even informed about his increased job satisfaction: *“Well <…>, you know, it actually increased my job satisfaction rather than decreased.”* (Participant N1).

Remote work was especially beneficial for Participant N6, who could work from the home country. The informant related this opportunity not only to the job satisfaction, however also to increased quality of life: *“During the last 12 years… 11 years I spent a week in Lithuania, two weeks at most. In 2000, I spent 6 months, last year 3 months and since it is remote work till now, it doesn’t matter where you are. My quality of life, personally, has increased a* *lot because I can spend more time in Lithuania with my family and I can have a quality time with my friends, not once or twice per year."*

Moreover, one participant was happy for organizational support in relation to protection and vaccination of employees: "<...> *because they arranged for our vaccination, and it was a quite convenient, like because here in Cambodia, some companies would do it in organized way, and some you just have to figure it out by yourself. So, they organized specific days for all the staff to get it. And then, um… they would send us home testing kits, they would send us some medicine if we got like common flue, etc."* (Participant N2).

However, more negative than positive aspects were noted. The new way of working influenced socialization with colleagues even when lockouts finished, which negatively affected job satisfaction and were mentioned by several informants: *"<...>because of this Corona virus, suddenly the all the organizations that I suppose have changed their way of, you know, doing work. So, that is a little, you know, I mean.... I wouldn't say demotivating, but I wish there could be more, you know, face to face session that like the way we used to have about three or four years ago."* (Participant N5). Moreover, a long-term impact of Companies going online during COVID-19 was mentioned. While some of the Organizations chose to stay at least partially remote even after pandemic restrictions: *"But in the long run, that's not ideal, you know, everyone wants to, you know, go to the office and things like that, or at least have that flexibility, right? Even right now my job is becoming more remote than it used to be before. <...> I think organizations need to have some kind of exercise, you know, where in…if, if not globally, then at least at the regional level, people meet each other, talk to each other and things like that."* (Participant N5); *"I just joined on… like from home office and I haven't met my team in person yet, so it's a very different way of working, but it got better over time, I could say."* (Participant N8);

Physical and mental health issues were addressed directly by two participants: *"<...> I would say that it has affected my mental health a lot, because I have never worked from home ever in my almost 8 plus years work events. <...> in terms of work - life balance is great. The only thing which is lacking is going back to office. I hope that it gets better. "(*Participant N8); *"<...>the furniture at home we're not really designed for long hours of working, so I find myself and* *slouching, and slouching more or staying long hours in very strange positions that would give me back pain."* (Participant N2).

Some informants noted, remote work decreased their productivity of work: "*This is the first time that I'm doing uh, and my job is more with interaction with people and that is being cut off. So, it's mostly many meetings versus less time to work, so that way I could say I'm not very satisfied with the job, but this is not the company."* (Participant N8); *<...> I feel too lazy <...> I think my productivity suffered, <...> I don't do well with working from home by myself. <...> During this time, when I was reported to attend the zoom meetings, I would fall asleep"* (Participant N2); *<...>Being in a Startup, so since we have very few people working here, everybody has his own big office, so it's not... am, COVID rules are much, much looser here. What we need in.... there, there is a lot of more hands-on work, and they cannot be done remotely."* (Participant N7).

Additionally, field-related challenges were mentioned. In case of participant N3, instability brought by COVID-19 to education sector were discussed: "*<....> they had decided that now schools are going to be open, but the school has been open through open, closed and then teachers doing both. They have some children at school and then some children who are learning remotely, which is really difficult for them."* (Participant N3); *"<...> so, it's just the uncertainty that was that happened and, and that many of the international teachers left."* (Participant N3).

Some more negative aspects were mentioned in relation to COVID-19 restrictions. One of them was business trips. In case of research participant N8, business trips used to be a part of her work but considering the situation of COVID-19 in the world, she cannot travel and has not yet had the opportunity to travel for business purposes: *"<...> this is only because of the situation, because of the times and that we cannot go back to office, they cannot travel. So, my job involves a lot of travel and I've not been able to travel even once yet.*" (Participant N8).

Conclusions

Interview findings revealed all participants did not stop working during the pandemic, even if the way of working changed. The job satisfaction of explored SIEs is characterized by the need for respect, autonomy, and benefits. Organizational support especially during COVID-19 was also highlighted as a key factor for job satisfaction for self-initiated expatriates. This is in line with other studies (e.g., Kumpikaitė-Valiūnienė *et al.*, 2021; Thakur & Kumar, 2015) revealing the importance of organizational support for employees.

COVID-19 was highlighted as having contradictory results (positive or negative) on job satisfaction. Informants were quite satisfied in the short term or in specific situation as in case of participant N6 (Lithuanian from Malaysia). Due to the fact she had the possibility to return to Lithuania before the lockout and work remotely for her company in Malaysia, she noted her job satisfaction as well as life quality improved.

However, most participants noted decreased motivation, laziness, problems with health and lack of socialization with colleagues. Therefore, to conclude, the study revealed that remote work had a negative impact on some participants. Furthermore, it shows the crucial role of organizational and managerial support in relation to the occupational well-being of SIEs.

Speaking about limitations, this study was built on interviews with only eight participants. In addition, people of different nationalities working in different regions of the world participated in this study. The participants' individual characteristics and cultural aspects were not considered in this investigation. Therefore, studies exploring SIEs from one country or residing in another country and research in relation to individual characteristics, cultural background and field of work could be suggested for future research.

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Chapter 5

INNOVATIVE GUIDELINES AND DIGITAL TECHNOLOGIES FOR MANAGING SOCIO-ECONOMIC SYSTEMS

DIGITALIZATION EFFICIENCY ASSESSMENT OF THE TRADE ENTERPRISES ACTIVITY ON THE BUSINESS-ORIENTED APPROACH BASE

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Abstract
The study purpose is theoretical and methodological aspects systematization of trade enterprises activity digitalization effectiveness assessment on the business-oriented approach base. In the research process, general scientific and special methods are used: scientific abstraction, deduction, analysis and synthesis, content analysis, systemic and critical analysis, statistical analysis, economic and mathematical modeling. It is proved that digital economy formation has necessitated the implementation of systemic transformations and

actions, called «digital transformations». The expediency of considering the digitalization process from the point of view of various scientific approaches is substantiated, their classification is presented. General trends are identified and tools are proposed on the base of conducted study results summary of the global e-commerce market development trends, as well as the markets of Ukraine, the Baltic countries and, in particular, Latvia, which have a direct effect on the business development in the online trade field. It is established that the needs of online buyers remain the same: a wide range of goods; variety of payment options; quality service; low cost and high speed of delivery. It is proved that the trade enterprises digitalization provides increased efficiency of their activity, improved service, optimization of logistics operations and costs for their implementation, expansion of the product promotion geography, price pressure reduction, added value growth, rational use of enterprise resources and its competitive advantages, reduction of the negative influence of unfavorable environmental factors. Economic and mathematical model, which is adapted to business environment changes, is proposed for the digital technologies implementation effectiveness assessing in the trade enterprises activity.

Keywords: *digital economy, digital transformation, digitalization, business-oriented approach, e-commerce, efficiency, economic and mathematical model.*

Introduction

In the global economic system, there are transformational processes associated with its digitalization, including the digitalization of business processes, which effect on the business efficiency and effectiveness increasing, radically change the management strategy not only of the enterprise, but also of the economy as a whole. One of such transformation results is digitization of trade enterprises activity, which is one of the tools for achieving the goals of sustainable development, satisfying the information needs of the participants in this process, and providing the effective formation of the enterprise’s business environment. In this regard, the study of trade enterprises activity transformation process under digitalization effect has important theoretical and scientific and practical significance.

The works of such scientists as Ligonenko, Khripko & Domanskii (2018), Orekhova & Tertychnyi (2019), Dubina & Kozliancheko (2019), Savchenko, Kovalova, & Kozachyshyna (2020), Tertichny (2021), Negroponte (1995), Tapscott (1996), Williams (2021) and others are devoted to the study of the global digitalization effect on the world economy.

The problems of the electronic commerce formation, business processes digitalization and their adaptation to globalization changes are considered in the works of Horiachka (2017), Gustera (2020), Sidenko (2020), Summer & Dunkan (1999), Kshetri (2007), Rivza, Kruzmetra, & P. Rivza (2020), Babics & Zvirgzdina (2022), Bikse, Lusena-Ezera, & Rivza (2021).

Despite the numerous scientific works of both foreign and domestic scientists, today a number of theoretical and practical issues of the digital technologies implementation process into the trade enterprises activity and its effectiveness assessment remain unresolved, which led to the choice of the research topic, setting its goals and objectives.

The study purpose is theoretical and methodological aspects systematization of trade enterprises activity digitalization effectiveness assessment on the business-oriented approach base.

The study objectives are summarizing the theoretical and methodological support of the issues under study and substantiation the scientific approach to the trade enterprises activity digitalization process effectiveness assessing.

Materials and Methods

The study purpose achieving and setting tasks solving grounded using general scientific and special methods of scientific knowledge: scientific abstraction, deduction, analysis and synthesis (for the essential content conceptualization of the digital economy and digital transformations, their effect on the electronic commerce development); content analysis (for study the features of the content of a large and unsystematized array of primary sources on the research problem); systematic and critical analysis of scientific approaches to the consideration of the digitalization process; statistical analysis (for determining the development trends of the global e-commerce market, as well as the markets of Ukraine, the

Baltic countries and, in particular, Latvia); economic and mathematical modeling (for assessing the digital technologies introduction effectiveness into the trade enterprises activity).

Results and Discussion

The root cause of the digital economy appearing in the middle of the twentieth century was the Internet spreading. This event in certain circles of specialists was called «Internetization». Undoubtedly, this process had significant effect on the enterprises' activity at the B2C market.

It is "Internetization" as a process of access expanding to information and the possibility of carrying out certain operations that can be the base for the "digital economy" concept in the narrow sense of the word.

In the broad sense of the word, the digital economy can be understood as a set of industries, which are associated with the emergence of new technologies and the development of robotics, that use digital platforms, new technologies, smart technologies, and so on (Savchenko, Kovalova, & Kozachyshyna, 2020).

Currently, the digital economy is economic activity, which is based on digital and electronic technologies, and includes electronic business and commerce, as well as the goods and services that they produce.

The following e-business models are considered in the materials of the European Commission of the ESPRIT project: e-shop, e-catalog, e-auction, e-shopping center, virtual community, virtual development center, information broker, business operations provider, business operations integrator.

The digital economy formation has necessitated systemic transformations and actions called "digital transformations".

The "digital transformation" concept includes many terms with different interpretations. Key terms that have a similar sound in English, but are radically different in content (Ligonenko, Khripko, & Domanskii, 2018):

– digitization is the information transformation "from physical media to digital". Within digitization there is no changes in the quality and content of information, it simply turns into an electronic form for further processing in digital format, which allows improving existing business processes by adding to them information in digital format;

– digitalization is, first of all, the creation of a new product in digital form. Therefore, the key difference between digitalization is the creation of a new innovative product with new functionality and consumer properties. And if digitization is primarily aimed at improving existing business models and changing business processes, digitalization allows obtaining significant breakthrough in the business and new competitive advantages.

In our opinion, consideration of the digitalization process is advisable from the point of view of scientific approaches, among which are:

– information approach where digitalization is considered as a set of information resources (data processing), human resources (knowledge, abilities) that arise due to the introduction of information and communication technologies;

– process approach where digitalization acts as a way to use new technologies for business operations, new flows of information and data which are created with use of information and computer technologies;

– structural approach where digitalization is considered as a way of transformational transformations in the economy: the digitization process, the analog data conversion into digital form;

– business-oriented approach where digitalization is considered as an opportunity to create new business models (network business, e-commerce) in order to benefit from the use of new advanced technologies that process a large information flow (Dubyna & Kozliancheko, 2019).

Business digitalization involves changing communications, business ideas, business models, business functions of companies, rethinking business approaches to production, supply, sales of products (works, services), marketing activity and management decision-making and leads to their deep intellectualization, robotization, informatization, increasing digital technologies and innovations.

We will use the business-oriented approach for setting goals and objectives solving in this study.

E-commerce is an important part of the digital business transformation process.

In the world over the past five years, the annual growth rate of e-commerce was approximately 20%.

The COVID-19 pandemic has had significant effect on the e-commerce development. Despite the fact that due to the global pandemic, the total volume of retail sales in the world decreased by 3,0% to 23,839 trillion of US dollars, the volume of online commerce increased by 27,6% in 2020 and amounted to 4,280 trillion of US dollars (Chevalier, 2022).

According to analysts, by 2040, 95% of all purchases in the world will be made online.

According to the independent expert and analytical center BRDO, in 2019 Ukraine became the second among European countries in terms of the growth rate of the e-commerce market. In 2021, domestic consumers made purchases worth $4 billion of US dollars, and this is the third more than in 2020 (Dimura, 2022).

In 2020, the following was bought more often in Ukraine: clothes, shoes, accessories (4,6 million orders); appliances and electronics (4,4 million orders); food (4,1 million orders); goods for home and garden (4 million orders); cosmetics and perfumery (2,8 million orders).

It should be noted that in 2019-2021 the main factors, which hinder the dynamic development of the e-commerce market in Ukraine were the impossibility of its regulation due to the emerging legislative framework and the non-compliance of many online stores with the rules and standards of e-commerce.

Today, during the full-scale war in Ukraine, the pre-war sales of only two categories of goods have recovered – pet supplies, household and hygiene goods (Yarova, 2022). However, there is a trend in the growth of goods sales that satisfy the basic needs of consumers – food, mostly baby food; pharmaceutical products; clothes and shoes. Currently, the choice of online store depends on two factors: the buyer location; the line number of the search query in Google.

According to the results of the study of e-commerce development trends in the Baltic States, conducted by SEB Bank, in 2020 its share in retail trade exceeded 10%. In turn, according to analysts' forecasts, by 2024 in the Baltic States the share of e-commerce will grow to 12% and will be about 30% of the growth in retail trade, that is, in absolute terms, the volume will increase by 1,2 billion euros, reaching 3 billion euros.

In Latvia in 2020, online grocery retail and ready-to-eat food delivery led the way according to online sales growth, where volumes tripled compared to 2019.

It should be noted that for the period of 2020 – 2022 there is a steady trend towards increasing in the number of online stores, which offer goods and services in the digital environment: Depo, RIMI, food manufacturer Orkla Latvija and the Latvian green pharmaceutical enterprise Silvanols are actively implementing the product sales digitalization (Crusts, 2021).

In addition, according to the Central Statistical Bureau of Latvia, in 2020 62,8% of the population made purchases online, which is 9% more than in 2019 (Stavro, 2021).

According to the survey of 1,000 Latvian residents aged 18 to 74 years, conducted in January 2022 by the research company Norstat, 70% of respondents noted that they feel safer buying goods online without visiting stores. For 47% of respondents, the main factor during buying in an online store is convenience, for 7% it is a wide range (Šablinskas, 2022).

Thus, summarizing the results of the study of the global e-commerce market development trends, as well as the markets of Ukraine, the Baltic countries and, in particular, Latvia, the following general trends can be distinguished:

– short-term forecasts;

– automation;

– constant accounting and control of communication with customers;

– the effect of being on the Internet, which according to feelings closes to offline stores;

– developed customer service;

– omnichannel models of customer migration from offline to online (and vice versa), their development;

– analytical tools of the activity and capabilities of companies;

– new technologies and training;

– self-determination and identification of the company at the market;

– measurability of tools and indices;

– new level business relations (offline events as a premium component of communication).

In our opinion, it is advisable to use the following tools that have direct effect on the business development in the field of online trade:

– promotion in social networks, through e-mail, native advertising and publications in the media;

– online webinars, conferences and other events;

– video content on YouTube and other services;

– digital, performance, marketing;

– direct marketing and SEO;

– cooperation with influencers;

– email newsletters.

It should also be noted that the needs of online shoppers remain the same: a wide range of products; variety of payment options; quality service; low cost and fast delivery

The introduction of digital technologies into the activity of enterprises, operating at the B2C market has actualized the need to develop a scientific approach to assessing the effectiveness of the digitalization process, which is adapted to business environment changes.

It should be noted that most studies are devoted to assessing the effect of digital technologies and ICT on the macroeconomic indices of a country or a group of countries on the base of economic and mathematical modeling.

We propose to use the Brynjolfsson & Hitt model (Brynjolfsson & Hitt, 2003) for assessing the effectiveness of the digital technologies introduction into trade enterprises activity.

In general, the Brynjolfsson & Hitt model looks like this:

$$Q = A\,(i, j, t)\, K^{\beta k}\, L^{\beta l}\, C^{\beta c}, \qquad (5.1)$$

where: Q – added gross value of the enterprise;

K – cost of the enterprise capital;

C – cost of enterprise digitalization;

L – labor productivity;

t – time variable (studying period);

i – index reflecting the analyzed enterprise number;

j – enterprise economic activity type;

A – variable that reflects the difference in the volume of added value creation between enterprises over the study period, which is not related to changes in the input resources use (K, C, L);

β – elasticity parameters (capital, digitalization, labor productivity).

During the analysis it is necessary to move from the actual values to their level, for which the logarithm of formula (5.1) is performed. For ease notation, logarithmic variables are marked with lowercase letters (that is, log K is in the form k), and indices denoting enterprises (i), time (t), and industry (j) are excluded, except when it is really required:

$$q = a\,(i, j, t)\ \beta_K k \beta_L l \beta_C c. \qquad (5.2)$$

In the proposed model, the data are reduced to a comparable form and adjusted according to the price indices. There is also the possibility of error due to inaccurate statistical data, although it is assumed that correct statistical information will be used.

Comparing the change in the values of indices a, q, l over time, it is possible to conclude that:

1) cost of the enterprise's activity digitalization significantly correlates with the growth of labor productivity; with study period increasing this relationship increases as well, which can be explained by the adaptation of enterprise's organizational structure to new technologies;

2) enterprise's investments into the digitalization of its activity provide increasing the volumes of value added creation.

It should be noted that the proposed model allows comparing the goals, which are set by the enterprise with its capabilities, thereby preventing the risk of losing investments.

Conclusions

The studies of the theoretical basis of trade enterprises activity transformation process under the influence of digitalization, the main trends of the global e-commerce market development, as well as markets in Ukraine and Latvia, made it possible to identify common trends and propose tools that affect the efficiency of doing business.

Trade enterprises’ business processes digitalization as a component of their business model provides increasing goods sales efficiency, improving service, optimizing logistics operations and costs for their implementation, expansion of goods promotion geography, reduction of price pressure, sales revenue growth, rational use of enterprise resources and its competitive advantages, reducing the negative effect of adverse environmental factors.

For assessing digital technologies introduction effectiveness into trade enterprises activity we propose to use the Brynjolfsson & Hitt model, which allows concluding that enterprise’s investments into digitalization of its activity provide increasing volumes of added value creation.

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THE OPPORTUNITIES OF AN ENTREPRENEURIAL STATE FOR INNOVATIVE DEVELOPMENT AND STRUCTURAL CHANGE: THE BASICS OF THE CONCEPT AND ITS PECULIARITIES FOR UKRAINE

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Abstract
The article highlights the basics of the concept of the entrepre-neurial state, which is spreading in developed countries. Its ad-vantages in ensuring targeted structural changes, innovative de-velopment, and the formation of new markets are shown. Atten-tion is drawn to the opportunities, peculiarities, and differences from developed countries in applying this concept to the post-war recovery of Ukraine, which is subject to external military aggression.

Keywords: *entrepreneurial state, structural changes, innovative development, post-war recovery.*

Introduction

The structural transformations and dynamic growth of the global economy over the past century was a direct result of rapid scientific and technological progress and the introduction of a wide range of different innovations that radically changed both the manufacturing landscape and the system of economic relations, as well as human life. Under the influence of innovations, labor productivity, and incomes increased many times over, new types of production and service activities emerged, changing the structure and forms of employment, and the organization of production and everyday life were transformed. At the same time, innovations caused many negative externalities, both in terms of growing and life-threatening environmental pollution and climate change, and in terms of growing instability and uncertainty of development, structural and financial crises, the spread of social disasters and demographic problems, and the deepening of property stratification of the population both within countries and internationally.

All these factors forced the global community to reconsider current approaches to development management, to establish its sustainability, stability, inclusiveness, predictability, and manageability, and to make its results safe and environmentally friendly, and fair for everyone. This is reflected in the 17 Sustainable Development Goals (SDGs), formulated by the UN and implemented in the national legislation of many countries. According to these goals, those components of the state economic and social policy that determine the innovation processes in the country, their quality and direction, form the structure of the economy and production, and distribute the benefits obtained as a result of development among members of society should be reviewed and improved. The issues that arise in this case are related not only to the quality of innovations but also to the role of the state, business, and society in general in their creation, further promotion, and use.

Ukraine's economy is seriously inferior to developed Western countries in many respects and requires a fundamental change in its economic model (Kindzerski, 2021). This problem is becoming particularly acute in light of the brutal full-scale military aggression that the country has been experiencing from the Russian Federation since February 2022. In this regard, the possibility of using the concept of an entrepreneurial state to ensure targeted structural changes and innovative development is attracting attention. The concept was formed and is spread in developed countries, while for countries such as Ukraine, its application will obviously have its own peculiarities.

Results and Discussion

According to the conclusions of the world's leading scientists, ensuring resilient and long-term economic development with the improvement of its qualitative characteristics is ensured by targeted structural changes and appropriate structural policy based on the development and complementary combination of fundamental and structural factors of development (Stiglitz, Lin, & Monga, 2013; McMillan, Rodrik, & Sepulveda, 2017). Creating innovations is one of the fundamental factors of development, along with education, training and retraining, infrastructure development, healthcare, and social security. The basis of structural factors is the advanced and state-supported development of certain areas and sectors of production ("growth drivers") with higher productivity and added value due to the introduction of innovations.

The forms, methods, and feasibility of state support for these interrelated processes are currently under debate. There is only a consensus on the need to organize and fully covered by the state the costs of basic research – the first stage of the innovation cycle, which later serves as the basis for innovative developments, as the market's inability ("failure") to provide such research is recognized. At the same time, the practice of some of the most developed countries showed the leading role of state support both at the next stages of the innovation cycle – in the creation of applied developments and prototypes and their launch into production, and in the organization of the creation and support of the production facilities themselves to form the aforementioned "growth drivers" and "infant" industries, the development of fundamentally new technological areas and products (e.g., nano-, bio-, information technologies). There is a gradual rethinking of the position on the unconditional superiority of the market in creating wealth and ensuring general welfare, for which the state can only be a supplement to overcome its "failures". In particular, in Western countries, the concept of an entrepreneurial state with a mission-oriented innovation policy is becoming increasingly popular in practice to ensure targeted structural transformations, and the formation of new sources and directions of development, socialization, and environmentalization (Mazzucato, 2013; Mazzucato, 2015; Mazzucato & Semieniuk, 2017; Kattel & Mazzucato, 2018).

The concept is based on the fact that the market itself is unable to allocate resources efficiently when it becomes necessary to move away from the established state of the economic system and the existing development trajectory, to ensure the rapid and dynamic formation of new areas of activity in response to the challenges faced by society and its needs (Mazzucato, 2013). It is accepted that the market does not always develop on a trajectory that is optimal in terms of social outcomes, so the task of the state is to form a technical and economic paradigm that, on the one hand, will simultaneously increase labor productivity, create massive amounts of high-paying jobs, and socialize production, and on the other hand, will not arise spontaneously as a result of market forces alone.

The entrepreneurial state moves away from passive observation of traditional markets and their fixation as such, while actively initiating the creation of new ones that change the structure of the economy, providing incentives for private businesses to enter these markets after it (Mazzucato, 2015; Kattel & Mazzucato, 2018). The state assumes the function of a venture capital investor. While private venture capital is becoming more and more short-term with an expectation of results up to 3 years, the state makes long-term (15-20 years) investments in the emergence of new, primarily breakthrough and revolutionary, technologies and products at all stages of the innovation cycle – from basic research, applied research, creation of prototypes and production, the launch of mass production and its support until it forms a new market, becomes breakeven and private business is widely involved in this market. State development banks and state sovereign wealth funds receive a fundamentally new option in the innovation process – by taking on some of the risks, they move away from financial support for traditional activities, while increasingly shifting their attention to financial support for innovation processes with a long implementation period in new areas, starting from the stage of applied research and beyond (Mazzucato & Semieniuk, 2017).

In this way, the state assumes all the ultra-high risks of losses that arise in this process and that private business is not ready to bear on its own at the initial stages when innovations cannot yet generate profit. The entrepreneurial state, acting as a venture capital investor, like any private venture capital investor, is objectively doomed to make mistakes and failures due to the extremely low forecasting and predictability of the final result of the innovation process. Therefore, failures should not be perceived as “failures” and inefficiency of the state, especially given the long-term nature of investments. By assuming the role of a venture capitalist, the state has the grounds and the right to remuneration for high-risk investments, which should not be limited to additional tax revenues, as it is traditionally considered. The remuneration should compensate for losses from possible failures and generate resources for new investments. Therefore, there is a need to use a portfolio approach to investment, to have the state enter the capital of companies that receive innovative products and technologies created with its help, and to participate in the disposal of their profits.

In choosing areas of investment, the entrepreneurial state moves away from solving narrow technical issues and the goal of making a profit only by a private owner, setting itself primarily broad socio-economic goals, engaging society and business in identifying problems and determining directions of transformation on a partnership and horizontal network basis, systematically forms the institutional and regulatory environment for this purpose, creates the necessary management, research and financial institutions, and production entities. In practice, thanks to this concept, developed countries created fundamentally new areas of scientific and technological development (information, bio-, nanotechnology, new medicines, etc.) over the past half-century, which laid the foundation for the formation of private high-tech businesses[1]. Today, the main socio-economic and environmental tasks set by the entrepreneurial state in developed countries include the formation of a "green economy", decarbonization of production, overcoming inequality, and health care. In line with these directions, a new technical and economic paradigm of development is formed, and the groundwork is formed for a new technological breakthrough and a change in the structure of the world's advanced economies.

The experience of applying the concept of an entrepreneurial state is extremely valuable and instructive for the structural transformation of Ukraine's economy and its transition to innovative high-tech development, while simultaneously focusing on overcoming the complex socio-economic problems that accumulated over the previous decades of unsuccessful reforms. At the same time, it cannot be applied unconditionally, as the economic conditions in Ukraine differ from those in developed countries. Ukraine is facing the challenge of ensuring catch-up development and overcoming technological backwardness and structural deformations in production, while developed countries are focused on technological breakthroughs and the creation of fundamentally new types and areas of activity. Unlike developed countries, the research sector in

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[1] In this context, the state can be compared to an icebreaker that paves a new path and is followed by other ships – private business.

Ukraine is in deep crisis decline and the state is unable to provide it with the level of financial and human resources that would allow it to obtain its own breakthrough technologies, even in a few narrow areas.

Under such conditions, taking into account severe financial constraints, Ukraine can and should rely, at least in the coming decades, mainly on technological borrowings from developed countries in those sectors that will be prioritized for development, overcoming technological backwardness and structural deformations. Ukraine will need significantly, many times fewer resources to attract or acquire foreign technologies that are already working and have shown their potential in developed countries, but have not yet exhausted it and are not outdated than to create and implement its own new ones. By borrowing technologies, Ukraine can simultaneously develop improving innovations based on these technologies, with the subsequent accumulation of their critical mass and transition to breakthrough innovations. When choosing technologies, taking into account the experience of their application in developed countries, attention should be paid to their social and environmental aspects, the possibility of creating new jobs and developing inter-sectoral ties, and minimizing environmental damage. These aspects can become the initial task for developing these improving innovations.

The forms of broad technological borrowing by the state can be, firstly, the organization and establishment of joint ventures with the involvement of the world's leading technology companies, whose participation in the capital of enterprises will allow them to obtain appropriate technologies and markets. Secondly, it is the acquisition of foreign licenses for the production of relevant high-tech products by domestic companies at public expense with further participation of the state in their capital in the amount not less than at least the amount of funds spent by the state for the acquisition of licenses. In both cases, the size of the state's share in the capital of enterprises should allow it to influence the management of enterprises at the strategic level and participate in the distribution of profits. By forming a pool/portfolio of such companies with its ownership stake and in priority production sectors, the state will thus create the basis for its appropriate restructuring, localization within the country, development of broad inter-sectoral ties and related industries, and overcoming technological backwardness.

The tools for catch-up development that Ukraine should focus on are somewhat different from the tools for technological breakthroughs used by developed countries. Whereas developed countries create new markets through technological breakthroughs, where they have no tangible potential competitors from outside, Ukraine, borrowing technologies and creating its own production on their basis, is objectively forced to focus on existing markets, both domestic and foreign, their capacity and demand potential, as well as on existing competitors offering similar products. Therefore, at the initial stages, the state in Ukraine, along with borrowing technologies and creating companies with its participation, should resort to tools for temporary protection of its own Ukraine's market and creating additional demand in the sectors it plans to develop.

In addition to the problem of catching up with developed countries and ensuring appropriate structural changes in the economy and production, Ukraine faces the challenges of countering large-scale military aggression by the Russian Federation, overcoming its consequences, and ensuring post-war recovery. This should be taken into account when choosing appropriate priorities for technological borrowing and structural transformation. It should be recognized that Ukraine's significant technological and industrial backwardness as a result of miscalculations in structural and innovation policies in previous decades largely created "favorable" domestic economic and technological preconditions for the start of military aggression. The backwardness was acutely evident primarily in terms of the lack of modern high-tech weapons in Ukraine. At the same time, these weapons the enemy uses to deliberately destroy and damage critical large industrial, infrastructure, and logistics facilities of civilian and military importance, which became one of the most acute key problems for Ukraine, not only in terms of its political and economic survival but also, above all, its physical existence. This tactic of the attacker is aimed at quickly undermining the country's economic potential, depriving it of its ability to effectively and long term resist aggression, and creating a humanitarian catastrophe, as production and infrastructure facilities related to the life support of the civilian population are destroyed.

The war in Ukraine showed a number of extremely acute shortcomings of the national economy and the organization of defense, which affected the ability to resist aggression, namely (Kindzerski, 2022, pp. 254-256):

– significant structural, and spatial unevenness in the distribution of industrial potential over the territory of the country, its predominant concentration in the eastern regions and in certain large cities. This unevenness led to a disproportionate reduction in the country's economic activity and budget revenues compared to the size of the territories where production facilities are located and where active hostilities are taking place. As an example, the sudden shutdown of just one Azovstal plant in Mariupol during the hostilities resulted in a 30% reduction in metal production in the country with a corresponding loss of budget revenues and foreign exchange earnings;

– extremely low diversification of production, the predominance of a narrow range of industrial and agricultural products of intermediate consumption with a low degree of processing. The negative effect on the economy due to military action is the same as that caused by excessive spatial concentration of production – sudden economic and budgetary losses due to the stoppage or destruction of production capacity for such products, which cannot be compensated for;

– the external critical dependence of production and defense on supplies of components, the monopolistic external dependence on the aggressor country and its satellites for supplies of fuel and energy resources, in particular gas and oil products, against the background of the closure before the war of most Ukraine's oil refineries and the destruction during the war of the few enterprises that remained. Against the background of the simultaneous destruction by the aggressor of the storage infrastructure and storage bases of fuel and lubricants throughout the country, the lack of own production of these products and the problems of diversification of sources of supply and payment for them create a high risk of a sudden collapse of the economy and defense of the country, a threat to food security by preventing agricultural activities;

– the inflexibility and narrowness of certain elements of transport and logistics infrastructure in exporting industrial and agricultural products and receiving import deliveries. Firstly, we are talking about the rail and road infrastructure is connected with seaports, which served as hubs for Ukrainian foreign trade in pre-war times; secondly, the extremely low capacity (narrowness) of rail and road infrastructure, which does not compensate for the capacity of ports due to the forced redirection of cargo flows abroad by overland routes. The blockade and seizure of seaports, sea coasts and maritime transport corridors by the aggressor effectively stopped foreign economic activity, from which about 50% of the country's GDP was generated in the pre-war period. The high level of wear and tear and the extremely insufficient number of rail and road vehicles, and the lack of logistical hubs not connected to the sea, prevent the country from quickly reorienting its foreign trade turnover geographically and technically to use only railways and road vehicles. This poses additional risks of economic collapse for the country;

– high vulnerability to destruction of industrial, logistics, municipal facilities, residential and social buildings, due to their design and construction according to peacetime standards, which did not take into account the probability of significant destruction as a result of military actions. This fact determines the additional losses of the economy and the subsequent considerable costs of rebuilding what was destroyed, while the resource (financial, material and technical) base for recovery was substantially reduced as a result of the war;

– the country's critical dependence on external military-technical aid from allied countries, in particular the supply of modern lethal weapons and non-lethal military-technical equipment, against the background of the actual decline of Ukraine's military-industrial complex, the state's failure to pay sufficient attention to the problems of its reform and modernisation, the establishment of its own scientific and technological production of high-tech and high-precision weapons, while external military threats intensified over the past decades.

Due to these shortcomings, together with the technological and structural backwardness of production, economic losses due to military action and the damage it caused during the first six months of the war, since the full-scale invasion by the Russian Federation, according to preliminary estimates of the Ukrainian Ministry of Economy, already total over USD 600 billion. This includes the destruction of industrial, military, civilian, and infrastructural facilities. Overall, according to the Prime Minister of Ukraine, economic losses could exceed $1 trillion USD.

In order to overcome these shortcomings, ensure quality post-war recovery and appropriate structural transformations, the concept of an entrepreneurial state should be translated into a significant increase in the organizing and coordinating role and share of the state in economic processes with a clear and comprehensive design of balanced economic, social and spatial development, rather than further deregulation in the context of destroyed markets, which in Ukraine led to economic backwardness and deindustrialization even before the war. The policy should be endogenously oriented, in other words, focused primarily on meeting domestic consumer and investment needs through Ukraine's production, and only then on the needs of the world market. This will generate the effect of the "circular cumulative causality" of industrialization (Myrdal, 1957) – linking the growth of production (supply) with income (demand), stimulating the development of related areas, education, science, and infrastructure.

In this context, an important task for the state is to maintain the capacity of traditional and create new markets for industrial products for domestic producers by applying reasonable protectionism and using the significant potential of public consumption (public procurement, state order). Rash decisions that narrow the market for domestic products under pressure from foreign lobbyists or the "street" should not be made, as this can result in production stoppages and job losses. It is inappropriate to give preference in public consumption to foreign products if similar products are produced or can be produced in Ukraine.

In carrying out structural changes, foreign capital should be treated with caution, and preferential conditions should be created to attract it only to priority sectors to ensure technological borrowing, organize joint ventures, and localize production within the country. The state should work with foreign investors on an equal partnership basis and not expect that without its intervention, a foreign investor will be able to restructure and build a high-tech, innovative Ukraine's economy in the priority areas of sectoral changes determined by the state. This did not happen in Ukraine over the past thirty years and will not happen in the future, at least because the interests of foreign business and the areas of investment, as

Ukrainian reality showed, fundamentally do not coincide with the need of restructuring production and the interests of Ukrainian society as a whole.

Without the active participation of the state in attracting foreign capital to predetermined areas, the latter sees the country only as a production site with cheap labor, significant land, and natural resources, which it seeks to get at its disposal, ignoring the needs of the country itself and its population. In addition, we should not forget about the factor of malicious foreign investment, which is becoming increasingly common in the world and has already been faced not only by developed countries but also by Ukraine itself[2] These investments undermine rather than develop the economies of recipient countries. Also, one should not place excessive expectations on the benefits of including Ukraine's production in global value chains (Rodrik, 2018). In this case, the state will not be able to determine the directions of its economic and social policy sovereignly, in the interests of its own population, but will do so under external pressure and in the interests of multinational companies – owners and coordinators of these chains.

Conclusions

The policy of structural transformation and post-war recovery in Ukraine will be successful if it is implemented in practice to shape and implement the concept of an entrepreneurial state while building structural and fundamental factors of development. This means both the allocation and state support of sectoral development priorities that will become growth drivers, as well as the development of education, infrastructure, and R&D to produce Ukraine's innovative products and technologies for civilian and defense purposes in the long term. We should abandon the focus on using only current competitive advantages (cheap resources), which led to the

[2] *An example of malicious investment in Ukraine is the acquisition by a dubious Chinese company of one of the flagships of the domestic aircraft industry, the private enterprise MotorSich. The new owner did not hide his plans to transfer production along with the transportation of key specialists to China to further master Ukrainian technologies for the manufacture of aircraft engines for helicopters and to establish their production in his country, including by order of the aggressor country, the Russian Federation.*

deindustrialization and agriculturalization of the economy. The development of structural and fundamental factors should be focused on the formation of promising competitive advantages based on knowledge and technology, which will allow to change in the structure of production in Ukraine, overcome its technological backwardness, and increase the welfare of the country's population.

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INFORMATION TECHNOLOGIES IN THE CORPORATE CULTURE OF AUDIT

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Abstract
We consider the organization of the audit in the computer environment. Determined that efficiency audits significantly increased with the use of auditor's specialized software. In this article, we have explored the essence of the concept of "corporate culture" and its main characteristics. We have identified that staff, organizational structure, leaders, environment, and control processes are key elements of the corporate culture. In order to conduct an audit of staff in corporate culture, it is established that communication and audit procedures are required in three different ways: face-to-face communication,

anonymous communication, and non-anonymous correspondence. We have also identified the need to integrate information technology into all staff communication processes to minimize the resources expended and the time spent by both parties: the client and the auditor. We conclude that the use of information systems is one of the best auditor decisions to improve the efficiency of the corporate culture of the audit. Modern changes in the business environment will not only affect the restructuring of the corporate culture of companies but will increase the need for the use of information technology by auditors during the audit of the corporate culture.

Keywords: *audit, information technologies, corporate culture of audit, applied computer program audit, performance audit.*

Formulation of the problem

Computerization of accounting and analytical work has given impetus to achieve significant results in the activities of business entities, has reduced production costs, and reduced the number of management staff, which in turn leads to profitable work and profitability. Today, in particular in large enterprises, no financial transaction is possible without a computer.

Automation and computerization are one of the most important stages of innovative technologies. The economic literature claims that the most developed countries of the West, and Eastern European countries, including Ukraine, have undergone computerization. Intensive development of electronic computing and technology, the use of applied accounting programs has created a significant positive impact on the effectiveness of the audit and improving its methods.

Computer processing of accounting data provides automated collection and processing of information needed to optimize management in various areas of activity. Improving audit work in accordance with market requirements, to some extent, depends on the computerization of accounting and analytical systems, automated issuance of documents, and their storage. The most effective way to solve the problem is a clear, timely, and reliable method of the audit each object of accounting.

Now, in 2023 in Ukraine, the corporate culture of any enterprise will change and adapt. According to statistics, we will see how many companies will go bankrupt, how many of them will be ineffective during the year, and how many will be able to work actively and effectively during the crisis. And so we will be able to estimate how many enterprises in Ukraine have a healthy corporate culture. After all, an unhealthy corporate culture is a reason why companies leave the market. Establishing the actual state of corporate culture is the purpose of the corporate culture of the audit. Auditors try to save the client’s time and resources and make the audit as efficient as possible. Thus, there is a need to use information technology during corporate culture audits.

Many economists have studied the key aspects of conducting a corporate culture of audit and integrating information technology into audit. Some aspects of theoretical, organizational and methodological support of the audit in the conditions of information technologies in different periods of development of science and practice were investigated by: Bouman G. (2018), Honcharuk S. (2021), Ivakhnenkov S. (2021), Kudirko O. (2018), Lisova R. (2019), Nezhyva M. (2020), Kovalevska N. (2021), Rachinger M. (2018), Sokolenko L. (2019), and others. However, the problematic and debatable issues that have been left out of these scholars need a solution to formulate a comprehensive approach to audit digitization in an economic transformation and the limited business practices caused by the global pandemic, war.

Presenting main material

In recent years, the public has been increasingly paying attention to audit activities, as confidence in the information received is a necessary factor in the partners’ trust. In this regard, the market for audit services in Ukraine is transformed by the directions and interests of clients who work in different business sectors and differ in ownership, management systems, and financial condition. As more and more data is generated in connection with the digitization of companies, there is a need to develop auditor functions. For example, they include the audit practice of forensics, tax audit, due diligence, management accounting, personnel audit, and other related services. These audits and other services require an emphasis on understanding the specific risks of the business and developing an audit approach that is capable of responding effectively to those risks.

Computer technologies are also becoming more involved in the new role of an auditor as they shift from testing tasks to more analytical approaches related to working with data. The growing amount of information needs to be used effectively for high-quality audits and to enable auditors to focus more on risk identification and business understanding. The large volume and untapped potential of data generated by new technologies necessitate constant audit digitization. The functions of a professional auditor are changing in response to the digital transformation of companies. Using automation to increase data volumes can help to conduct high-quality audits and allow auditors to focus more on risk identification and business understanding. This development of the audit leads to greater interconnection and transparency and, as a consequence, greater stakeholder trust (Sidhu, 2019).

Auditing and analysis of records based on specific criteria are carried out with the help of software tools to determine their quality, completeness, richness, and correctness. For this, a knowledge base is used, which helps to identify inconsistencies and make the necessary decisions. The software allows you to test the calculations, perform the necessary calculations and compare the obtained results with the normative ones, which makes it possible to carry out an analysis according to the specified criteria and receive an adequate management decision (Volot, 2021).

The use of information technology affects audit tasks, which are changed due to research on the effectiveness and reliability of the functioning of the information system. Conducting a check in the information system requires the active use of computerized audit methods. The spread of audit information technologies leads to full or partial automation of auditors' work (Honcharuk, 2021).

A lack of the necessary knowledge can lead to doubt about the auditor's competence and conclusions. In addition, businesses are wishing not to publicize the data and may not like that many individuals will have access to their information.

Electronic business uses a variety of information technologies: electronic commerce technologies, electronic auction technologies, electronic banks, IP telephony, Internet telephony, electronic indicator technologies, electronic franchising, electronic mail, electronic marketing, electronic management of operational resources, electronic supply management, electronic brokerage services.

With the introduction and application of computer information technology, the overall purpose and scope of the audit will not change. Auditing in the IT environment and with the use of IT combines the features of social, natural, and exact sciences, and deals with research objects, which are conceptual systems, natural systems, and abstract systems. The structure of the method of economic control and audit is proposed (Ivakhnenkov, 2021).

Accelerated technological development obliges accounting and management specialists to permanently update knowledge and skills, a complex combination of knowledge about economic informatics, data processing and transmission technologies, modeling of economic processes, and interpretation of information (Nezhyva, 2020).

Auditors can use and actively apply information technology both to improve the audit methodology and to automate their organization. From an organizational point of view, the audit should be considered as a computer, which involves the use of computers and modern information technology, which is directly organized by the audit activity in the management information systems environment. This approach involves the use of information technology in the planning, control, and documentation, in the course of the audit and the preparation of the audit report. The use of personal computers in the audit allows for reducing the time spent on its conduct and as a result, creates new opportunities in the organization and methodology of its conduct.

The auditor should have computer programs used to verify the contents of the enterprise files, as well as control data used for computer processing to verify the functioning of the enterprise computer programs.

The main areas of effective audit automation are the selection of the optimal software, taking into account the specifics of the methods and features of conducting the audit; economic analysis and evaluation of the effectiveness of the use of the information system; overcoming the risks associated with the problems of organizing the auditor’s automated workplace and overcoming the auditors’ psychological and professional barriers (Kudirko, 2018).

Nowadays, there is a need and at the same time the possibility of new organizational and methodological approaches to solving accounting and audit problems. They are connected, on the one hand, with the transition to market relations and international standards, and on the other, with the widespread adoption of computer technologies.

Information technologies used for accounting and reporting have a significant impact on the competitiveness of the decisions made, as they increase the speed of reporting and the reliability of management information by automating the procedures for its collection and processing.

As the composition of risks affecting the business of companies is constantly changing, and the organizational structure of companies is complicated in the development process, there is a periodic need to replace one information system with another. Company management often decides to update the information system only on the basis of experience of using different systems in other companies and comparing their organizational structure with the structure of their company. As a result, enterprises incur inefficient costs associated with the implementation of information systems, as this process is delayed, and goes beyond the original budgets, testing programs and disclosing to staff their functionality is often carried out formally, as a result of which program functions are not fully used.

A market economy implies an increase in the requirements for baseline analytical information to support managerial decision-making. Methods of analysis on the basis of electronic computers can satisfy the requirements of complexity, systematicity, efficiency, accuracy of cognition, trends, and patterns of change and development. With the maximum formalization of analytical procedures with the help of electronic computers, up to 80% of the technology of the economic process is implemented.

The main information control systems presented in the Ukrainian market are aimed at audit automation. Strengthening the audit position in Ukraine, and bringing it closer to international audit standards and principles, requires updating the ability and efficiency of using the latest audit organization technologies based on the use of the latest information technology.

To conduct an audit in a computer environment, the auditor must have additional knowledge in the field of economic information processing systems and practical experience with various accounting systems and special audit information systems. To begin with, it should be noted that conducting an audit in a computer environment is based on international auditing standards. International standards of quality control, audit, inspection, other assurance, and related services define ISAs as related to the audit of automated processes of the enterprise.

The main control information systems presented on the Ukrainian market are aimed at audit automation. Strengthening the position of audit in Ukraine, and its approximation to international auditing standards and principles requires updating the ability and effectiveness of the latest technologies of audit organizations based on the use of the latest information technologies.

Today, audit firms have developed and use special information systems focused on the internal regulation of auditing activities using internal firm standards.

The use of computers affects the organization of financial and management accounting, as well as the methods and techniques of internal control in the enterprise.

Accordingly, the electronic data processing system can significantly affect the procedures used by auditors in the study and evaluation of the accounting and internal control system, as well as the content, timing, and scope of audit procedures.

When conducting an audit, the auditor may use a computer for both manual accounting and automation of accounting. Therefore, in the first case, the auditor needs to solve the problem of having the necessary software to audit accounting records for all business transactions or final records of the relevant final documents (registers). In the second case, the audit of the economic entity should only apply the appropriate program of relevant information technology.

Auditors also use electronic directories of various tax rates, bank interest rates, exchange rates, allowable advertising costs, entertainment expenses, travel expenses, minimum wages, tariff grid rates, and other important evidence.

It should be noted that today auditors use not only software products directly related to the audit, but also the most convenient for us simplified Microsoft Office programs, such as Word, Excel, etc.

All these indicators characterize the level of quality of the audit program and affect the productivity and effectiveness of the audit. Both general testing and quality assurance technologies and programs designed specifically for these areas can be used to verify the security of programs.

Accordingly, it is noteworthy that with the increase in the number of audits conducted on the basis of the use of applications, the time spent on the audit is significantly reduced, which is a positive factor in the audit activities of domestic audit firms.

The rapid development of information technology creates new opportunities for the analysis of large arrays of information, as well as their use to improve the efficiency of government agencies, in this regard, the Ministry of Finance of Ukraine presented the concept of electronic audit of taxpayers from 2023 to 2027. Taxes are carried out through the use of a standard audit file (SAF-T), in the form of which information is submitted to the supervisory authority. After receiving the file, the software analyzes the data according to the established risk criteria. Then, before the inspection, there may be clarifications and explanations about the information received. Thanks to this, taxpayers can personally correct the identified errors in the application of reduced sanctions. Automation of tax audits will reduce the impact of the human factor in the process. Also, e-audit can reduce the burden on taxpayers and the supervisory authority. Finally, the results are tax audited.

Current trends look like the future of computer audits. Such activities will cover aspects that are closely related to the statutory audit of financial statements, but at the same time cover a wide range of consulting services that auditors may provide:

- verification of algorithms of computer accounting systems of enterprises as audit clients and consulting on the issues of their proper construction;
- analysis of large arrays of financial and operational data in electronic form by special software to confirm and detect fraud;
- analysis of the activity of the enterprise and their forecasting with the help of a powerful mathematical apparatus of economic modeling and software;
- assistance to the company in matters of information security.

Lack of information is referred to as a major factor limiting the growth of audit automation, along with such a factor as the poor quality of the proposals available. However, for the most part, audit firms find it necessary to incorporate information technology into their operations, and expect that this will help improve their efficiency and quality.

Data protection in computer networks is becoming one of the most urgent problems in modern information and computer systems. The concept of data protection when using electronic computers includes both the development and implementation of appropriate security methods and their constant use of them. Modern information technologies create conditions for the growth of unauthorized access to information and allow the performing of complex procedures for its processing.

To ensure the protective functions of the audit, data protection avoids the abuse of persons who have access to databases, which is especially common in doing business over the Internet. Practice shows that in the context of automated information processing systems, thefts of value are carried out with the participation of employees engaged in the processing of economic information. The main purpose of data protection of electronic computers is to prevent phenomena that adversely affect performance. Blockchain technologies provide the highest level of protection against external influences. The data contained in the system cannot be deleted or replaced. Such a database is characterized by anonymity, an agreed mechanism, it is not owned by a specific entity, and is not controlled or regulated by third parties. All functions in a blockchain system are distributed among its members, who pre-approve changes that may occur in the system. Thus, it is virtually impossible to make changes and edit after the transaction. Based on the above, blockchain technologies are ideal for accounting and audit because they keep track of all transactions and changes to the system, and prevent manipulation and distortion.

There are four key reasons why a properly built corporate culture is vital for business:

- it is directly related to team productivity. A powerful corporate culture is equal to productive work;
- culture is volatile. Good corporate culture is equal to a culture that can adapt to transformations in the internal and external

environment;

• culture influences changes in the company's business processes. Good corporate culture is equal to successful transformation. It doesn't matter whether the changes are related to the launch of a new product, attracting larger customers, expanding activities, reorienting to another type of activity, or merging with other companies. All of these transformations will be fast and manageable if the company has a healthy corporate culture;

• unhealthy corporate culture is equal to business collapse. It is proved that one of the key reasons for bankruptcy is the unhealthy corporate culture or its absence.

Corporate culture is the result of a vision or mission that a company aims to achieve, a set of values that govern employee behavior, as well as managerial practices and labor standards that characterize how work is performed. So, we can see that the corporate culture center is the employee.

Therefore, we see that the center is an employee who works for the achievement of the whole company, who is the main carrier of the company's values, who is subordinate to management practices, and who creates an appropriate business environment. Thus, people are the main object of the corporate culture of the audit.

Employees are a core asset of the corporate culture. That is why the auditor should concentrate on their study. For the best interaction, elimination of wasting time, elimination of the threat of distortion of words of employees, to get the most out of them, the auditor should use information technology in his/her activity. If the auditor is unable to work in the client's office, the need for information technology increases. The inability to work in a client's office may be due to the fact that the client is located in another region or country, or a quarantine is introduced in the country.

So, in the corporate culture of audit, core engagement is down to people.

However, the auditor doesn't audit the staff in the usual way. That is, the auditor doesn't check the correctness of documentation about employees, the availability of job descriptions, the correctness of HR processes, etc.

Audit of human resources in the corporate culture of audit is designed to establish the loyalty of the staff to the current culture, the main factors of employee dissatisfaction or satisfaction with such culture, and so on.

Through direct communication in the form of interviews, the auditor gets a complex vision of the existing corporate culture. The availability of audit time will determine who will be interviewed: usually, these are senior executives, department heads, and individuals with whom the management advises to communicate because of their important functions. Interviews can be conducted in two ways: in-person or remotely. Remote interviews use a variety of IT technologies.

The following services can be used for interviewing: Skype for Business, ezTalks Cloud Meeting, GoToMeeting, Zoho Meeting, Zoom Meetings, Google Hangouts, CyberLink U Meeting, Lifesize, BlueJeans, BigMarker Web Conferencing, Cisco Webex, GlobalMeet Collaboration, Microsoft Teams, Ryver, TeamViewer, Cvent, Samepage, ReadyTalk, BoardPAC, Diligent Boards, 24sessions, Boardable, Azeus Convene, Vectera, eyeson and others. However, in practice, one of the best remote conferencing software is Zoom Meetings. The popularity of this program has been confirmed by some media. For example, the informational resource delo.ua has identified that during isolation, the Zoom service is becoming popular because it helps remote teams keep in touch, and discuss current issues for work tasks. Phone calls are now the most inefficient way to communicate if there are more than two people on the team. However, such services can also be used with clients. Because remote client work is a normal situation in audits. Remote services can be used to clarify between executives, discuss audit results, clarify specific issues, etc.

The second type of customer communication is correspondence. For this purpose, the most commonly used services are Microsoft, Google, Viber, Telegram, Bitrix24, WhatsApp, JivoChat, DialMyCalls, HipChat, Basecamp, RedBooth, and others. These software products and services help the auditor communicate with the client’s employees quickly.

Such services can be used in such audit procedures as surveys, and questionnaires.

In such a situation, the auditor is faced with the problem that employees don’t want to provide such information, knowing that their names can be used as a source of information. So the third type of communication is anonymous communication. In addition to interviews, they are the second most important source of obtaining all the information required for auditors.

Anonymous questionnaires can be conducted to determine what values are really the basis of the company's corporate culture.

Anonymous questioning allows the auditor to gain a complete understanding of the corporate culture from most employees, and to formulate recommendations based on the comments that employees make through anonymous emails. The following services should be used to provide anonymous communication: Google Forms, Onion Routing, and PipeNet.

The auditor may also use a variety of programs and services to summarize the digital results of surveys, questionnaires, and other analytical procedures. These include, for example, Tableau, QlikView, Power BI, Looker, BrightGauge, Sisense, GoodData, Datapine Business Intelligence, DBxtra, AVS, Knowi, Domo, and others.

Thus, the most valuable employees are the holders of corporate values. The purpose of creating the right corporate culture is to have all employees as such holders. Transparency of communications and demonstration of values in action not only ensures a good reputation of the company among partners and consumers. But it also strengthens the unity of the team. Corporate culture should shape people as a single mechanism. To build such a strong corporate culture, companies use the services of an auditor who can provide them with a list of recommendations: what goes wrong and how to fix it. Modern changes in the business environment will not only affect the restructuring of the corporate culture of companies but will increase the need for the use of information technology by auditors during the audit of the corporate culture.

Conclusions

Thus, modern auditing is very closely related to information technology. In this regard, the growing degree of automation of the accounting process in domestic enterprises – increases the impact of computerized accounting system on the reliability and completeness of information that was generated in the reporting. It can be argued that the effectiveness of audits increases significantly with the use of specialized software products by auditors themselves. The time of the audit, compared to the traditional method of conducting, is significantly reduced. In this regard, the possibility of conducting related audit services is expanding and this improves the quality of customer service.

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STRUCTURAL EQUATION MODELLING IN RELATIONSHIP STUDY BETWEEN THE QUALITY OF MEDICAL SERVICES AND PATIENT SATISFACTION AND LOYALTY

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Abstract
The authors developed an algorithm for studying the relationship between the quality of healthcare services, patient satisfaction and their intentions of loyalty. It is proved that patient satisfaction mediates the perceived quality of healthcare services and the intentions of customers' loyalty. The authors improved the methodology for assessing the healthcare services quality for healthcare organizations based on the SERVPERF method, identified three constructs that shape the perception of quality of healthcare services by the patient (staff, communications and physical evidence), built a model "Perceived patient quality of healthcare services", which establishes correlations and covariance relationships between model constructs. A "Structural model of the relationship between the perceived quality of health care, its components and loyalty, mediated by patient satisfaction" has been built.

Keywords: *healthcare organization, healthcare services quality, structural equation modelling (SEM), patient satisfaction, loyalty.*

Introduction

Consumer satisfaction with the medical service is a key factor and a prerequisite for the formation of effective marketing competitive strategies of health care facilities, which is substantiated by conducting marketing research based on a survey using the SERVPERF methodology, structural equation modelling (SEM), methodology and modern information technologies for collecting and processing statistical data: Google-forms, SPSS STATISTICS 17.0 and LISREL 8.80 packages.

The purpose of the study is to improve theoretical and methodological principles and develop scientific and practical recommendations for the formation of a competitive marketing strategy of institutions in the market of medical services. In order to achieve this goal, we conducted a survey of respondents to find out the degree of consumer satisfaction with the medical services of health care institutions, carried out a comprehensive assessment of the perceived quality of medical services, established relationships between quality, patient satisfaction and loyalty, and built a corresponding model.

Materials and Methods

There are the following methods of measuring the degree of consumer satisfaction: a system for collecting complaints and suggestions; survey on the degree of consumer satisfaction; “mystery shopper” method; analysis of the reasons for the reduction of customers.

Results and Discussion

In the field of health care, studying the opinion of patients regarding the provided medical service is a component of the quality control of medical care (clause 7 of the Order of the Ministry of Health of September 28, 2012 No. 752 "On the procedure for quality control of medical care") (Order of the Ministry of Health, 2012). The satisfaction of patients with medical services determines their consumer behaviour: expressing positive feedback about health care facilities, the preference of this medical facility in case of need for help, increasing the frequency of visits to the hospital, willingness to pay for higher-cost services. At the same time, dissatisfaction with the medical service leads to negative behavioural reactions (negative feedback about the Health Care Organisation, reducing the cost of receiving a service at this institution or receiving it from other service providers).

The survey of patients of private and communal health care facilities was conducted by us using a questionnaire developed using the SERVPERF method and was devoted to studying the relationship between the actual (perceived by the patient) quality of the provided medical service, satisfaction with this service and intentions of loyalty to the institution (Mishchuk, 2021). The research algorithm is shown in Figure 5.1.

For scientific research, we chose the SERVPERF (SERVICE PERFOMANCE) method proposed by Cronin J.J., Taylor S.A. (1994). The main conclusions made by the authors are that the study of the nature of the attitude of consumers to various characteristics of services allows, even at the initial stage of planning, to evaluate the most important and valuable characteristics of the service from the point of consumer satisfaction view, as well as to determine those characteristics, the improvement of which will give the greatest result.

The questionnaire we developed for the study consisted of three blocks of questions: the first block – to find out the patients' assessment of the quality of medical services; the second – to determine the level of satisfaction; the third – to identify loyalty intentions. Accordingly, 22 statements were proposed for quality assessment, to each of which the respondents had to give an answer on a seven-point Likert scale (1 – strongly disagree, 7 – completely agree).

The statements were grouped into five stimuli: Tangibles – questions Q5_tangib, Q15_tangib, Q17_tangib, Q19_tangib, Q22_tangib; Reliability – questions Q3_relyab, Q7_relyab, Q8_relyab, Q9_relyab, Q12_relyab; Responsiveness – questions Q6_respons, Q11_respons, Q13_respons, Q14_respons; Assurance – questions Q10_assur, Q18_assur, Q20_assur, Q21_assur, Empathy – questions Q1_empath, Q2_empath, Q4_empath, Q16_empath.

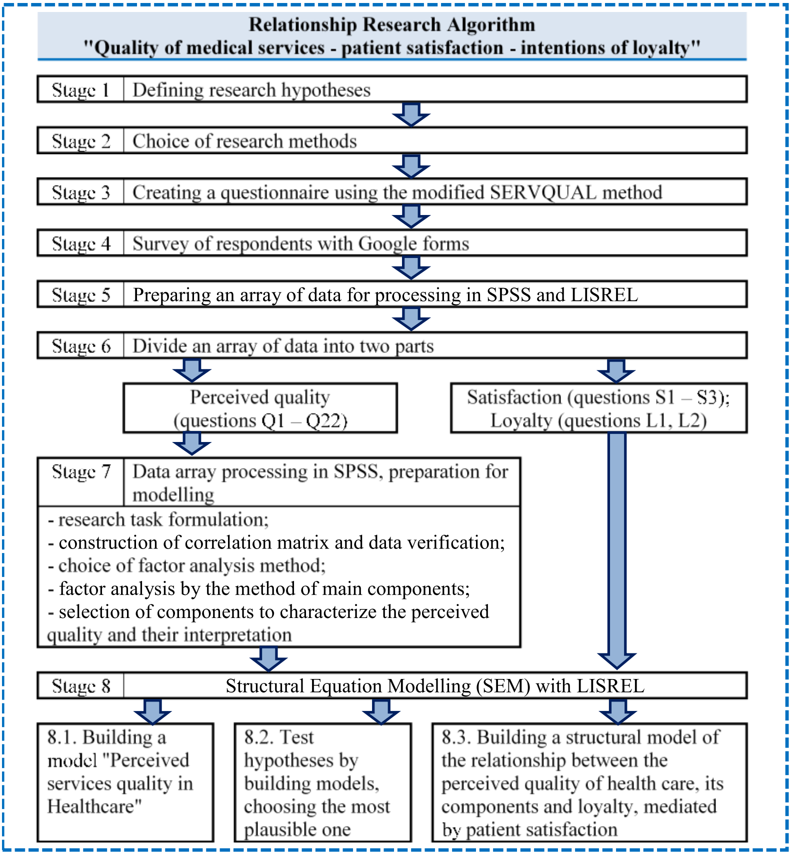

Figure 5.1 Research conducting algorithm for relationship between the Healthcare services quality, Patient satisfaction and their Loyalty intentions

Source: compiled by the authors

Patient satisfaction was measured using an overall satisfaction score. Three questions were used: S1 “How would you rate the overall quality of services provided by your hospital / doctor”; S2 “Thinking about the hospital (doctor) in general, please evaluate the benefits you received for the money spent”; S3 “In general, how satisfied are you with the chosen institution”. They were measured on a ten-point semantic differential scale from 1 to 10 (1 – completely satisfied, 10 – completely dissatisfied).

The structural element of the “Loyalty Intentions” questionnaire was measured by two questions using a seven-point Likert scale: L1 “Would you recommend this institution (doctor) to other people if such a need arose” and L2 “Did you feel safe enough while receiving the service so that later recommend the institution (doctor) to others” (1 – categorically do not recommend, 7 – definitely recommend).

The stages of analysis of the collected data included: problem formulation, construction of a correlation matrix, selection of the method of factor analysis, determination of the number of factors, rotation of factors, interpretation of factors, and evaluation of the suitability of the model.

To find the relationship between the three blocks of the questionnaire, a model was built using structural equation modelling (SEM) using SPSS STATISTICS 17.0 and LISREL8.80.

It is important for the model building process to process data using the method of principal components and identify those variables that are most closely correlated with each other, that is, have the smallest variance relative to the selected vector in multidimensional space.

So, three components were identified that characterize the concept of “quality of medical service in the perception of the patient”, based on the content of the questionnaire developed by us: 1) staff characterized by the following qualities: kindness, care, willingness and desire to help, empathy, responsibility, reliability, politeness; 2) communications: the obligation to inform patients, in advance, at the appropriate level, in an accessible form about the methods and methods of providing medical services and their cost; availability of informative materials at the place of service provision; 3) physical evidence: the sanitary and hygienic condition of the premises, the visual appeal of the interior, the pleasant appearance of the staff, the convenience of the work schedule.

The isolation of three components made it possible to proceed to the testing of hypotheses regarding the possible relationships between the three parts of the questionnaire, the construction of intermediate and main models (the 8th stage of the algorithm), the assessment of their suitability and plausibility using SEM. For this, we used one of the available software packages – LISREL from Scientific Software International Inc., which is compatible with the

SPSS Statistics package. The applied version of LISREL 8.80 (Student) has limitations on the number of explicit (measured) variables (up to 12) and the number of characters in their names (up to 8).

We chose the simplified and pragmatic approach outlined by Malhotra N., Lopes E., Veiga R. (2014). The procedure proposed by the authors consists of five stages: development of a schematic diagram of the model, preparation of a graphic illustration of the model, analysis of measurements of the structural model, verification of indicators of conformity of the model, interpretation of the structural model. Because models tested by SEM rely on theoretical considerations, their fit with empirical data is tested by the researcher.

It is worth noting that SEM in LISREL allows for the simultaneous estimation of a number of separate but interdependent equations, including in the calculation both latent (graphically represented as an oval) and manifest variables (in the form of rectangles) and measurement error (values are displayed without figures), checking direct, indirect and total relationships, although there are variables in the model that act as both dependent and independent variables. Each relationship between variables is indicated in the program by two types of arrows and is derived from previously proposed hypotheses: unidirectional ones mean a causal or causal influence – it is also called “effect”, and bidirectional ones, which reflect correlation between variables or covariance between residuals unexplained variances of manifest variables.

The model is statistically tested based on the simultaneous analysis of all variable matrices, which makes it possible to assess the quality of correspondence between the theoretical models and the data used in the analysis.

The quality and plausibility of the model is repeatedly tested by gradually making changes suggested by the program: including or removing relationships between variables. Adding correlations reduces the number of degrees of freedom (df) of the model, and the p-value and RMSEA indicators are normalized and allow a quick assessment of the changes made, in addition, it is possible to review the goodness-of-fit indicators of the model by selecting the appropriate menu command. Convergent validity and discriminant validity are checked according to the parameters of the obtained structural model.

A high loading (>0.60) of explicit variables within the limits demonstrates the convergent validity of the constructs, the presence of sufficient discriminant validity is evidenced by the coefficients of covariance between the latent variables, which should not exceed 0.85.

So, the model “The quality of the medical service perceived by the patient” included 4 latent variables and 12 predictors, taking into account the content of which it can be verbally formulated as follows: “The quality of the medical service perceived by the patient is formed by three main components, each of which, in turn, is perceived a service consumer due to a certain set of characteristics: staff – should be polite, friendly, show care and desire to help, inspire trust, understand needs and provide service on time; communications – patients should be properly and in advance informed about the options for providing services and their cost, a complete, clear and comprehensive price list should be available; physical evidence – the work schedule of the health centre should be convenient, the premises should be visually attractive and clean, and the equipment should be modern”.

The indicators of the intermediate model “The patient’s perceived quality of the medical service” were within the normal range, which made it possible to include it in the structural model of the relationships between the perceived quality, the medical service, its components and loyalty, mediated by patient satisfaction, built in the next step of the study. To summarize, the results of the patient survey proved the importance of consideration on healthcare service characteristics that we have highlighted, their impact on patient satisfaction and loyalty.

Since the LISREL program requires the researcher to be parsimonious about the number of variables (no more than 12), five predictors of the construct "Perceived quality by the patient". The final model includes 7 manifest variables characterizing the latent variable Q, 3 manifest variables for characteristic S, and 2 for L. The authors of the SEM guidelines in LISREL suggest eliminating manifest variables that show the lowest loadings, but we used the analysis of the questionnaire questions themselves, checking, so that the selected questions are not similar in content and that the indicators of conformity of the simplified model are within the norm. The process of testing hypotheses of relationships was carried out according to a similar algorithm for building models and checking their quality and plausibility, as a result, it was proved that patient satisfaction mediates the perceived quality of medical services and the loyalty intentions of their consumers, the model “Structural model of relationships between the perceived quality of medical services" was formed, its components and loyalty, mediated by patient satisfaction” (Figure 5.2). Quality indicators of model fit are within the normative values (Table 5.1).

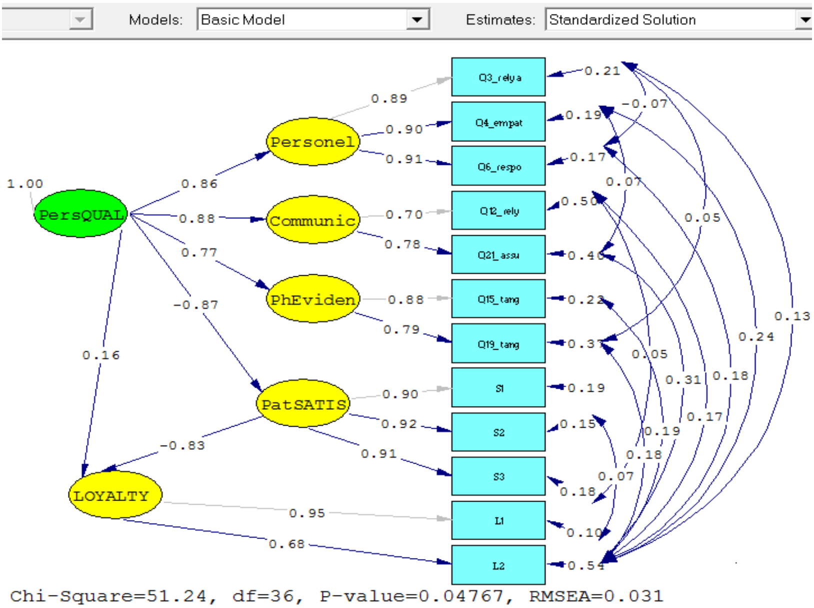

Figure 5.2 Model “Structural model of relationships between the perceived quality of the medical service, its components and loyalty, mediated by patient satisfaction”

We offer to verbally formulate the obtained model, which contains six latent variables and twelve predictors, as follows: “The quality of the medical service is perceived by its consumers due to the reliability, responsibility, responsiveness of the staff, under the conditions of proper information about possible methods of treatment and its cost and the presence of modern, in the proper sanitary-hygienic and technical condition, material base, indirectly - through patients' satisfaction with the service received - affects their loyalty intentions".

Table 5.1

Model Goodness of Fit Indicators

Indicator	Reference values	Actual values
Chi-Square ($X^{2)}$	-	51,24
df	-	36
Chi-Square / df	<5,00	1,42
p- value	<0,05	0,048
Root Mean Square Error of Approximation (RMSEA)	<0,08	0,031
Non-Normed Fit Index (NNFI)	≥0,90	1,00
Comparative Fit Index (CFI)	≥0,90	1,0
Root Mean Square Residual (RMR)	≤0,05	0,071
Goodness of Fit Index (GFI)	≥0,90	0,98
Adjusted Goodness of Fit Index (AGFI)	≥0,90	0,96
Parsimony Goodness of Fit Index (PGFI)	≤0,67	0,45

Therefore, we have developed an algorithm for conducting a study of the relationships between the quality of medical services, patient satisfaction and their loyalty intentions. The assessment of the quality of medical services for health care facilities was carried out using the SERVPERF method, and the model "Perceived quality of medical service by the patient" was built, which establishes correlation and covariance relationships between the constructs. The methodology for assessing the quality of medical services for Health Care Organisations based on the SERVPERF method has been improved, three characteristics (constructs) that shape the patient's perception of the quality of a medical service (staff, communications, and physical evidence) have been identified, the corresponding model "The quality of a medical service perceived by the patient" has been built, which establishes correlational and covariance relationships between model constructs.

A “Structural model of relationships between the perceived quality of the medical service, its components and loyalty, mediated by patient satisfaction” was formed. It has been proven that patient satisfaction mediates the perceived quality of medical services and the loyalty intentions of their consumers.

Conclusions

Consumer satisfaction with healthcare services is determined by a key factor and a prerequisite for the formation of effective marketing competitive strategies of HCO, which is justified by conducting marketing research based on surveys using SERVPERF, Structural Equation Modelling methodology and modern information technologies for collecting and processing statistics: Google-forms, SPSS STATISTICS 17.0 and LISREL8.80 packages. The authors developed an algorithm for studying the relationship between the quality of healthcare services, patient satisfaction and their intentions of loyalty. It is proved that patient satisfaction mediates the perceived quality of healthcare services and the intentions of customers’ loyalty. The authors improved the methodology for assessing the healthcare services quality for HCO based on the SERVPERF method, identified three constructs that shape the perception of quality of healthcare services by the patient (staff, communications and physical evidence), built a model “Perceived patient quality of healthcare services”, which establishes correlations and covariance relationships between model constructs. A “Structural model of the relationship between the perceived quality of health care, its components and loyalty, mediated by patient satisfaction” has been built.

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Chapter 6

FOOD SECURITY AND ENVIRONMENTAL ASPECTS OF MANAGING SOCIO-ECONOMIC SYSTEMS

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FORMATION OF THE INNOVATIVE MODEL OF AGRARIAN ENTERPRISES FUNCTIONING BASED ON ECOLOGIZATION AND STEADY DEVELOPMENT IN UKRAINE

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Abstract
Aim of the research is to develop a new innovative model of developing agrarian enterprises, which will make possible to increase their competitiveness at the expense of implementing modern technologies, types of produce, methods of management, strategy of development.
The methodology of forming the innovative model of development at agrarian enterprises considered two types of analyses (internal and

external) and included the following stages: analysis of the existing situation; analysis of the external environment; formation and selection of the optimal development strategy; implementation of the selected strategy; monitoring over the process of implementing the strategy.
Novelty is determined by the implementation of the process of greening the agricultural production in the context of applying alternative management systems, in which agrarian enterprises are considered as the economic-ecological system, which is based on rational and ecologically grounded methods of production, by providing the quality of the produce and raw material, production efficiency as well as the minimal impact on the environment and production efficiency.

Keywords: *innovative model, steady development, agrarian enterprises, ecologization of the agrarian production, organic produce, innovative strategy of development.*

Introduction

The main trend in modern development of agribusiness is globalization of the economy, which is the multi-faceted and complex process, which is connected with the development of human activity and reveals additional opportunities and economic benefits for all countries in the world. At the same time, this process causes negative consequences, which are manifested mainly in the anthropogenic impact on the environment. There has been a sharp increase in the negative impact of economic activity of a society on the environmental condition during the last few decades. It mainly concerns the area of agrarian production, which is mostly sensitive to any involvement into the development of agrarian ecosystem. Moreover the actual issue for Ukraine and many other countries in the world is the provision of population with high-quality and safe food products. At that, the main requirements are set not only for the quality of the produce but also for the environmental conditions.

Modern condition of the market transformation in Ukrainian economy should foresee the transition from the extensive economic development to the intensive but ecologically safe, steady economic growth and innovations on the energy and resource-saving base (Vitkov, 2008).

Due to that fact, there has appeared the need for transition of enterprises in agrarian area to new management systems which could provide ecologic-economic balance for the agrarian business. It is worth noting that the transition to the new management system is a complex and time-consuming process, which could be implemented by developing a new innovative model for developing of agrarian enterprises.

We are certain that the functionality of agrarian enterprises must take place according to the concept of steady development but it requires the creation of completely new conditions for entrepreneurial activity, the base of whom is the greening of agricultural enterprise, increase in the efficiency of application of the resource potential of the agro-industrial complex, formation of the ecologically focused management system at the global and regional levels and mainly the provision of population with high-quality food products developed in the agrarian sector with the purpose of rejuvenating the nation. Therefore we believe it is necessary to develop the qualitatively new innovative model of the managing business activity by agrarian enterprises which will be different from the traditional system of management by ecologically safe conductance of agrarian business, its greenings, which is an integral part of the steady development strategy.

Materials and Methods

The **methodology** of forming the innovative model of development at agrarian enterprises considered two types of analyses (internal and external) and included the following stages: analysis of the existing situation; analysis of the external environment; formation and selection of the optimal development strategy; implementation of the selected strategy; monitoring over the process of implementing the strategy.

Results and Discussion

Functioning of agrarian enterprises according to the concept of steady development requires creation of fundamentally new conditions for entrepreneurial activity, the base of which is ecologization of the agricultural production and increase in efficiency of applying the resource potential of the agro-industrial complex and formation of the ecologically focused system of management.

The ecological component in the agrarian business implies the scientifically grounded complex of mutually connected agro-technical, ameliorative, ground protecting and organizational-economic measures at efficient use of the ground, climatic resources, biological potential of plants with the purpose of receiving stable harvest of agricultural crops under the yield increase and keeping to ecological safety of the environment and grown produce (Minkova, 2016). Business entities in the agricultural sector of Ukraine must clearly understand the benefits of organic production (Shkabara, 2014).

I.M. Siniakevych (2005) dealt with greening of the public development as the “concept which implies greening of the economic and social policy and recovery of the spiritual sphere with the help of the system of efficient tools with the purpose of providing steadiness in ecological systems and removal of the global, national and regional ecological threats”.

In the scientific publications states that the humanity starts to deeper comprehend the threats from negative trends in dynamics of condition indicators in social and ecological components of public development therefore insists on transition toward ecologically clean produce (Shubravska, 2007).

The concepts of developing the objects of management took place simultaneously with the changes in attitude to the economic development and formation of the ideology of steady development (Vichevych, 2002).

Ecologization is the main direction in the activity of agrarian enterprises and it is based on mastering ecological-economic methods of business activity with the aim of providing the extended recovery of the natural resources at the expense of forming steady ecological-economic systems, increase in the amounts of production of competitive ecologically-safe produce, creation of agricultural systems using ecological methods of management.

Ecologization of the business activity of agrarian enterprises implies the system of aim-targeted transformations in the productive forces and production relations, which decrease the negative impact on the environment and provide efficient use of resources in the process of production, storing, transportation and distribution of produce. Ecologization is based on principles of ecological safety priority; ecological responsibility; environmental protection; restoration and saving of the natural resources; preservation of the landscape integrity; preservation of the biological biodiversity.

The modern economic direction in the business activity of agrarian enterprises in our opinion can be determined through the combination of economic and social problems of the rational use, recovery and protection of natural resources of agri-sphere and on the innovative base. We consider that greening of the production at agrarian enterprises is tightly connected with the innovative activity and should be considered as an integral part of its development with the creation at the government level of the system of ecological-economic management. Therefore the organization of the production relations in agriculture should take place based on the rational application of the natural resources – on the one hand and formation of the system of managing them on the other hand. To achieve this it is necessary to apply innovative technologies – economic models which based on the usage of biological husbandry elements and optimization of the production processes will make possible to achieve a high level of management, predictability and efficiency. Unlike traditional technologies they are based on the use of energy- and resource-preserving systems of husbandry (Syrtseva, 2008).

The result of application of innovative technologies in agrarian production is the creation of the innovative produce.

Ecologization is the direction of the innovative development of agrarian enterprises which are based on mastering ecological methods of management, provides a wide recovery of natural and anthropogenic resources at the expense of forming steady ecological-economic systems, directed at the increase in the amounts of production of the competitive produce, with the application of ecological methods of management based on the implementation of adaptive-landscape systems of husbandry, rational involvement in the economic turnover and increase in the efficiency of applying natural, material, and work resources in the rural area.

The main strategic directions in the innovative model of agricultural producers can be formed due to the following criteria:

– ecological – be useful for the environment, lead to health improvement of people, grounds and eco-systems, maintenance of the ecologic balance in the biosphere;

– economic – provide implementation of the strategy of development by organic manufacturers in the direction toward increase in profits, decrease in costs, increased efficiency of management;

– market – widening of the part of organic manufacturers at the market of produce, lead to their concentration and differentiated scientific-commercial activity;

– publicly – encourage the increase in the professional activity among agrarian producers, creation of new jobs and improvement in the working conditions and quality of life in rural areas.

Key directions of transiting agrarian enterprises to the model of the innovative development based on greening and steady development are represented in Figure 6.1.

To implement those directions it is necessary to undergo a whole set of qualitative transformations which concern the transition to the innovative market, renovation of the production system, overcoming the significant differentiation of approaches, that is the global modernization of the national economy is needed.

We outlined main components of the innovative model in functioning of agrarian enterprises based on principles of greening and steady development (Figure 6.2).

The base of building the innovative model of functioning of agrarian enterprises is their corresponding actions in the process of transformation to the ecologically focused development. For the correct stimulation of those actions it is necessary to have the motivational mechanism, with the basic components – instruments of motivating the innovative development of agrarian enterprises and instruments of greening agrarian production. The base of the motivational mechanisms in our opinion is the awareness of motivating the ecologically focused behavior of customers and motivation for greening the production. Consumers' motivation and motivation of the ecologically focused production are the basics of this mechanism.

A large-scale implementation of the greening production at the agrarian enterprises is impossible without ecological social awareness. At the country level the greening of the ecological development does matter, which is considered in the context of the economic, social and spiritual spheres as the process, which provides the movement of the earth's population toward steady ecologically balanced development (Haydutskyy & Hodakivska, 2012). Ecologically aware activity and competitiveness of the agrarian business is achieved by convincing the customers of the highest consumption value of ecologically clean produce and support of the image of enterprises on its development. The ecological component must be considered while making any business solutions.

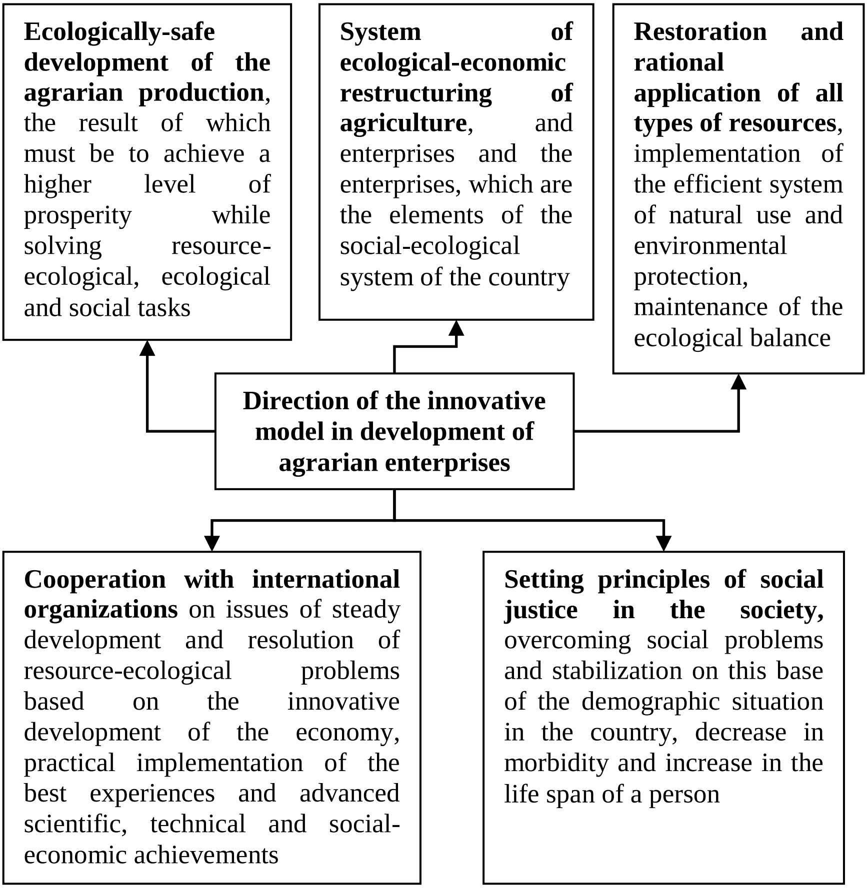

Figure 6.1 Main strategic directions in the innovative model of developing agrarian enterprises

Source: generalized by the authors

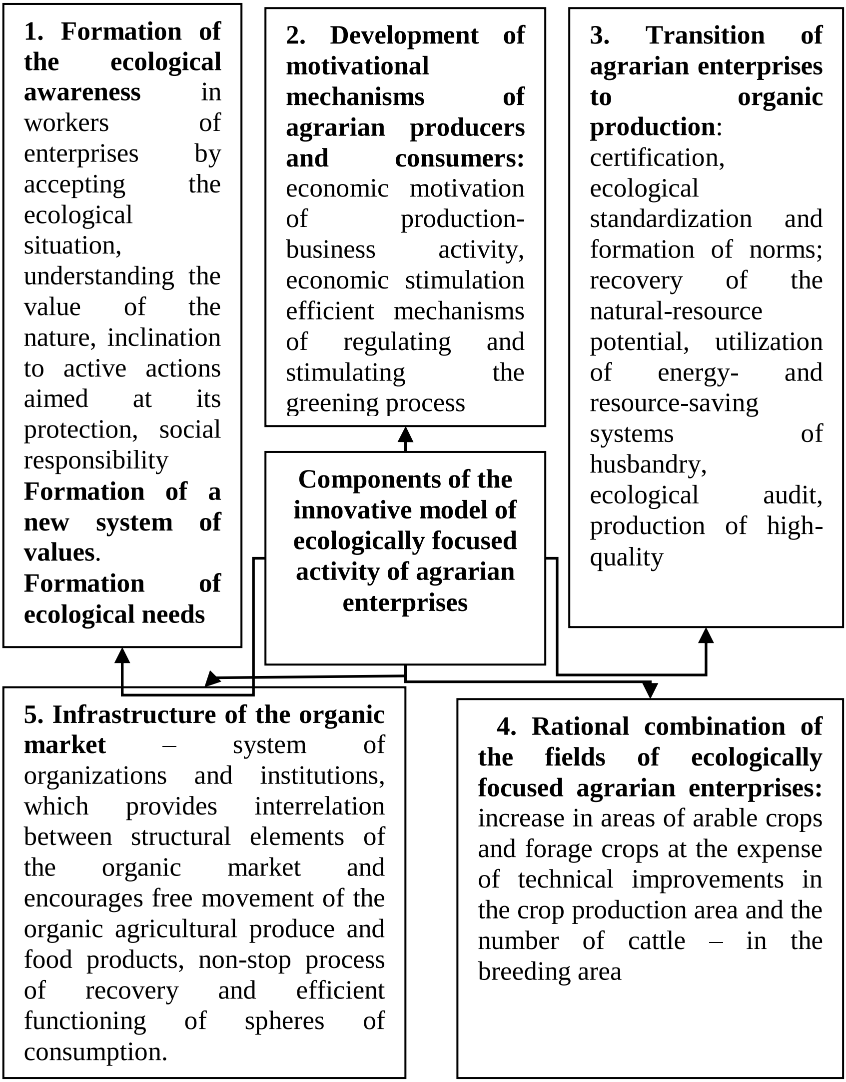

Figure 6.2 Model of ecologically focused mechanism of management in the agrarian production

Source: developed by the authors

The material base of the motivation of work is stimulation, which is based on the process of external influence on the interests of the business entities with the help of a certain set of actions (moral, material, social), which could encourage the positive development of social relations between business entities and formation of the new type of a personality. We can state that stimulation of the ecologically safe development of the agrarian production on the one hand, must have the material ground for agrarian producers and on the other hand – not material loading which will make possible to obtain a certain status in the society. The base of the economic regulation of the ecological activity of agrarian enterprises is the opportunity to regulate the economic activity of enterprises by the government based on economic methods, which are formed based on the redistribution of funds from the producers of non-ecological goods to the producers of ecological goods.

In our opinion the key moments to solving the issue of ecological provision of enterprises, which will make possible to create a fully functioning sector of producers of ecologically clean produce, should be the material stimulation and changes in the internal philosophy of conducting agrarian business.

Ecological advantages make possible to solve the issue of providing people with high-quality products without breaking the ecological balance and not harming the environment. Therefore, organic production is spread in different countries of the world, and modern trends of developing the market of organic produce are under the influence of general and global trends.

The radical way of solving the issue of the ecological safety of technologies for growing agricultural crops and ecologically clean produce should be the transition to the organic production as an alternative model of business activity, but at the same time we understand that, currently there are no considerable alternatives to intensive technologies in the global scale since the main problem of many agrarian producers is the maintenance of the yield. The transition period from traditional (intensive) technologies to organic technologies is a rather long-term process. Depending on the situation, it can last from 2 to 5 years and it can be accompanied by certain risks.

Ecologically focused transformation of the production activity of agrarian enterprises includes the following:

– rational use of land which is accompanied by maintaining and increase in soil fertility;

– provision of the optimal level for arable grounds which prevents water and air erosion of soil;

– keeping to standards for the limited norms of pollutants in the produce, provision of produce greening;

– compliance with the set rules toward transportation and application of mineral fertilizers, means of protecting plants and animals;

– prevention of the chemical contamination of the environment and food products;

– keeping to ecological requirements while designing, building, reconstructing and use of new buildings and constructions, ameliorative systems and so on.

An essential condition for functioning of the innovative model is the efficient combination of areas of the organic enterprises is the compliance with the natural-ecological standards. Such a combination should provide the optimal economic efficacy of land usage; вrelatively balanced use of machinery and workforce during the year (in the area of husbandry and breeding) to reduce the seasonal effect of the agricultural work; rational and maximal possible application of the produce of one field by the other field; more efficient and fast money turnover; bigger produce output, achievement of the maximal level of work productivity and the figures of the profit. The main task of specialization and concentration is the significant increase in the amount of production and distribution of the agricultural produce, their quality, increase in productivity, and decrease in costs.

At the expense of the constant optimal planning and predicting the rational combination of the areas, it is possible to find the transition from the traditional business activity to the organic one with the least losses and risks as well as to achieve the economic effect (increase in profitability, gross produce or decrease in costs caused by production), social (employment of people in rural areas, increase in the level of workers' life), agro-ecological (improvement in the structure of soils, their physical and phyto-sanitary conditions, air and water modes, positive balance of humus, development of biogenic elements, ecological characteristics of the created produce).

Thus the improvement in the field structure of organic enterprises by the criterion of implementing the strategy of greening the production implies the increase in the arable areas of grain crops and forage crops at the expense of the technical processes – in the husbandry area and increase in the cattle – in the area of breeding.

One of the leading positions in the innovative model of development is taken by the infrastructure of the organic market as a system of organizations and institutions, which provide interconnection between structural elements of the organic market and leads to free movement of the agricultural organic produce and food products, non-stop process of creation and efficient functioning in the sphere of the end-user. The creation of conditions and acting mechanisms for developing and efficient functioning at the infrastructure of the market of the organic agricultural produce is the main task of the country. It is essential that formation of the infrastructure at the market of agricultural produce should take place under the conditions of cooperation among all their structural elements and development of them as the integral system: organizational, credit-calculating, material-technical, informational, human resources. The infrastructure should serve the process of the market exchange of goods in the organic sector, provide the reliability, transparency and stability of the sector.

To carry out the process of transition from the traditional to the organic business activity it is necessary to mobilize own funds and possibilities of agrarian enterprises in Ukraine. It can be recommended to borrow the experience from the developed countries in the world; in those countries, the government plays the main role during this transition, and it is the government who is interested in positive ecological changes and therefore it creates the efficient mechanism of environmental regulation and determines strategic priorities in the sphere of transition to the production of the organic agricultural produce.

Conclusions and recommendations for further research

The innovative model of developing the agrarian production should be based on the overall consideration of ecological factors, requirements to the ecological safety of any production process, rational use and preservation of natural resources. Owing to that, the society will be able to overcome the ecological crisis and create such conditions under which the agrarian production will develop intensively, competitively and at the same time ecologically safe.

As a result, the production activity of agrarian enterprises may be transferred to the fundamentally new economical-technological base, structural transformation of production must be made considering ecological factors, laws, requirements and standards, which is an obligate condition for overcoming the ecological crisis in the country. While implementing the main tasks of greening it is possible to significantly decrease the man-made pressure on the environment, improve its conditions which will help Ukraine to perform the obliged duties on environmental protection and gradual achievement of the European norms and standards on the boundary levels of harmful influence on the environment.

Essential ecological preconditions for development of ecologically focused innovations are resource and energy conservation. Those criteria are especially important under conditions of limited and exhausted natural-resource potential of Ukraine.

The structure of the agrarian production should provide the minimal anthropogenic influence on the environment. At that, it is necessary to carry out the estimation of social-ecological status of the territories and estimation of the ecological condition of carrying out the business activity. That estimation should be made in accordance with the world trends on development and international standards.

The determined main directions in the development of the organic agrarian enterprises include the following measures: organization of the informational campaign on increasing the level of public awareness of advantages in the organic agricultural production and organic products; promotion of the steady agrarian cooperation and establishing the joint distribution of the organic produce, supply of the biological measures for protecting plants and animals; formation of the national system of certification and control over the quality of the agrarian produce; organization of special places in agricultural markets and the chain of distributing the organic produce by creating special retailing establishments for sales and distribution; organization of special fairs, exhibitions and other promoting events; activation of commodity exchange and formation of transparent market conditions for price-making and distribution of significant amounts of the organic produce at the regional, national and international markets; setting up win-win partner relations between producers of the organic produce and other operators of the agricultural market.

The main indicators of the efficiency of the innovative model for development of the agrarian enterprises is quality (economic, ecological, social-institutional and stages of harmonization) and life safety of the population.

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RESEARCH ON EXPORT LOGISTICS OF AGRICULTURAL PRODUCTS IN UKRAINE DURING MARTIAL LAW AND ENSURING FOOD SECURITY

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Abstract
Ensuring food security is affected by the saturation of agricultural products produced domestically and imported. The military actions in Ukraine have negatively affected the export logistics of Ukrainian agricultural products to third countries, thus posing a threat to food security. The aim of the study is to diversify the export logistics of Ukrainian agricultural products as a result of the blockade of seaports by using the capabilities of railway and vehicle transports, cross-border cooperation between Ukraine and the European Union countries. The study is based on an assessment of the volume of exports of Ukrainian agricultural products, an analysis of the geographical structure of logistics exports, and the border crossing of Ukrainian agricultural products by different types of transport. The paper describes diversified logistics routes for exporting Ukrainian agricultural products. Based on research results, identifies promising directions of support for the

export logistics of Ukrainian agricultural products during martial law and ensuring food security.

Keywords: *agricultural products, logistics, export, food security, diversification.*

Introduction

Ukraine has a significant potential for agricultural production – it has large amounts of agricultural land, fixed assets used in crop and livestock production, production technologies, etc. Ukraine's agriculture sector is home to both large agro-industrial companies and small farms. Ukraine's agricultural production fully meets the needs of the domestic market and contributes to global food security. Ukraine is a major exporter of agricultural products to global markets. Actively contribute to this export logistics, represented by various types of grain transportation, and the formation of efficient logistics chains in cooperation with agricultural producers, transport companies, wholesale intermediaries, etc.

However, the hostilities and the blockade of seaports in southern Ukraine affected the entire logistics chain of agricultural exports and threatened food security in some countries. Most countries of the world were not prepared for this scenario. World leaders and governments are trying to solve the problems of export logistics of agricultural products by offering various support and assistance programmes, using various logistics routes and technical potential of transportation in their own countries. It should be noted that this problem has identified the need for further in-depth scientific research in this area and has formed a number of practical tasks to address this complex issue.

We have conducted a study of financial losses of Ukraine's agricultural exports during martial law (Bezrartochnyi, Britchenko, & Bezrartochna, 2022), but the constant recording of grain theft and export outside the country, destruction and damage to grain crops requires clarification of statistical information and its adjustment. The literature includes studies of ensuring the functioning of the food system and the agricultural sector of Ukraine in the current crisis conditions (Gadzalo, Ibatullin, & Luzan, 2022; Rusan, 2022); providing state support to the agricultural sector of the economy in wartime (Galanets, 2022). Research in the pre-war period was aimed at ensuring the efficiency of grain logistics and the development of transport infrastructure (Kachurovskyi & Macyuk, 2019; Krysuik, Moskvichenko, & Bulgaru, 2017; Moskvichenko, Stadnik, & Pavlenko, 2021; Potapova, Ushkalenko, & Kachurovskyi, 2018), etc.

The aim of the study is to diversify promising logistics routes for the export of Ukrainian agricultural products to ensuring food security. The main objectives of the study are: to determine the commodity structure of Ukrainian agricultural exports, to study the geographical structure of Ukrainian agricultural exports, the volume of transportation by various types of transport, to determine diversified logistics chains for the export of Ukrainian agricultural products, the conditions for liberalisation of logistics exports and customs procedures for agricultural products of Ukrainian agricultural enterprises.

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 export logistics of agricultural products from Ukraine during martial law and ensuring food security. The methods of analysis and synthesis were applied, which allowed identifying problems and determining directions to ensuring food security through the diversification of export logistics of agricultural products from Ukraine during martial law. Sources of statistical information on the agricultural sector were used, as well as the commodity and geographical structure of Ukrainian agricultural exports, and the volume of transportations by various types of transport was estimated. The abstract-logical method is used to diversifying the export logistics of agricultural products from Ukraine and ensuring food security.

Results and Discussion

Efficient export logistics is achieved by combining the possibilities of transporting goods by various types of transport and optimising logistics costs. This can be achieved through a well-established transport network, participants in the logistics process, increasing quality of transport infrastructure, intergovernmental agreements and appropriate government support. Violation of these components in the export logistics system reduces the quality of services, timely receipt of goods by contractors, and increases the cost of transportation.

The hostilities have disrupted all supply chains within the country and caused an imbalance in export logistics. This has also affected the supply of agricultural products and created problems for global food security.

During martial law, the volume of agricultural exports from Ukraine decreased significantly (Table 6.1). The figure shows that in 2022-2023 MY compared to previous years, the export of agricultural products from Ukraine decreased by half as a result of military operations. In the commodity structure of Ukraine's agricultural exports, the largest decline in exports was observed for rye and barley.

Table 6.1

Exports of agricultural products from Ukraine, 2020-2021 – 2022-2023 MYs, thousand tonnes

Agricultural products	2020-2021	2021-2022	2022-2023	2022-2023 to (%)	
				2020-2021	2021-2022
Cereals and legumes, total	43939	48508	22746	51.8	46.9
• wheat	16413	18741	8411	51.2	44.9
• barley	4210	5752	1626	38.6	28.3
• rye	15.8	161.5	12.5	79.1	7.7
• corn	22596	23535	12624	55.9	53.6
Wheat flour	123.7	69.4	65.6	53.0	94.5
Other flour	1.1	1.5	3.4	309.1	226.7
Total flour	124.8	70.9	69.0	55.3	97.3
Total export (grain + flour)	44105	48579	22815	51.7	47.0

Source: based on data of State Customs Service of Ukraine

The geographical structure of exports certain types of agricultural products from Ukraine is shown in Figures 6.3-6.6.

Figure 6.3 shows that the largest importers of Ukrainian wheat in 2022-2023 MY are Turkey, Romania and Spain. The volumes of Ukrainian wheat exports to these countries increased during martial law. In 2022-2023 MY Romania became the intermediary country for Ukrainian wheat exports to the Black Sea seaports. Exports of

Ukrainian wheat to Indonesia, Bangladesh, Egypt and Lebanon decreased. A significant volume of Ukrainian wheat exports was achieved through cross-border trade with Hungary.

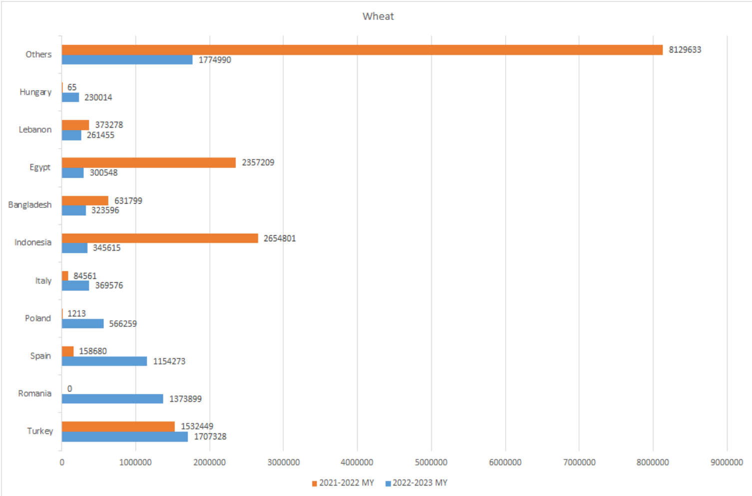


Figure 6.3 Geographical structure of Ukrainian wheat exports, July-December 2021-2022 – 2022-2023, thousand tonnes

Source: based on the data of the State Statistic Service of Ukraine and Ministry of Agrarian Policy and Food of Ukraine

According to Figure 6.4, in 2022-2023 MY the largest export volumes of Ukrainian corn were to Romania, China, Spain, Poland and Hungary. The export of Ukrainian corn to Romania and Poland increased several times due to the diversification of logistics channels. Exports of Ukrainian corn to Turkey, the Netherlands and Egypt decreased.

Figure 6.5 shows that Romania and Spain are the largest importers of Ukrainian barley in 2022-2023 MY. The export volumes of Ukrainian barley decreased to Turkey, China, Libya and Lebanon during martial law. Romania and Poland, which have access to the Black and Baltic Seas, will become the diversified export channels for Ukrainian barley in 2022-2023 MY.

According to Figure 6.6, in 2022-2023 MY the exports of Ukrainian sunflower oil to the EU and Turkey decreased. The exports of Ukrainian sunflower oil to India, China and the UK increased.

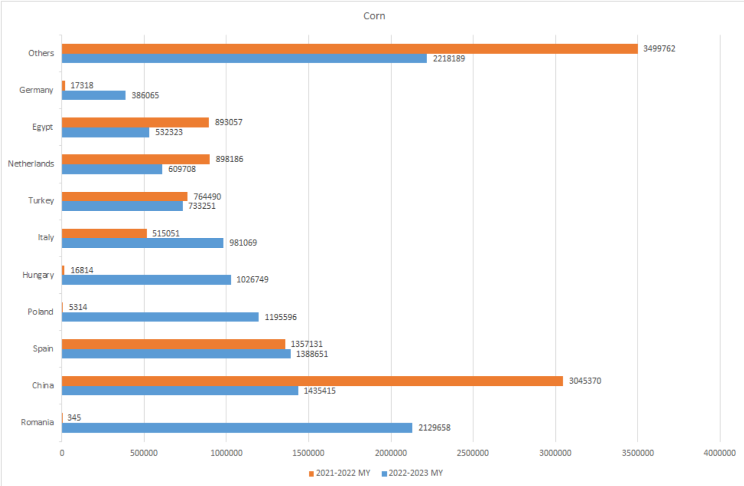


Figure 6.4 Geographical structure of Ukrainian corn exports, July-December 2021-2022 – 2022-2023, thousand tonnes

Source: based on the data of the State Statistic Service of Ukraine and Ministry of Agrarian Policy and Food of Ukraine

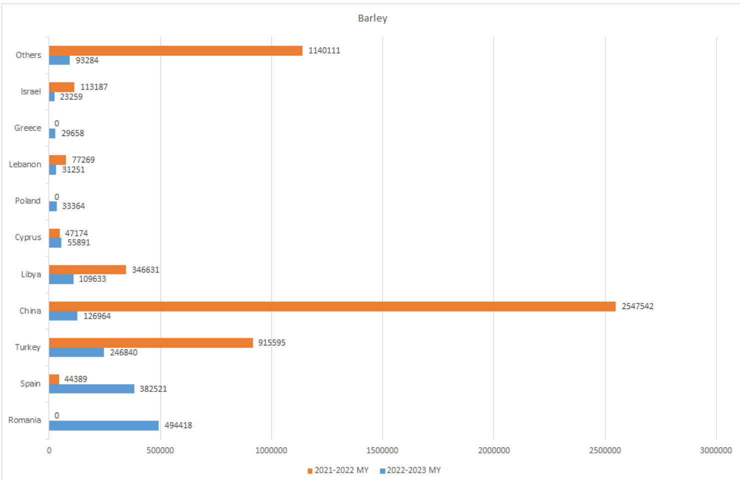


Figure 6.5 Geographical structure of Ukrainian barley exports, July-December 2021-2022 – 2022-2023, thousand tonnes

Source: based on the data of the State Statistic Service of Ukraine and Ministry of Agrarian Policy and Food of Ukraine

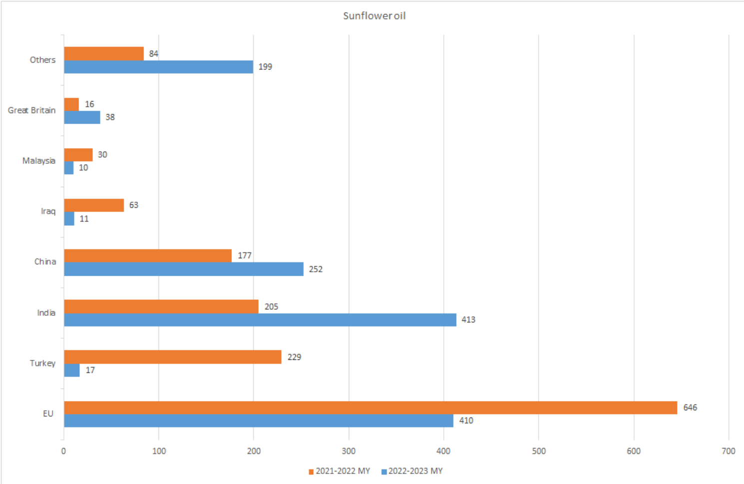


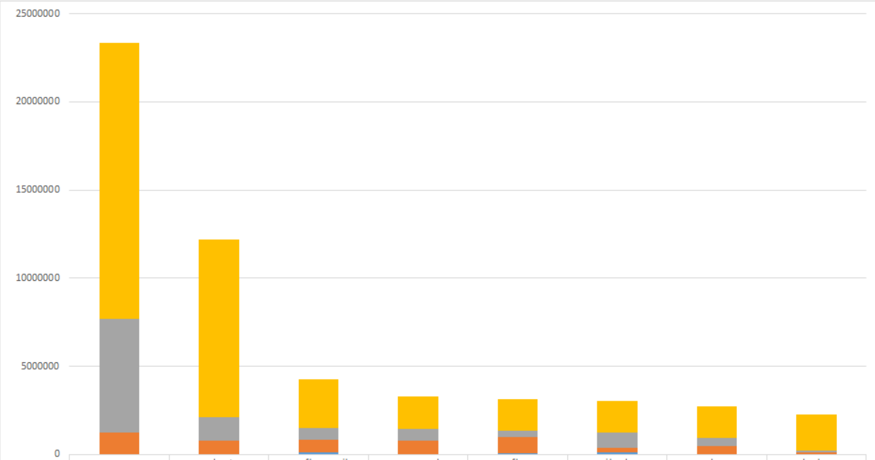
Figure 6.6 Geographical structure of Ukrainian sunflower oil exports, July-December 2021-2022 – 2022-2023, thousand tonnes

Source: based on the data of the State Statistic Service of Ukraine and Ministry of Agrarian Policy and Food of Ukraine

In general, due to Ukraine's cross-border cooperation with EU countries (Poland, Romania, Hungary), agricultural exporters managed to ensure the logistics of certain types of products (wheat, barley, corn) to sea and land routes as transit to other countries and to ensuring food security.

The border crossing of Ukrainian agricultural products by type of transport is shown in Figure 6.7 The figure shows that during the study period, corn accounted for the largest share in the commodity structure of agricultural products (42.8%). By type of transport, the majority of agricultural products were transported through seaports (69.4%), despite their blockade and military operations in the south of the country. Railway and vehicle transports have become an alternative to logistical exports of Ukrainian agricultural products.

The vast majority of EU countries that share borders with Ukraine have responded positively to the establishment of alternative logistics routes for exporting Ukrainian agricultural products to third countries by railway and vehicle transports, and have eased conditions for freight clearance and customs procedures. In particular, liberal conditions were introduced for the export of grain crops from Ukraine: Poland, the Baltic States, Slovakia, Hungary, Romania, Italy, Turkey, Bulgaria, Georgia, Denmark, Greece, and Austria. For example, Poland is speeding up border procedures and logistics of grain crops from Ukraine, while the G7 countries are forming new logistics chains for grain exports. Slovakia and Austria have lifted restrictions on the transportation of grain crops from Ukraine through their territory without any permits, which has allowed for unimpeded supply of agricultural products to seaports in Italy.



	corn	wheat	sunflower oil	rapeseed	sunflower	oil-cake	soybeans	barley
ports	15677528	10106934	2782291	1844489	1800062	1785935	1766336	2070586
railway	6430479	1302966	635621	688791	366782	881324	463074	75963
vehicle	1230697	777682	719003	751413	902344	270487	448585	113076
ferry	19751	22604	127845	19178	76217	112594	39694	11335

ferry vehicle railway ports

Figure 6.7 Border crossing of Ukrainian agricultural products by type of transport, March 2022 – March 2023, tonnes

Source: based on the data of the Ministry of Agrarian Policy and Food of Ukraine

To facilitate the export logistics and transit of Ukrainian agricultural products, the EU has exempted transporters from phytosanitary requirements (An action plan for EU-Ukraine Solidarity Lanes, 2022).

Table 6.2 shows the characteristics of logistics routes for Ukrainian agricultural exports.

Table 6.2

Logistics routes for exporting Ukrainian agricultural products through EU countries during martial law

Country	Characteristics
Slovakia	In Slovakia, grain crops were transported from Ukraine by railway to the ferry in Bratislava and then by the Danube to the Romanian Black Sea port of Constanta, and then to Africa. This logistics route is shorter, cheaper, and more environmentally friendly. Slovakia has an effective logistics potential – it has established logistics chains with the European railway, vehicle and ferry network. The port of Bratislava is located in the middle of the Rhine-Main-Danube waterway. The railway network has sufficient capacity to increase traffic volumes in the south-north and east-west directions.
Poland	Poland has a 400-kilometre railway connecting Ukraine with Silesia. Poland and Ukraine have agreed to establish a joint freight company and simplify border regulations. Obstacles to the development of logistics routes for grain exports and increased transportation volumes include congestion in Polish seaports to the Baltic States, and an urgent need to increase wagons and build transport infrastructure.
Romania	The Romanian logistics route for grain exports from Ukraine is via railway, vehicle, ports and the Danube River. It is one of the priority routes and has prospects for further development. Romania is implementing measures to increase the transportation of grain crops from Ukraine through its territory, using national mechanisms to provide direct support. The logistics hub for Ukrainian grain exports in Romania is the seaport of Constanta, which is an alternative logistics route bypassing the seaports blocked in Ukraine. Grain crops are then transported to third countries.
Lithuania	Lithuania uses the Klaipeda port on the Baltic Sea and the Polish railway to transit grain crops from Ukraine to third countries. It takes a long time to ship products from Ukraine to Lithuania.

Source: authors' generalisation

Table 6.2 shows that during martial law, four main logistics routes for exporting Ukrainian agricultural products to third countries to ensuring food security have been formed. It should be noted that despite the joint efforts of Ukraine and the EU countries to establish alternative logistics routes for the transportation of agricultural products, there are problems that complicate the transit of agricultural products. In particular, there is a lack of truck drivers, different railway gauges in Ukraine and the EU, overloading of customs infrastructure – seaports in Romania and Poland, lack of qualified personnel, etc.

In order to eliminate obstacles and problems in the export logistics of Ukrainian agricultural products and ensuring food security, the European Commission, together with the Member States, has created "solidarity routes". Within these routes, it is proposed to implement a number of priority measures in the short term, namely (European Commission to establish Solidarity Lanes, 2022):

– Additional freight rolling stock, vessels and lorries: The Commission calls on EU market players to urgently make additional vehicles available. In order to match demand and supply and establish the relevant contacts, the Commission will set up a matchmaking logistics platform and ask Member States to designate dedicated Solidarity Lanes contact points (a "one-stop-shop").

– Capacity of transport networks and transhipment terminals: Ukrainian agricultural export shipments should be prioritised, and infrastructure managers should make rail slots available for these exports. The Commission also calls on market players to urgently transfer mobile grain loaders to the relevant border terminals to speed up transhipment. A road transport agreement with Ukraine will also remove bottlenecks. To encourage EU transport operators to allow their vehicles to enter Ukraine, the Commission will also investigate options for top-up financial guarantees.

– Customs operations and other inspections: The Commission urges national authorities to apply maximum flexibility and to ensure adequate staffing to accelerate procedures at border crossing points.

– Storage of goods on the territory of the EU: The Commission will assess available storage capacity in the EU and coordinate with Member States to help secure more capacity for temporary storage of

Ukrainian exports.

In the medium and long term, the Commission will also work to increase the capacity of the infrastructure of new export corridors and to create new infrastructure links as part of Ukraine's recovery.

Conclusions

The blockade of part of Ukraine's territory and seaports by the enemy has disrupted the export logistics of agricultural products to third countries. During martial law, the country is activating its own potential and using untapped reserves to ensuring food security.

The study found that corn accounts for the largest volume of Ukrainian agricultural exports. As a result of the blockade of seaports, countries such as Poland, Lithuania and Romania have provided diversified logistics channels for the export of Ukrainian agrarian products to their ports in the Baltic and Black Seas. Despite the decline in exports of Ukrainian agrarian products by port, it still accounts for the largest share in the structure of transportation by types of transport.

Real support from countries around the world helped to establish alternative logistics chains for exporting agricultural products abroad. The cancellation of a number of formal procedures for exporting Ukrainian agricultural products through the EU countries and the establishment of close cooperation with potential neighbouring countries allowed for the optimisation of the transportation process, using vehicle, railway, port and ferry transports for export and transit. The develop and implementation of daily effective measures to increase logistics routes to ensuring the export of Ukrainian agricultural products and the development of transport infrastructure in the EU countries has helped to ensuring the promotion of agricultural products and food security.

By coordinating efforts between the countries and achieving victory in the war against the enemy, Ukraine will restore its agricultural export potential to pre-war levels and enhance synergies within the framework of joint cooperation in creating efficient export logistics chains and developing transport infrastructure. And this, in turn, will ensuring food security both within the country and in other countries.

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EXPERIENCE OF FOREIGN COUNTRIES IN THE IMPLEMENTATION OF THE RIGHT TO ACCESS TO ENVIRONMENTAL INFORMATION

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Abstract
Purpose: to analyze the experience of foreign countries in implementing the human right to access to environmental information, their legislation, practice, and peculiarities of implementation of this right in different countries of the world. Also, to explore the judicial practice and the functioning of the institution of the Information Commissioner.
The methodological basis of the study comprises general scientific, philosophical, ideological, method of analysis and special methods.
Results: studying and summarizing the experience of foreign countries in the field of implementing the human right to access to environmental information is extremely important for the modern world. Overall,

Sweden, Finland, Norway, Estonia, Denmark, Iceland, and the United Kingdom have progressive and effective legislation in this field. However, the authors conclude that the experience of Sweden is the most optimal.
Discussion: modern social needs, the development of intellectual technologies and artificial intelligence, information wars have raised questions about the need for constant dynamic improvement of the mechanism for implementing the human right to access to environmental information, including the use of the latest developments, the Internet network, modern information protection systems, etc. On the one hand, modern technologies simplify and speed up access to environmental information, but on the other hand, a range of opportunities for technological manipulations, concealment of information, and so on, arise. Therefore, there is a problem with the absence of a proper mechanism for realizing human rights in the sphere of access to environmental information. There is a need to study the experience of foreign countries in this field. These processes are confirmed by the Law of Ukraine "On Access to Public Information" of January 13, 2011, No. 2939-VI, the Resolution of the Plenum of the Supreme Administrative Court of Ukraine No. 10 of September 29, 2016, "On the practice of application by administrative courts of legislation on access to public information," and other regulatory acts.

Keywords: *environmental information, information, access to information, ensuring the right to information, national security, information rights.*

Introduction

The problem of access to environmental information is at the center of attention of Ukrainian society and the state. Clearly, it is through full and timely access to environmental information that the principles of sustainable development, rational use of natural resources and preservation of nature for future generations, as well as effective provision and realization of other human rights and freedoms, both in the world and in Ukraine, are possible. Modern social needs, development of intellectual technologies and artificial intelligence, information wars have led to the question of the need for constant dynamic improvement of the mechanism for implementing the right of access to environmental information, including the use of the latest developments, the Internet network, modern information protection systems, and studying and generalizing the experience of foreign countries in the implementation of the right of access to environmental information is extremely important for the present.

Materials and Methods

First and foremost, we will examine the legal framework and conceptual apparatus of environmental information law in different countries around the world. In general, the most progressive countries in this area are the Nordic countries, namely Sweden, Norway, and Finland, which have ratified the Aarhus Convention. It is no coincidence that the first law on free access to information was adopted in Sweden in 1776. A century later, laws on free access to information began to be adopted in other countries. Today, about 70 countries around the world have already adopted legislation on free access to information.

Results and Discussion

In Finland and Sweden, access to environmental information is covered by general rules on access to information. According to the principle of public access to information set out in the Constitution of Sweden, citizens and representatives of the media have the right to inspect the activities of government and local government authorities and access information about them. Typically, when discussing the principle of public access to information, it primarily relates to rules on the public nature of official documents, set out in Chapter 2 of the "Freedom of the Press Act", which is one of Sweden's four fundamental laws. The provisions of another important law, the "Freedom of the Press Act", are complemented by the "Environmental Information Act", which is maintained by some private sector entities. This law defines environmental information as information about the environment and factors that can affect the environment or health, safety, and living conditions, cultural conditions, and activities that can affect the environment, or factors that can affect the environment. Overall, Sweden is a leading country in the world that progressively implements the principles of access to public information. In Finland, the law on access to information covers the performance of state tasks by entities outside the responsibility of state sector authorities. Legislation on public access to information guarantees that the protection of commercial interests cannot outweigh the public interest in environmental information. The law does not contain specific rights of public access to environmental information. A thorough review of Norway's national legislation was conducted prior to the adoption of the Norwegian Environmental Information Act in 2003, which concluded that most of the provisions of the Aarhus Convention relating to access to information were already applied in the Freedom of Information Act. However, some elements of these provisions were found to be insufficient, leading to changes in Norwegian legislation to ensure full compatibility with the Aarhus Convention. Therefore, the Norwegian Environmental Information Act (miljøinformasjonslov) meets the requirements of the Aarhus Convention and the EU Directive, and goes further by providing the right to information from private companies. On January 1, 2009, a new Freedom of Information Act came into force, which provides even simpler and wider access to public information than the previous act. Therefore, the Norwegian Environmental Information Act contains specific provisions on access to environmental information, but is supplemented by the Freedom of Information Act regarding exceptions and processing of information requests. Danish and Icelandic laws on environmental information use the same criteria as the Aarhus Convention and Directives. Denmark and Iceland have special laws on environmental information. Danish legislation requires a general assessment of each case, with greater attention given to public access to information and limited exceptions, except for information related to environmental crimes. The legislation of Iceland does not require a specific evaluation of each individual case with greater attention to the consideration of access to the public and limited exceptions (Jørgensen, 2014). Legislation in other northern countries does not fully meet international requirements for access to environmental information. As of 2017, the United Kingdom regulates access to environmental information through EU legislation. On January 28, 2003, Directive 2003/4/EC of the European Parliament and of the Council on public access to environmental information and repealing Council Directive

90/313/EEC, which established measures for the exercise of the right of the public to access environmental information, was adopted. In Scotland, there are separate agreements provided by the "Environmental Information Regulations" (The Environmental Information…, 2004), aimed at improving the adoption of environmental policy by improving data exchange, availability, and use. The Freedom of Information Act 2000, which came into force on January 1, 2005, and the Scottish Laws of 2002 made significant changes in access to information held by public bodies. In the countries of the former USSR, a similar situation has arisen with the legal implementation of access to environmental information. The acquisition of destructive union policies has had a negative impact on the legal provision of access to environmental information. Only during the years of independence have differences appeared in the legal provision and realization of the right of individuals to environmental information. Another situation has arisen in ensuring the right to environmental information in the Republic of Belarus. The right to environmental information is enshrined in the constitution at the constitutional level. On the other hand, the authorities almost completely ignore citizens' environmental rights, while the public actively defends their own ecological interests (Protection of environmental rights…, 2019). Article 74 of the Law of the Republic of Belarus "On Environmental Protection" provides the following definition: environmental information is documented information containing information on the state of the environment, its impacts and measures for its protection, as well as on the impact of the environment on humans, the composition of which is determined by the Law, other legislative acts of the Republic of Belarus and international treaties (Access to information on issues…; Access to environmental information…, 2013). The legislation of the Republic of Belarus, which enshrines the right to a favorable environment, is dynamically developing. The dynamics and trends in the studied area are determined by the adoption of international agreements, which contain provisions on the connection between human rights and the state of the environment. The Aarhus Convention has been ratified in the Republic of Belarus, but the authoritarian regime negates the achievements of the legislation (UNEP, 2019). It is the provisions of the Aarhus Convention that have significantly influenced the fact that in 2002 the Law of the Republic of Belarus “On Environmental Protection” was adopted in a new edition, in which the area of legal regulation of relations regarding the implementation and protection of the right to a favorable environment underwent significant updating.

Let’s pay attention to the legal principles of access to environmental information in Germany. Respect for human rights is enshrined in the Basic Law of Germany. Germany makes efforts at the national and international level to protect human rights and fundamental freedoms (Protection of human rights…). In Germany, according to the federal system of competence sharing, the enforcement of laws in the field of environmental protection is mainly the responsibility of the federal states. Therefore, state authorities are much more involved in the practical implementation of the provisions of the Aarhus Convention than federal agencies. In Germany, the provisions of the Aarhus Convention and the provisions of Directive 2003/4/EC are regulated by the Environmental Information Act (Umweltinformationsgesetz) with amendments made on December 22, 2004. Accordingly, the federal states have adopted relevant laws within their sphere of competence: the Baden-Württemberg Environmental Information Act of 2006; the Bavarian Environmental Information Act of 2006; the Berlin Freedom of Information Act with amendments; the Brandenburg Environmental Information Act of 2008; the Bremen Environmental Information Act of 2005; the Hamburg Environmental Information Act of 2005; the Hesse Environmental Information Act of 2006; the Lower Saxony Environmental Information Act of 2006; the Mecklenburg-Western Pomerania Environmental Information Act of 2006; the North Rhine-Westphalia Environmental Information Act of 2007; the Rhineland-Palatinate Environmental Information Act of 2006; the Saarland Environmental Information Act of 2007; the Saxony Environmental Information Act of 2006; the Saxony-Anhalt Environmental Information Act of 2006; the Schleswig-Holstein Access to Information Act of 2012; and the Thuringia Environmental Information Act of 2006 (UNECE, 2017).

The legislation of the Turkish Republic in the field of environmental protection consists primarily of national laws, regulatory acts, statutes, and decisions. Key elements of environmental protection legislation include the “Environmental Protection Law” of August 11, 1983, the Mining Law of June 15, 1985, the Forest Law of September 8, 1956, the Regulation on Environmental Impact Assessment of October 25, 2014 (EIA Regulation), and so on (Hergüner Bilgen Özeke). One of the main principles of Turkey’s environmental policy, on which its environmental law is based, is the principle of participation, the need to play a role in the management process. Law No. 4982 of April 19, 2004, establishes the right to information, but it does not contain specific rules regarding access to environmental information. Citizens have the right to demand information and documents based on applications submitted in accordance with the provisions of this law. Specific norms of access to information were not established in the 1982 Constitution of Turkey. Article 26 emphasizes the right to freedom of expression, including “the right to receive information”. In the 2001 Constitution, Article 74 specifically relates to the right to information, which establishes that everyone has the right to receive information (EU integrated environmental…). One of Turkey’s peculiarities is that it participated in the discussion of the Aarhus Convention but did not join it. One of the three resolutions adopted at the General Assembly of the European Environmental Bureau in 2013 was a General Assembly resolution calling on the Turkish Republic to take necessary measures to become a party to the Aarhus Convention and ensure its prompt implementation (EEB calls on Turkey…; Hergüner Bilgen Özeke). However, Turkey is currently not a participant in the Aarhus Convention. India’s experience in providing information to local communities is noteworthy. India’s “Right to Information Act”, which was passed in 2005, ranks second in the world in terms of quality, according to the Global RTI Rating rankings by international organizations Access Info and the Centre for Law and Democracy. However, there are numerous problems with the practical implementation of the right to information. The experience of Latin American countries that have signed a Regional Agreement on Access to Information, Public Participation, and Justice in Environmental Matters is interesting. The agreement was adopted in Escazu, Costa Rica, on March 4, 2018, and signed at the UN headquarters in New York on September 27, 2018. Article 1 of the agreement defines the purpose of the agreement as guaranteeing full and effective implementation in Latin American and Caribbean countries of the right of access to information about the environment, public participation in environmental decision-making, access to justice in environmental matters, and the creation and strengthening of potential and cooperation, contributing to the protection of the right of every person of current and future generations to live in a healthy environment and sustainable development. Environmental information is defined as information that is written, visual, audio, electronic, or recorded in any other format relating to the environment and its elements and natural resources, including information related to environmental risks and any possible adverse effects that affect the state of the environment and health, or may also affect the environment and its management. So, legislation in different countries widely considers the concept of environmental information. Systems that recognize the right to all information held by government authorities have significant advantages. Proper compliance with information laws guarantees the human right to access environmental information worldwide.

Regarding administrative-legal ways of realizing the right to environmental information, it should be noted that in Sweden, the main ways of accessing and publishing information are through information requests and publishing such information on official websites. Ukraine uses a system of information requests borrowed from Sweden. Martin Hagström notes that in Sweden, anyone can make any request and receive information in electronic, printed, video, or audio format. Thus, in Sweden, human and citizen rights to information access are ensured.

In the Republic of Moldova, a system of information requests is also in place, which anyone can provide. The response must arrive no later than 15 days after the request is registered. However, a formal reply or refusal can be received citing state or commercial secrets. Investigative journalism is in a difficult state, with journalists often being refused. Officials do not comply with deadlines, and officials try to extend the response time. Accordingly, conditions are created for the restriction of human rights and freedoms by illegal methods.

In the Republic of Belarus, the provision of environmental information to legal entities that are not state-owned is carried out in accordance with Article 74-4 of the Law of the Republic of Belarus "On Environmental Protection." Thus, environmental information of general purpose is provided by the owner of environmental information upon the application of an interested person free of charge within ten working days from the date of receipt of the application for its provision. However, there are frequent cases of unjustified or illegal refusal in Belarus.

The Indian Right to Information Act provides the opportunity to request any information in any form. It is the duty of the authorities to provide assistance in drafting information requests, especially for people with special needs who are unable to make such requests themselves. The law also stipulates that the Information Officer must provide a response as quickly as possible, but no longer than 7 days. Indian law does not provide for the possibility of extending the deadline for responding to a request. Despite the high praise for Indian law, there has recently been a trend towards worsening access to information. The Right to Information Act does not establish a fee for submitting an information request. However, Indian regulations provide for payment of the cost of copying and printing materials only for more than 20 pages. At the same time, an additional fee has been established for submitting requests, which applies to all categories except those submitted by Indians living below the poverty line. In addition, there is a limit on the number of words in a request, which cannot exceed five hundred.

According to the Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin American and Caribbean countries, the exercise of the right to access environmental information includes: requests for and obtaining information from competent authorities without specifying any particular interests or explaining the reasons for the request. Each party promotes access to environmental information for individuals or groups in vulnerable situations, establishing procedures for assistance, from formulating requests to providing information, taking into account their conditions and characteristics; for this purpose, promotion of access and participation occurs on equal terms. Each party guarantees that the aforementioned individuals or groups in vulnerable situations, including indigenous peoples and ethnic groups, receive assistance in preparing their requests and receive a response. Therefore, we can indicate that the information request is an effective and well-known form of access to information in the world. The effectiveness and adequacy of the response to the request depend on the proper functioning of the civil society regime in the country.

Next, let's consider the institution of the Information Commissioner and the Ombudsman for human rights in different countries. In general, the Ombudsman institution originated in Sweden in the mid-eighteenth century with the aim of ensuring control over the actions of the authorities. Models of the Ombudsman institution in foreign countries are diverse. It can be one person (Russia, France), or several officials at the parliament (Germany, Sweden), or a collegial body (Hungary). The common European practice provides for the introduction of the position of Commissioner for the protection of personal data in the state (Bryzhko *et al.,* 2016, p. 272). The creation of such an institution carries not only a practical component but also an important theoretical approach to understanding the process of reorganizing governance bodies. If we consider foreign experience, there are four main types of supervisory bodies at the global level: Information Commissioner (Great Britain, Slovenia, Serbia, Hungary, Scotland); Commission or institute (Mexico, France, Portugal); Ombudsman with supervisory powers (Sweden, Norway, Bosnia, New Zealand); other bodies (South Africa, Turkey) (RTI…, p. 47). Therefore, the question arises as to what form such an institution should take in Ukraine. The need to improve the management structure is obvious, however, scientists have different views on ways to improve it. In Germany, the Institute of the Commissioner for Data Protection began to form in 1970, when the world's first "Data Protection Act" was adopted in the state of Hesse, which established the state position of the Commissioner for Data Protection with sole authority. This elected state official was granted the right to complete independence from governmental structures, as well as the right to monitor activities related to personal data (Bryzhko *et al.,* 2016, p. 29). In France, a government commissioner for data protection is appointed. He participates in Commission meetings and can, within 10 days, request a rehearing on any matter that was previously considered by the Commission. In the UK, there is an independent appeals body and its own system for resolving issues related to access to information. The work of a separate body, namely the Information Commissioner, is also in place. This organization helps to access public information. In the UK, bureaucrats themselves use the legislation on access to information by submitting requests about their bosses and their own institutions. According to the changes to the Constitution of Turkey in 2010, the right to appeal to the Human Rights Ombudsman is granted. Institutional structuring and access to environmental information are implemented in accordance with the EU Directive on public access to environmental information. After the attempted coup on July 15, 2016, the level of restrictions on freedom of information dissemination increased, censorship and self-censorship in the country increased. Therefore, it is emphasized that a position similar to the information commissioner's institution should be created in Ukraine. Another important aspect is the impact on the policies of NGOs in countries. It is the civil society that is the driving force in the development of human rights. Interestingly, NGOs in Sweden receive financial support. The Swedish Environmental Protection Agency distributes funds to NGOs every year. In 2016, the Agency allocated about 48 million Swedish kronor to the Swedish Society for Nature Conservation, which since 2011 has taken on the task of distributing grants to various organizations in accordance with the Decree on state grants for active leisure organizations. The agency also distributed grants of approximately 14.5 million Swedish kronor to 16 non-profit environmental organizations whose work contributes to achieving environmental quality goals. Overall, NGOs have the right to freely operate without punishment, persecution, or harassment, as guaranteed by constitutional norms of freedom of information, association, assembly, demonstration, and expression of views. Most organizations in the non-profit sector take the form of non-commercial associations. Creating a non-profit association in Sweden is easy. A non-commercial association does not need to be registered with any government agency, and non-profit associations with public benefit have certain tax benefits. The knowledge accumulated by these organizations is used, for example, by being directed towards commenting procedures and other consultations, including legislative ones, in accordance with the Environmental

Code. There are also a number of formalized forums for dialogue between government agencies and representatives of different associations.

It can be noted that during the quarantine of 2020, a high level of legal awareness and civil society was demonstrated in Sweden. While the global community resorted to strict restrictive measures, the Swedish government, relying on traditional trust, limited itself to recommendations, relying on the legal consciousness of Swedish citizens. In Turkey, on the other hand, significant influence of civil society is not observed. Among the known civil movements are the Turkish Foundation for Soil Erosion Control for Forestry and the Protection of Natural Habitats, and the Turkish Association for Environmental Protection. Quite a few Turkish NGOs are engaged in environmental protection issues.

Work on promoting environmental education and awareness is being carried out in countries around the world, both in the school system and in other institutions. However, we note the educational system in Sweden. As part of the work on the 2030 Program and the Sustainable Development Goals, the Swedish National Agency for Education is working on Goal 4: Quality Education for All. The National Agency for Education is collaborating with Uppsala University to develop a national action plan for further work on environmental education and sustainable development. According to the preschool education curriculum, everyone working in preschools must promote respect for nature, and preschools must give a high priority to environmental conservation issues. Preschools should encourage children to develop caring attitudes towards nature and to understand that they are part of the natural cycles. According to the curriculum for comprehensive schools, schools have the task of giving students the opportunity to take responsibility for the environment, which they can directly influence, and to develop a personal approach to general and global environmental issues. The Swedish University of Agricultural Sciences (SLU) has more than 30 educational programs that conduct extensive environmental research. To create an effective system of transparency and interaction with the public, an e-government system has been created and internet networks have been used, which were implemented in Ukraine using the experience of Sweden and Estonia. In Sweden, there is a special website called OpenAid, where all projects of the Swedish government’s international development are published. There is also a special portal that can be used once a week by anyone. Moreover, in Sweden, all declarations are open for public access. When officials publish their declarations, the information immediately goes to media resources. This openness has helped increase trust in society. The main rule of Swedish legislation regarding access to information held by government bodies is that official documents are public unless otherwise provided. In our view, the system of access to environmental information in Sweden is based on general information and legal principles.

In Great Britain, there is an interactive web map called MAGIC that collects information about the environment from the government (MAGIC). There is also a transparency team in the Cabinet (Transparency and accountability). In addition, official websites of authorized government bodies actively operate in Great Britain, such as the Department for Environment, Food and Rural Affairs (DEFRA Opinions), the Environment Agency for England (The Environment Agency), the Scottish government (Environment and climate change), the Welsh government (GOV.WALES), and the Department of Agriculture, Environment and Rural Affairs of Northern Ireland (The Department of the Environment), which publish a large amount of information about the state of the environment.

In the US, there is an electronic FOIA system at the Department of Justice (FOIA.gov), where requests can be made. A response to the request can be obtained within 20 business days. Most requests are free, but the requester may be asked to pay a small fee for photocopies or postage expenses. In 2013, the Department of Justice received 70,081 FOIA requests, which involved 501 employees designated to respond to these requests. There are nine exemptions to the right of access to information in the US, which can be classified as follows: national security and foreign policy; materials that pertain solely to the internal personnel rules and practices of federal agencies; information specifically exempted from disclosure by other federal laws; trade secrets and financial information obtained from individuals in a confidential capacity; internal memoranda and policy discussions of agencies; personal information, such as medical records, personnel files, and place of employment; law enforcement information regarding investigations; information from federally regulated financial institutions. For example, in the Republic of Belarus, such electronic databases available to the public are only beginning to be created. So, the website www.minpriroda.by provides information on the state of the environment in the Republic of Belarus, statistical materials on the state of the environment, texts of the main legal acts regulating relations in the field of environmental protection and rational use of natural resources (Implementation of the Aarhus Convention…). Thus, the experience of using electronic systems, social networks and official resources, and other multimedia tools can be borrowed for use in Ukrainian realities. Another unique and important direction of work in Sweden is the “Whistleblower Protection Act”. It gives anyone, including civil servants, the right to anonymously provide information for publication. This also includes certain secret information of public importance. Furthermore, examining the judicial system, one can determine the peculiarities and unique decisions of many countries. One of the means of protecting public interests by private individuals in Roman law was the action popularis. The term action popularis is used to define the appeal of individuals, groups of people, and NGOs to a court or other authority in general, social interests or the interests of certain groups, without the need to prove personal interest. In some countries, a so-called “class action” is used to protect public interests and is filed to protect the interests of an undefined group of people (Poland). Actio popularis is prevalent mainly in countries in Africa, Central and North America, plays a minor role in Liechtenstein, where several conditions must be met for its submission, Malta, Peru, and Chile. In Hungary, Croatia, and Georgia, it also contributes to the development of the rule of law. In the Republic of South Africa, a natural or legal person may apply to a court to protect public interests. However, most states have not provided for actio popularis, seeking to prevent abuse of filing claims. In Japan, according to the 1962 Law on the Procedure for Resolving Administrative Disputes, there are four main types of administrative claims: 1) “Kokoko”, 2) “Todjisha”, 3) “popular action”, and 4) “Kika” claim or a claim regarding a dispute between bodies and institutions. “Popular action” is filed only in cases specifically provided for by law and provides that a person who files a claim challenging an illegal administrative claim and has no direct legal relationship to the substance of the claim (Lebedeva, 2019). We believe that the Ukrainian judicial system should resort to this type of claim in environmental cases, including the protection of the right to environmental information. Other significant features of the judicial system in foreign countries include the presence of environmental courts. Such a system is used in certain European countries and the United States. An environmental court is a state court, a fully and independently functioning part of the Vermont judicial system, as a sovereign entity of the federation that deals with environmental law issues. The court consists of only two judges who hear cases related to environmental disputes. The court conducts hearings and sessions throughout the state. In the event that a hearing needs to be held in court, it is conducted in the district where the incident that is the basis for judicial review occurred. Overall, environmental court judges are appointed in district and circuit courts throughout the state. For example, in New Zealand, an environmental court was established as early as 1991 on the basis of the Resource Management Act. It is an independent specialized court consisting of 8 permanent and 10 reserve judges who are specially trained in environmental and natural resource law, as well as 15 environmental commissioners (experts in specific areas of scientific and technical activity, economics, agriculture, as well as mediation experts). The functions and powers of this court include not only interpreting the law and resolving disputes, but also enforcing the decisions made. The judges are constantly present in three districts. If necessary, judges from these three districts travel to the site of environmental issues for hearings. This allows the Court to carry out environmental justice and ensure uniform application of environmental and legal norms, protect environmental rights, and be accessible and transparent to all citizens.

Conclusions

Ukraine is borrowing leading experience from around the world, namely the experience of Sweden and Estonia, which promotes the rapid development of information law in Ukraine.

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Chapter 7

REGIONAL ASPECTS OF MANAGING SOCIO-ECONOMIC SYSTEMS

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STUDY ON THE EVOLUTION OF FEMALE LEADERSHIP IN EUROPE

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Abstract
The topic of female leadership has been controversial in the last two decades due to globalization and the creation of a new leadership paradigm, in which leaders exert higher levels of influence over various groups of individuals over whom they no longer have official power. Men and women are equally capable of leading; gender discrimination must be avoided if leadership is to be effective. A leader must be creative, demonstrate love and compassion for their subordinates, and develop self-control without giving in to pressure from others. This paper is based on an examination of how female leadership has changed over the past 20 years in European nations. The purpose of the research, titled "Study on the Evolution of Female Leadership in Europe", is to understand how female leadership has changed over time in European countries. As analyzing female leadership is a contemporary issue, I made the decision to carry out this study and for this research I choose to do a statistical analysis of the data obtained from Eurostat regarding the percentage of women occupying a senior management position in the period 2003-2023. In order to analyze the evolution of female leadership in European countries, I performed an analysis in structure and dynamics, using Microsoft Excel. Initially I centralized and systematized the collected data, then I calculated the statistical indicators and I interpreted the results obtained. I hope that

everyone who is interested in this topic will find this paper valuable, especially PhD students and leaders who want to learn more about it.

Keywords: *leadership, gender gap, female leadership.*

Introduction

As more and more women have joined corporate boards, as well as as discrimination has become more pronounced, the subject of gender in leadership has taken on particular significance. Even though the majority of studies have shown that men and women have different leadership styles, some contend that there aren't any significant differences. Leadership and organizations are viewed as genuinely neutral entities that provide equal chances for men and women. The only way to achieve equality is to encourage companies to act morally and take into account the unique demands of women related to childbearing, child development, and domestic responsibilities (Săseanu *et al.*, 2019).

This paper is based on the analysis of the evolution of female leadership in European countries, in the last two decades. The title of this article is "Study on the evolution of female leadership in Europe" and the purpose of the research is to learn how female leadership has changed over time in European nations.

I decided to conduct this study since it is a current topic to analyze female leadership.

Literature review

While women have made progress in many areas of society and the economy, they are still significantly underrepresented in positions of leadership (De Paola, 2022).

As Săseanu (2020) said, gender variety in the workplace, and particularly in top management, is a subject that is currently being discussed and studied more and more, particularly in Western countries. Only 11% of management boards and 4% of the world's richest individuals are women, despite the fact that women make up 51.1% of the total population and 46.5% of the working population. However, it's crucial that both genders are aware of their abilities, particularly their limitations, and value the skills of others.

In a lot of fields, the role of leadership is essential. As one advances in the political or corporate hierarchies, they are required to assume more leadership responsibilities and executive decision-making authority. Despite significant progress in institutional and societal barriers over the past few years, there are still remarkably few women in leadership roles (Alan, 2020).

Leadership is a subject that is discussed in both the corporate and academic worlds, thus it is important to comprehend how effective it is in organizations. Gender prejudice must be avoided in order for leadership to be effective; men and women are equally capable of leading. Being a leader requires being imaginative, showing love and compassion for teammates, and learning to control oneself without caving in to external demands. In order to lessen social exclusion and address gender gaps, this paper examines the effects of women's participation in decision-making at the highest levels of management, in the realm of social partners (trade unions and employers' organizations), in business and politics, and on their participation in the labor market and social protection (Săseanu *et al.,* 2019).

As World Economic Forum (2022) present, from 33.3% in 2016 to 36.9% in 2022, there will have been a continuous rise in the proportion of women hired for leadership positions. High-frequency data from LinkedIn for 22 nations provides a view of women's presence in leadership in 2022, complementing numbers from the Global Gender Gap Index. Only a few sectors, including education (46%), personal services and wellbeing (45%), and non-governmental and membership organizations (47%), have leadership levels that are close to gender parity. Energy (20%), Manufacturing (19%), and Infrastructure (16%) are at the other end of the spectrum. Women have not been hired at equal rates across industries, despite an increase in the proportion of women in leadership positions over time. In industries where women were already well-represented in leadership positions, more women have generally been hired.

Under the context of globalization and the development of a new leadership paradigm, in which leaders exert greater amounts of influence over diverse groups of people over whom they no longer have formal power, the subject of female leadership has been contentious in the recent two decades. As a result of the high-tech revolution, easier access to knowledge, and the ability to contact with virtually anybody, anywhere in the globe, people in these categories have more and more freedom to act independently and according to their own convictions. Women leaders are frequently seen as possessing psychological traits such as flexibility, empathy, perseverance, and communication skills that enable them to communicate effectively, listen to and understand their subordinates and colleagues better, overcome rejection and failure, persist in efforts over time, overcome challenges, and reach consensus (Matei, 2015).

The ability to be inspired and achieve one's goals belongs to both men and women. Everybody refers to their own set of values when they do this, thus people behave differently. Men are more focused on carrying out the action plans, whereas women are more focused towards using their senses and intuition to make decisions (Săseanu *et al.,* 2020).

There are a number of things that can contribute to the low representation of women in leadership roles, including disparities in productivity, preferences, psychological attitudes, and gender discrimination. Women could act in a way that compromises their capacity for leadership and, as a result, lessens their chances of being selected as leaders. Also, they might have similar interests and beliefs. Nonetheless, some female candidates for leadership roles could be wary of doing so. Finally, despite their leadership skills and readiness to assume responsibility, they may encounter discrimination and be passed over for these positions (De Paola *et al.,* 2022).

The fact that organizations typically pick men as executives has almost become a cliché because men have dominated the profession of leadership for so long (Badoiu, 2023). Males tend to have more opportunities for professional networking than women do, which makes it simpler for them to "connect". They all have more training programs, development opportunities, and sponsors than females, who will help them realize their potential. Women suffer discrimination, harassment, sexual approaches, and other inappropriate behavior in workplaces more frequently than do men. Because of this, women frequently are not able to advance professionally or assume leadership roles (De Paola *et al.,* 2022; Badoiu, 2023).

As women are expected to be far more involved in home life than men are, De Paola (2022) and Badoiu (2023) think that women must more skillfully strike a balance between their personal and work lives. Moreover, businesses' concentration on inflexible models and lack of flexibility reduce women's prospects of rising to leadership roles. Because profound emotions and overly sensitive behavior are frequently linked with women, these associations are just false stereotypes. But, if firms do not manage them, the false perception that women are not capable of making the same decisions as males and cannot contribute fresh viewpoints to the business environment will emerge swiftly.

Although the legislation of the EU and US states implement the idea of the right to equal access to leadership roles, it appears that are frequent obstacles women face in the way of successfully obtaining a leadership position (Matei, 2015). Firstly, ingrained assumptions, attitudes, and behaviors from earlier times that obstruct the delicate psychological process by which one internalizes a leadership identity and creates his own set of professional objectives. Secondly, obligations from a family life that conflict with work and the guilt at working too much and not spending enough time with the family could be a barrier. Also, quite common examples would be unfair evaluation and the need to perform better than male leaders in order to be deemed effective and the lack of support for women's equal participation in home duties, the fact that they frequently lack the confidence to approach their partners for assistance in this area, etc.

As Săseanu and Toma (2018) argues in their paper research, it is simple to conclude that, despite the fact that women have traditionally been seen as only being responsible for taking care of the home and raising their children, they have also shown that they are capable. So, that is why it is important for them to actively participate in public life as well as in the management of organizations. According this research, there are persistent discrepancies between men and women when applying for higher-level hierarchical roles. It seems that for a top position, women are typically evaluated more rigorously than the males they compete with.

Boulouta (2013) uses in her study a feminist ethics literature and social role theory to investigate whether and how female board directors may impact corporate social performance (CSP). The empirical research reveals that board gender diversity (BGD) significantly affects CSP. It is based on a sample of 126 companies taken from the S&P500 group of companies during a 5-year period. The social performance indicator under consideration will, however, determine how this impact is felt. Zenger and Folkman (2012) demonstrates in their research how leadership abilities are closely associated to elements of organizational performance such talent retention, client happiness, worker engagement, and profitability.

According to Săseanu *et al.* (2019) research, a higher level of women's participation in the decision-making processes of social actors (such as employers' and trade union organizations) has a direct, positive impact on women's employment with positive consequences on their lifestyles. A new type of leader, "revised" to the needs of the modern world, is being revealed by the level of participation of women in economic activity, their participation in the political and business decision-making processes, and their holding of senior management positions. This new type of leader will have a significant direct impact on economic performance and will increase the importance of social protection measures to reduce social exclusion and improve living standards.

Materials and Methods

The purpose of the research is to find out what is the evolution of female leadership in European countries and to determine the magnitude of the this phenomenon.

For this research I choose to do a statistical analysis of the data obtained from Eurostat regarding the percentage of women occupying a senior management position in the period 2003-2023.

As Eurostat (2022) present, the indicator tracks the proportion of female executives and board members in the biggest publicly traded firms. When a corporation is publicly listed, it indicates that its stock is traded on a stock exchange. The major blue-chip index, which is an index administered by the stock exchange and includes the biggest businesses by market capitalization and/or market trades, is considered to contain the "biggest" corporations, which are taken to be its members (maximum 50). The only businesses that are counted are those that have local corporate registrations. All members of each company's top decision-making body, the board, are included (i.e.

chairperson, non-executive directors, senior executives and employee representatives, where present). In a two-tier governance arrangement, the highest decision-making body is typically referred to as the board of directors or the supervisory board (in a unitary system). Senior executives of the largest (up to 50) nationally registered enterprises listed on the national stock exchange are referred to as executives. The information was obtained from the Gender Statistics Database of the European Institute for Gender Equality (EIGE).

In order to analyze the evolution of female leadership in European countries during the period 2003-2033, I performed an analysis in structure and dynamics, using Microsoft Excel. Initially I centralized and systematized the collected data, then I calculated the statistical indicators.

Results and Discussion

The analysis of the development of the phenomenon of female leadership over the past 20 years' findings are presented in the paragraphs that follow.

Calculating the dynamics index, as it can be seen in Figure 7.1, by reporting the percentages of positions occupied by women in senior management positions related to the year 2022 to the base year (2003 in most cases), I tried to graphically represent their distribution. It seems that most of the countries (25 of them) recorded an index with a value between 0.7 (Estonia) and 4.96 (Ireland), which shows that throughout the analyzed period, the percentages increased up to 5 times. At the other extreme, it seems that Italy registered an index of 22.42, which reflects the fact that the phenomenon of leadership has evolved quite a lot in this country.

Regarding the arithmetic average in Figure 7.2, I found that the country that recorded the lowest average regarding the percentage of positions occupied by women in senior management positions in the period 2003-2022 is Malta (5.54%), and the highest percentage (37.89%) is registered in Norway. At the European level, the lowest average was recorded in 2004, with approximately 10% positions occupied by women in senior management positions, and the highest percentage was in 2022, with almost 28%.

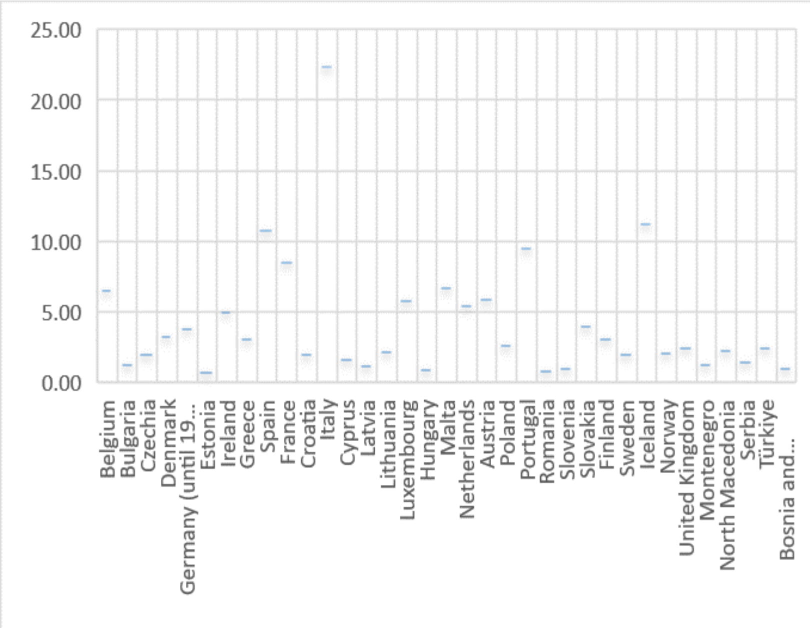

Figure 7.1 The distribution of dynamic index regarding the percentages of positions occupied by women in senior management positions in 2003-2023 period

Source: own processing of EUROSTAT data

Over the course of almost two decades, it seems that the phenomenon of female leadership has just tripled.

As can be observed in Figure 7.3, I tried to represent the minimum and maximum percentage of positions occupied by women in senior management positions in 2003-2022 period and it is obvious that female leadership has registered an evolution over time, which even if it is not significant, it is surely a sustainable one.

The percentage of women in managerial roles appears to be higher than 40% in Norway, Iceland, the Netherlands, Italy, France, and Denmark. Much below 20% are nations like Bosnia and Herzegovina, Turkey, Malta, Hungary, Cyprus, and Estonia.

These findings, in my opinion, are also related to the fact that Westerners have far more liberal lifestyles, views, and assumptions than people from the East. Women in Western Europe are more independent and gain from support, whilst those in Eastern Europe still deal with outmoded preconceptions that only serve to keep them in place and highly impact their level of fear related to what the public opinion is.

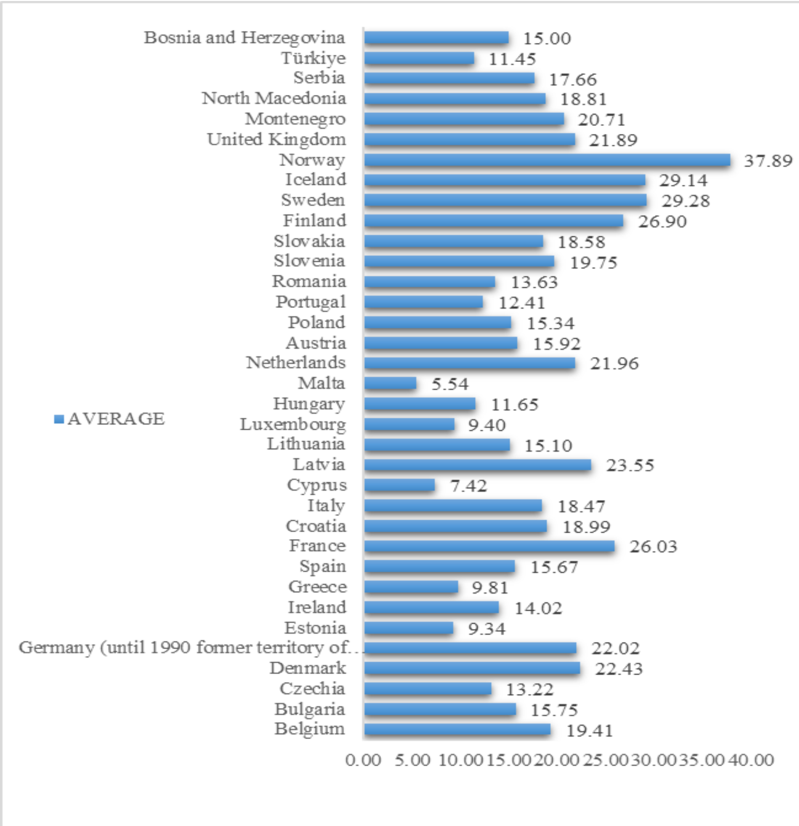

Figure 7.2 The average of the percentage of positions occupied by women in senior management positions in 2003-2022 period

Source: own processing of EUROSTAT data

Conclusions

Throughout the analyzed period (2003-2022), the percentage of positions occupied by women in senior management positions increased up to 5 times for most of countries. The largest change from 2003 to 2022 was a 22 times grater increase in Italy, indicating that the concept of leadership has changed significantly in this nation.

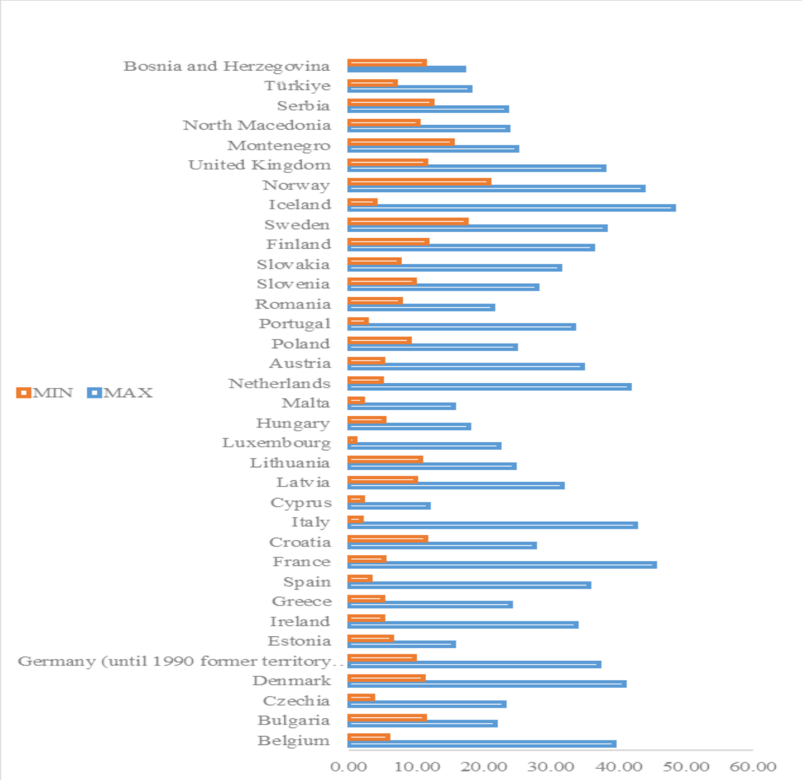

Figure 7.3 The minimum and maximum percentage of positions occupied by women in senior management positions in 2003-2022 period

Source: own processing of EUROSTAT data

I discovered that, between the years 2003 and 2022, Malta had the lowest average percentage of senior management positions held by women, whereas Norway had the greatest average percentage. At the European level, the lowest average was found in 2004, when only about 10% of senior management positions were held by women, and the greatest average was found in 2022, when about 28% of posts were held by women. It appears that the phenomenon of female leadership has increased by three times in the last nearly two decades.

The fact that Westerners have significantly more liberal lives, worldviews, and presumptions than individuals from the East, in my opinion, is also related to these findings. While women in Eastern Europe continue to contend with outdated notions that only serve to lock them in place and have a significant negative impact on their degree of fear related to what the general public thinks, women in Western Europe are more independent and benefit from assistance, in order to create and maintain a professional carrier.

In conclusion, it is clear that, throughout time, there has been a change in female leadership that, while not very significant, is obviously a sustainable one.

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CHARACTERISTICS OF THE COOPERATIVE SYSTEM AND FEATURES OF THE MAIN TYPES OF COOPERATIVES IN BULGARIA[3]

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Abstract
The modern cooperative movement/system and modern cooperative - since their emergence have been continuously under the spotlight in individual regions and across the world. In Bulgaria, the emergence of modern cooperatives as a social and business model dates back to the 1890s. It emerged in response to specific social, economic and cultural constellations in the late 19th century, as a type of structure whose organizational and managerial architecture was based on the democratic style of management. Objective of the study: To study and characterize the cooperative system and the features of the main types of cooperatives in Bulgaria, in order to reveal their potential for implementing innovative solutions in response to contemporary challenges.

Keywords: *cooperative, characteristic, types, production/agricultural cooperatives.*

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Introduction

Cooperatives as a model for doing business have existed since the dawn of mankind, and modern cooperatives for nearly 200 years. Their roots are in Western Europe, from where they spread globally in different areas of economic, social and cultural life. In the diversity of business models, cooperatives are organisations actively involved in solving economic, social, cultural, national and local problems (unemployment, inequality, educational mobility, innovation, etc.). They create value for their members and other stakeholders, support the growth of the economy and represent the interests of a significant part of the world's population. They are considered a major actor in the implementation of the 2030 Agenda for Sustainable Development of the United Nations and are present in all areas aimed at global development for the period 2016-2030.

The diversity of global cooperative movement/system is as remarkable as its economic and cultural significance. The United Nations declared 2012 the Year of Cooperatives worldwide and the EC adopted a Social Enterprise Act treating cooperatives as such. The global cooperative has a membership of over 1 billion and over 100 million employees. Cooperatives operate globally across all economic sectors and the 300 largest cooperatives alone have a combined turnover of over $2.2 billion.

The modern cooperative movement/system and modern cooperative – since their emergence have been continuously under the spotlight in individual regions and across the world. The reason for this global interest is their specificity as a social business model. This stems from the "dual nature" of the cooperative to develop simultaneously both as business and social organization (Draheim 1952). This is a challenge and a prerequisite for more and more people to perceive this phenomenon as an alternative to the investor (corporate) business model.

In Bulgaria, the emergence of modern cooperatives as a social and business model dates back to the 1890s. It emerged in response to specific social, economic and cultural constellations in the late 19th century, as a type of structure whose organizational and managerial architecture was based on the democratic style of management. The latter focuses on its members and the cooperative group by applying the democratic voting principle of '1 member – 1 vote' in the supreme governing body, the General Assembly, regardless of the capital owned by the cooperators. It is undeniable that the Bulgarian cooperative movement/system in the course of its almost century and a half of development has had both a significant flourishing and a number of downturns. This is the reason for the considerable interest in both its theory and practice.

Elucidating the emergence, establishment, development and future of the phenomenon of 'modern cooperative movement/system and its core – the modern cooperative' turns out not to be as easy as it first seems. The complexity is rooted in the peculiar 'dual nature' of the cooperative, which manifests itself as a single, integrated whole of 1) an enterprise (a business organisation) and 2) a cooperative group organising collective action in a specific historical and social context.

Objective of the study: to study and characterize the cooperative system and the features of the main types of cooperatives in Bulgaria, in order to reveal their potential for implementing innovative solutions in response to contemporary challenges.

Materials and Methods

The internationally accepted definition of cooperative comes from the International Cooperative Alliance (ICA, 1995): "A cooperative is an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise".

The vast majority of publications in Bulgaria in the last 30 years do not cover cooperative work in its entirety, but analyse a particular type or combination of types of cooperatives. Aleksandrov studies the consumer cooperatives, and Mihailov; Kaneva; Koteva; Ivanova – the agricultural cooperatives. Kanchev and Doichinova study and analyze agricultural cooperatives and labour producing cooperatives. Consumer cooperatives and housing cooperatives are studied by Zabunov, Yovkova, and Peloff. Without diminishing the significance and scientific value of the scientific works of the listed authors, we emphasize that they are characterized by static or semi-static, i.e. individual aspects of cooperatives in micro- and macroaspects are analysed.

Cooperatives develop over time a variety of specific models based on their different objects of activity. Some of the popular models are agricultural, consumer, credit, producer cooperatives, etc. Producer cooperatives are a complex form in which each member contributes not only with capital but also with his personal labour, i.e. they bind here destiny to that of the cooperative. Bulgarian productive cooperatives, known as labour-productive cooperatives (LPCs), have the historical merit of creating the modern productive infrastructure in Bulgaria. Scientific research and publications in this direction have: Boevsky (1993), Atanassova (2002, 2003); Atanassova, Kostadinova, Petrova (2005); Atanassova, Gaidardzhieva, Kostadinova (1999, 2009); Sarov and Tzvetanova (2019). Currently, productive cooperatives in Bulgaria have added new functions and changed their management approach. They have become central to the sustainable development of the rural economy (including through the development of specific business models), their management teams are displaying entrepreneurial skills and changing organisational behaviour in line with market conditions and competitive conditions for production and trade, and are orienting themselves towards the introduction of innovative products and processes, including conservation agriculture, circular and bioeconomy. The above statements are based on publications: regarding the role of business units (including cooperatives) in rural development – Turlakova (2019), and Turlakova *et al.* (2015); on building sustainable business models and entrepreneurship in rural areas – Turlakova (2020; 2014); in relation to the environmental policy of organizations, business models and innovation, incl. through conservation agriculture, circular and bioeconomy – Ivanova, Nikolov (2018); Nikolov (2012); Turlakova (2019); Ivanova (2019) and others (Sarov & Tzvetanova, 2022a; 2022b).

Scientific research results that highlight the dual nature of cooperation are reflected in the publications of Boevsky, Kramer (1997; 1998; 1999), Theesfeld, Boevsky, (2005), Boevsky, (2007), Boevsky, Sarov (2017), Boevsky, Laurinkari (2017), and they need to be upgraded in line with the current societal challenges in Bulgaria. To this should be added the study of the cooperative group, the contemporary manifestation of cooperative culture and the cooperative governance structure; the cooperative it as a sustainable social business model and it is based on specific values and basic cooperative principles. This is the immanent characteristic and uniqueness of the internal cooperative environment, based on the involvement of each member with the operations of the cooperative.

The manifestation of cooperative values and principles in turbulent environments and diverse challenges such as the current crises, pandemics, etc. is underexplored. In this aspect, the study will be original and innovative as it will answer the question whether these values and principles contribute to sustainability and good organizational performance in the cooperative. It is relevant for theory and practice to identify which of the values and principles need to be adopted and applied by members for cooperative sustainability to occur. The research will acquire an original and innovative character by answering several research questions, which are so far insufficiently clarified in the literature, but necessary in practice: specific characteristics of the Bulgarian cooperative work and its building blocks; modern types of cooperatives; the immanent dual nature and specificity of the cooperative as the core of the cooperative business; the role, specificity and importance of cooperative management.

Under conditions of significant socio-economic change in Bulgaria, the innovation potential of different cooperative governance structures/cooperative business models needs to be investigated and determined, linking them to the Comprehensive Approach for Accelerating the Implementation of the UN 2030 Agenda for Sustainable Development.

The focus of the scientific study is actor-centered, which is why the achievements of the German historical-ethical school (Nörl 1995) and the Methodological triangulation (Ostrom 1999, 2010; Yin 2009, 1994, 1993, 1989) are applied in combination. *The German historical-ethical school* (Deutsche Historisch-Ethische Schule) does not consider man (the actor) statically, solely from the point of view of neoclassical economics, but as a rational actor (homo economicus) in the market, in a dynamic (historical) and comprehensive context. This dynamic context represents the entire web of surrounding and changing economic, social, cultural and legal conditions. *The Methodological Triangulation* implies the use and combination of different methods and techniques for obtaining and validating information when answering a separate, specifically posed, research question. It implies the use of interviews, observations, document analysis, etc. The used observation techniques can be applied as direct observation, interactive empathic observation and an implemented case study, which provide empirical information, a base and the possibility of cross-checking. All this represents a rich arsenal of qualitative and quantitative empirical information.

In the course of the research work, traditional general scientific methods be used – abstract, historical, logical, etc., logical-theoretical – comparison, generalization, analysis, synthesis, induction, deduction, analogy. For the systematization of the types of cooperatives (cooperative models) in Bulgaria, empirical-theoretical methods also be applied: description and categorization. In the study also be used: analysis and summary of literature, tabular, graphical and schematic presentation of characteristics of the type cooperative.

Results and Discussion

Cooperative structures in agriculture and non-agriculture in Bulgaria 2022

Chart 7.1 highlights the existing cooperatives in Bulgaria. It shows that the cooperatives in agriculture are predominantly in the sector of agricultural production. Only producer groups/organizations are in the sectors logistics and marketing. Irrigation associations and agricultural credit cooperatives (credit cooperatives) promote mainly small scale farmers and members of agricultural production cooperatives.

Agricultural production cooperatives (production cooperatives) have been the dominating form of enterprise in agriculture since 1990. They coexisted during the 90s of the 20th century with subsistence and semi-subsistence farms. Figure 7.4 shows that this cooperative type had a rapid increase in the 90s. They emerged during and after the liquidation of the former communist agricultural productive cooperatives (TKZS). In contrast to other CEE countries the Bulgarian production cooperatives are not successors of former TKZS. They are new formations which will be explained below.

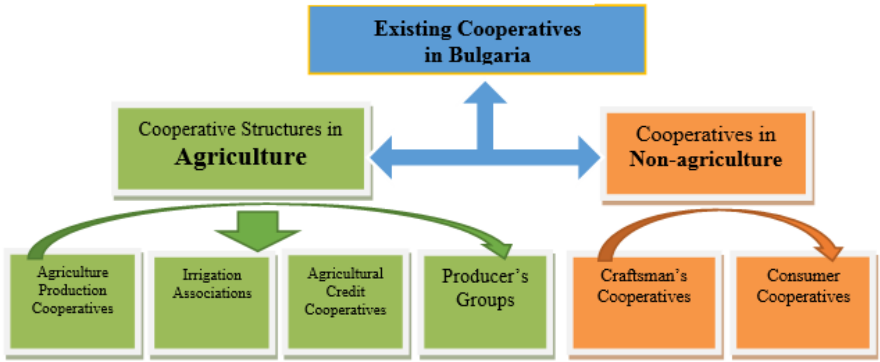

Chart 7.1 Cooperative structures in agriculture and non-agriculture in Bulgaria 2022

Source: own chart

Types of cooperatives

Production/Agricultural Cooperatives

Table 7.1 shows that the main function of the production cooperatives is organizing the agricultural production. This production is focused on sectors which are predominantly not labor intensive, because they operate with low number of full time employees and hire part time and seasonal workers.

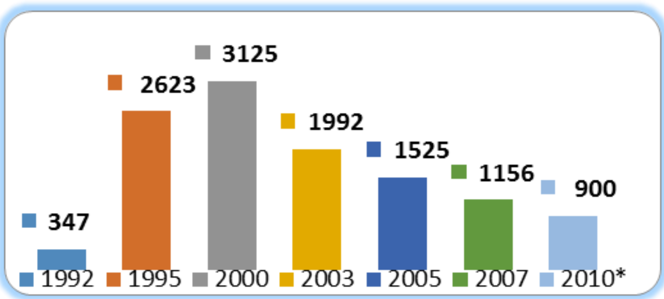

Figure 7.4 Development of production cooperatives, 1992-2010

Source: National Statistical Institute, MAF, Department Agrostatistics; Agricultural Census 2003, Agriculture Farm Structure Survey 2005, Agriculture Farm Structure Survey 2007, Agricultural Census 2011

The additional functions on Table 7.1 show a clear trend in the direction towards multifunctionality by most of the production cooperatives and follow the pre-communist tradition of multi- and all-functionality of agricultural cooperatives.

Table 7.1

Characteristics of Production Cooperatives

Sector	Cereals, dairy, fruits, vineyard, beekeeping, poultry
Legal form	Cooperative
Geographical scope	Local (village, municipality)
Financial/ownership structure	Participation share cooperative
Type of members	Primary members
Main and additional functions	Main function: organizing production; Additional functions: providing farm machinery service, supply farm inputs, warehousing, milling, oil pressing, providing food for members' households, extension service, lease-in small plots from members consolidate this plots in big plots and lease-out the consolidated agricultural area to other firms
Diversity of function and products	Economic (Organizing production, providing farm machinery service, supply farm inputs, warehousing, milling, oil pressing, providing food for members' households, extension service)
	Rural development (cooperation with the municipality or village administration in deferent projects)
	Social services (social and health security)
	Cultural services (organizing cultural events in the village)
Position and function in the food chain	Production and logistics

Table 7.2 presents 20 largest production cooperatives in Bulgaria, which develop their production potential and successfully carry out their activities despite the turbulent times. Some of them were created in the early 90s of the 20th century (like Cooperative 4, Cooperative 9, Cooperative 16) and until now they are steadily present on the market of agrarian products in the country.

The geographical location of the 50 sustainably developing production cooperatives for the last ten years in Bulgaria can be seen in Figure 7.5.

Table 7.2

The 20 largest production/agricultural cooperatives in Bulgaria

No. the Cooperative[4]	Sector involved in:
Cooperative 1	Cereals, providing machinery service, supply farm products, warehousing
Cooperative 2	Cereals, diary, providing machinery service, supply farm products, warehousing, extension service, retail, land consolidation and land exchange
Cooperative 3	Cereals, supply farm products, warehousing, extension service
Cooperative 4	Cereals, providing machinery service, supply farm products
Cooperative 5	Cereals, animal breading, supply farm products, warehousing, retail
Cooperative 6	Cereals, providing machinery service, supply farm products, warehousing, extension service
Cooperative 7	Cereals, providing machinery service, supply farm products, extension service, land consolidation and land exchange warehousing
Cooperative 8	Cereals, providing machinery service, fruits, supply farm products, warehousing, extension service, retail
Cooperative 9	Cereals, providing machinery service, supply farm products, warehousing, retail, extension service, land consolidation and land exchange
Cooperative 10	Cereals, providing machinery service, supply farm products, warehousing, retail
Cooperative 11	Cereals, providing machinery service, supply farm products, warehousing, extension service
Cooperative 12	Cereals, supply farm products, warehousing, extension service
Cooperative 13	Cereals, providing machinery service, supply farm products
Cooperative 14	Cereals, providing machinery service, warehousing
Cooperative 15	Cereals, providing machinery service, land consolidation and land exchange
Cooperative 16	Cereals, providing machinery service, supply farm products, warehousing, extension service, extension service, land consolidation and land exchange
Cooperative 17	Cereals, supply farm products, warehousing, extension service
Cooperative 18	Cereals, providing machinery service, supply farm products, warehousing
Cooperative 19	Cereals, providing machinery service, supply farm products, warehousing, extension service,
Cooperative 20	Cereals, supply farm products, warehousing

Source: Experts and Chairman of National Association of Agricultural Cooperatives in Bulgaria and own studies

[4] *Due to the confidentiality of the information, the names of the cooperatives are not indicated*

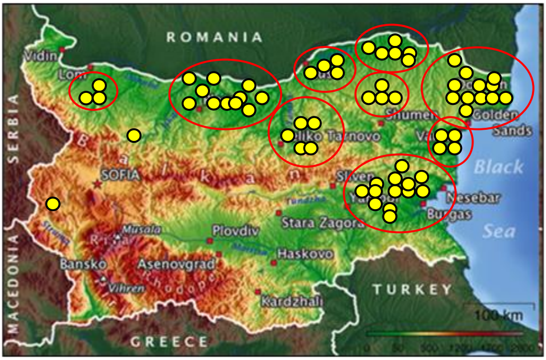

Figure 7.5 Geographical distribution of the top 50 agricultural cooperatives

Source: own figure

In order to reveal the features of production cooperatives and compare them with other cooperative models, three agricultural sectors - Cereals, Fruits, Wine and typical cooperatives from them were selected (Table 7.3, Figures 7.6, 7.7), in which in-depth research is planned to be carried out under the launched project "Cooperative models for doing business in Bulgaria and their potential for implementing innovative management solutions", financed by the "Scientific Research" Fund (Contract №КП-06-Н65/1).

Table 7.3

Production cooperatives in selected agrarian sectors, which are researched under a project Contract №. КП-06-Н65/1, 2023-2025

Sector	Cooperative[5]
Cereals	Cooperative A; Cooperative B; Cooperative C; Cooperative D Cooperative E
Fruits	Cooperative F; Cooperative G; Cooperative H; Cooperative J; Cooperative K
Wine	Cooperative L; Cooperative M; Cooperative N

Source: own studies

[5] *Due to the confidentiality of the information, the names of the cooperatives are not indicated*

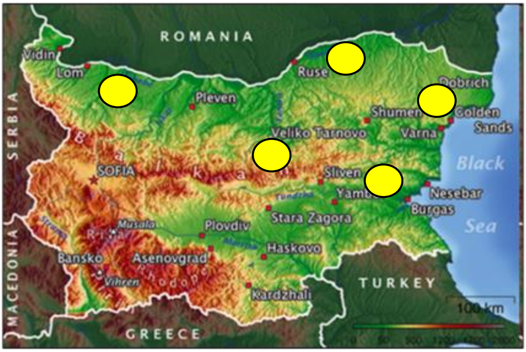

Figure 7.6 Geographical distribution agricultural cooperatives of the top 5 in sector ***Cereals***

Source: own figure

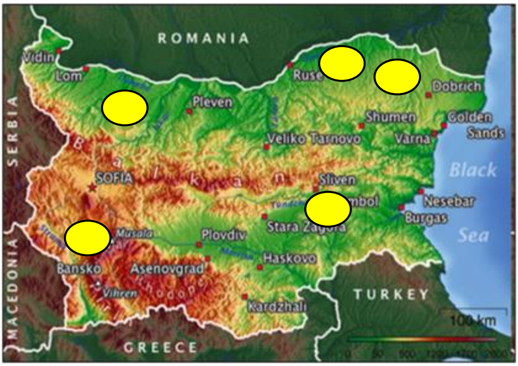

Figure 7.7 Geographical distribution agricultural cooperatives of the top 5 in sector ***Fruits***

Source: own figure

Chart 7.2 shows a three-tire structure of cooperative organizations on territorial principle:

➢ *Tertiary cooperative* on national level (National association of Production Cooperatives in Bulgaria) provides their members (secondary and primary cooperatives) non-economic services as: auditing, consulting, information, extension service, representation of members' interests on national level (lobbying). Convinced of the importance of cooperatives, the chairman of the National Association of Agrarian Cooperatives says: "There is a place for cooperatives in the economic life of Bulgaria, the need for such cooperatives will be greater and greater so that small landowners can oppose the larger ones' landowners".

Chart 7.2 Structure of Production Cooperatives' Associations, 2022

Source: own chart

➢ *Secondary cooperatives* on regional level (Regional Associations of Agricultural Cooperatives) which provide their members (Production Cooperatives) non-economic services as: auditing, consulting, information, extension service and representation of members' interests on regional level. One exception existed years ago. The Regional Association of Agricultural Cooperatives in Varna operated a cooperative enterprise for supplying their members with agricultural inputs but went bankrupt after few years. Most of the primary Production Cooperatives are members in secondary cooperatives. A small number of primary cooperatives are direct members of the tertiary cooperative due to the absence of secondary cooperative in their district/region. At the end 2021 the number of Regional Associations of Agricultural Cooperatives was 19 [6];

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[6] *President of the National Association of Agricultural Cooperatives, multiple interviews in his office in Sofia, 26.10.2021*

- *Primary cooperatives* on local level (Production Cooperatives). Their characteristics are given on Table 7.1. At the end of October 2021, 450 production cooperatives[7] are members of the National Association of Agricultural Cooperatives. Not all of the existing 900 production cooperatives are members of regional and national associations as the Bulgarian Cooperative Act they are not obliged to participate in secondary and tertiary cooperative associations. This means that participation in these structures is voluntary in contrast to Germany for example. Furthermore, some members of the National Association of Agricultural Cooperatives change their membership to the Central Cooperative Union, which is the National Association of Consumer cooperatives and vice versa.

Agricultural Credit Cooperatives

The Agricultural Credit Cooperatives (Table 7.4) were founded within a EU-Phare project in 1996 but remarkably followed a regional bottom up approach in their synthesis. Of 33 formerly founded cooperatives today 15 operate successfully and are united in the National Cooperative Association Eurostar (NCA). Each cooperative carries out solely lending to approx. 150-250 small private farmers in combination with non-financial services such as consulting in production and marketing. Especially in remote rural areas the financial cooperatives are institutions based on tight local social networks and enable small farmers and rural enterprises to achieve benefits of collective action. Over more than a decade the cooperatives provided loans to mainly agricultural producers and achieved a slight growth in equity. Their main impediment for further development is the restriction of their services to lending. Instead of increasing their membership for depositors, the cooperatives make use of external refinance to increase their loanable funds. They incur additional exposure to market risks and face high capital costs, which endangers their equity in the long term.

Irrigation Associations

Irrigation associations are voluntary organizations of individuals and legal entities that, through mutual aid and cooperation in the public interest, carry out activities related to irrigation and drainage of agricultural lands in a certain territory.

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[7] *President of the National Association of Agricultural Cooperatives – Interview*

Table 7.4

Characteristics of Agricultural Credit Cooperatives

Sector	Finance
Legal form	Cooperative, non-financial institution
Geographical scope	Local, often in remote rural areas or focused on a very specific clientele
Financial/ownership structure	share capital of members and equity from grant (see below)
Main functions	Crediting small scale farmers
Diversity of function and products	Diverse loans, non-financial services
Position and function in the food chain	Development of a label for the produce of small farmers, support for local selling
Type of members	Small private farmers (registered as farmers)

Source: own table

The member of the irrigation association has the right to participate in the activity of the association and to benefit from all services provided by it, to use preferential fees for irrigation and other hydromelioration services provided by it.

Distribution of natural water resources over time and space is uneven in Bulgaria, making irrigation necessary to reduce production risk in agriculture. The irrigation sector has been drastically affected by the political and economic changes that followed the collapse of communist system.

Table 7.5

Characteristics of Irrigation Associations

Sector	Irrigation and drainage
Legal form	Association
Geographical scope	Local, regional (only few cases)
Main functions	Irrigation and drainage
Diversity of function and products	Irrigation, drainage, fisheries and water fowl only, Art. 3 and Art. 4, Low on Irrigation Associations
Type of members	Primary members
Financial/ownership structure	Cooperative with subsidiaries

Source: own table

The irrigation infrastructure was built to serve large production units during communism and no longer meets the needs of the new farming structures, discussed above. The infrastructure deteriorated and irrigation water use, and correspondingly, areas under irrigation sharply declined. To change this situation irrigation associations were established. Their characteristics are given on Table 7.5.

The irrigation associations have established a two-tire structure of cooperative organizations on territorial principle. More than a half of the irrigation associations on local level participate in a National Association of Water Users which operates on national level. The number of irrigation associations in Bulgaria is about 140, unevenly distributed in the northern and southern parts of the country (Figure 7.8). However, there is no real positive development in irrigation. The rising number of irrigation associations reflects only the improvement in public administration and the increased number of registered irrigation associations.

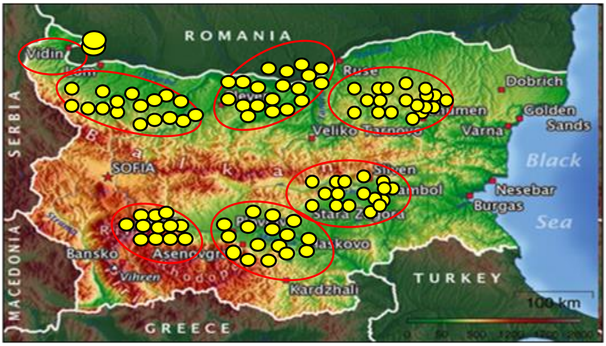

Figure 7.8 Geographical distribution of irrigation associations in Bulgaria

Source: own figure

Producer groups/organizations

At the beginning, when the support measures were announced, there were great enthusiasm and hopes among the small and medium-scale farmers. According to expert appraisals, between 450 and 500 initiative groups were established, which aimed at establishing producer groups as a transitional mode on the way to register as producer organizations. Table 7.6 gives their characteristics.

Table 7.6

Characteristics of Producer groups/organizations

Sector	Fruits, Diary
Legal form	Any legal form
Financial/ownership structure	Private
Geographical scope	Local, regional
Main functions	Marketing the members' products
Diversity of function and products	Logistic, processing, marketing
Position and function in the food chain	Sorting, packaging, storage, transport, processing, marketing
Type of members	Primary members

Source: own table

Four producer organizations exist at the moment in the Fruit and Vegetables sector. According to experts' opinion from Ministry of Agriculture, they cannot meet the needs of their members (do not achieve their aims) and are functioning only formally. In dairy sector the producer organization "Dobrudjansko eko mlyaco"[8] operates successfully and 3 other organizations not so either.

In recent years, the National Sheep and Goat Breeding Association[9] has been developing a successful activity. It is one of the largest branch animal breeding organizations in Bulgaria. The legal status of NOKA is an association for carrying out activities for the public benefit, according to the Law on Non-Profit Legal Entities. The main goals of the association are aimed at: protection of the general interest of its members before state and municipal bodies and institutions, as well as before international and other related organizations in the country and abroad; To defend the interests of its members related to the production of sheep and goat milk, lambs, goats, wool and skins; To develop programs and projects for the development of the activities of its members; Increasing the competitiveness of sheep and goat farms in the country, etc.

Conclusions

The cooperative business and the modern cooperative as complex structures can become a sustainable business model of the future. They are a real response to the increased complexity, uncertainty and

[8] *dobrudzhansko-eko-mliako-ood.html*

[9] *https://noka.bg/*

turbulence of the contemporary and future economic, social and cultural environment, which requires flexible structures, networked business models and the implementation of innovative technologies.

The Bulgarian cooperative movement/system and its core – the modern cooperative, considered as a social and business model in the conditions of the contemporary challenges facing society, on the one hand, requires complexity and innovation in scientific research, and on the other hand, the application of an interdisciplinary and dynamic approach. Only by combining these two aspects of the research work can be fully highlighted the dynamics of the Bulgarian cooperative movement/system. This is conditioned by the fact that the key to this highlighting lies in the understanding and explaining of both – the multidimensionality of the dual nature of the cooperative and the connectivity of the cooperative to its members. Such connectivity focuses on the relationship with them, because the members of the cooperative business model are at the same time owners, customers, and an integral part of the governance structure and its economic operations. The connection with the members gives the cooperative and cooperative business a uniqueness and specificity that is different from other business models. It is complemented by the relationships between the members themselves, between the members and the employees, and between the other stakeholders.

The above arguments are only a part of the multifaceted scientific problematics of cooperative movement/system and cooperative, which determine its relevance and significance, as well as focus on the mentioned relations (member-cooperative, member-cooperative group, etc.) for a long period of time – from the emergence, establishment and development in the specific context to the present day as a social business model.

Acknowledgements

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TERRITORIAL MARKETING TOOLS: STRUCTURING OF ELEMENTS

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Abstract
The article addresses theoretical and practical aspects of the application of territorial marketing tools and reveals the structure of elements in relation to the creation of the marketing complex of local communities. The 4 Ps of marketing are characterized (territorial product, price, place (distribution), and promotion of a territorial product), and the marketing tools of local communities are supplemented by the 2 Ps elements – policy and people, which currently have a certain impact on the development and management of communities based on the principles of marketing due to the expansion of democratic processes. Among the tools, the article examines the process of segmentation of consumers of a territorial product and marketing research of target groups that form similar directions of the

needs of the consumer social services market. The importance of an approach to the development of a local community as a comprehensive system with numerous elements is emphasized. The system can be considered from three points of view: administrative and territorial structure of settlements, consumer environment of target groups, and sectors (branches). Structuring the elements of territorial marketing tools based on various approaches ensures high competitiveness and attractiveness of territories.

Keywords: *territorial marketing instruments, marketing complex, target audiences, territorial product, complex system of a local community.*

Introduction

The concept of the marketing approach to the strategic planning of territorial development provides for the extension of territorial marketing tools to the entire process of strategic planning and management of local communities, which is the basis for determining the major strategic objective, i.e. the fullest satisfaction of the needs of the main target audience and target markets of a local community – the local population, whose quantitative and qualitative needs can be manifested in the focus of various target groups at the same time: accommodation, business, visitors, investors, authorities, etc. According to P. Kotler, territorial marketing is one of the main tools influencing the economic development and competitiveness of a territory and a procedure that can act efficiently and promote and elaborate the image of the territory to make it attractive and competitive in prospective target markets (Kotler, 2000).

The territorial marketing tools are a set of means and measures used to examine the marketing capacity of a territory, to plan and implement marketing activities on promotion of a territory, and to determine the needs of target groups of the community's consumer environment, which are formed, structured, evaluated, and applied in the systemic marketing complex. "Marketing tools improve the attractiveness of a territory for residence, professional activity, self-expression, investments, visits, and cooperation" (Budnikevych, Havrysh, 2016).

The territorial marketing complex is represented by marketing tools (means) of the so-called marketing mix: territorial product, price of the territorial product, place (localization) of the territorial product, and promotion of the territorial product. At least two more tools are peculiar to the territories of local governments: the impact and support of the local community and political forces of various levels. By creating an efficient complex, territorial marketing transforms from a simple management function into a tool for the active promotion of territories in internal and external environments.

Territorial marketing is a set of technical means, tools, skills, and actions, the implementation of which will allow to sufficiently enough "sell" and offer to the interested parties the particular quantitative, qualitative, relative, and real characteristics of territories, which will be realized in the needs of various target groups determined according to the following sequence.

1. Clear identification of a territory's problems.
2. Identification of the goals, mission, and space in which the competition with other territories will take place, as well as the positioning of the consumer environment of a local community – identification of target groups.
3. Establishment of a specific identity of a territory, advantages, strengths, weaknesses, threats, and opportunities for strengthening weaknesses and eliminating threats and risks.
4. Positioning of a territory – identification and creation of differences in contrast to competing territories, which provides an opportunity to invest money and energy.

"In terms of creating competitive advantages, territorial marketing can be considered as an integrated set of tools or activities that ensure higher competitiveness of a territory in relation to other territorial units. However, from another perspective, territorial marketing is understood as the "organization" of territory to meet the expectations of its target markets" (Raskowski, 2014).

Materials and Methods

When studying the territorial marketing tools that are the basis for the creation of the marketing complex of a local community, the following methods are the most appropriate: comprehensive systems thinking approach, observation, socio-economic analysis, factor analysis, and the study of the consequences of dynamic changes before and after the hostilities in Ukraine. "The problems must be examined, analyzed, and described in terms of causes of their emergence, the factors that intensify their impact, the dynamics of their increase in space and time for a community, region, and country, the threat to human health, and environmental and industrial safety" (Oleksyuk *et al.*, 2022).

Methodological approaches to the identification of the peculiarities of territorial marketing tools for the creation of the territorial marketing complex are developed based on qualitative features and quantitative and relative characteristics in accordance with the functional types of territories established by Article 11.2 of the Law of Ukraine No. 2389 as of 9 July 2022 "On Amendments to Certain Legislative Acts of Ukraine Concerning the State Regional Policy and the Policy of Regional Recovery". In order for the executive authorities and local governments to plan and stimulate the development of regions and territories and to establish special mechanisms and tools, the following functional types of territories are defined: 1. Territories of recovery; 2. Regional growth poles; 3. Territories with special development conditions; 4. Territories of sustainable development (Law of Ukraine, 2022).

Meanwhile, the main needs of the target audiences are constant, such as accommodation, business activity, development, investment, tourism, etc. However, the qualitative characteristics will be different depending on the consequences of wartime. The comprehensive and in-depth professional studies will be especially important when conducting the factor analysis of dynamic changes in the socio-economic condition of the territories before the large-scale invasion of Russian troops into Ukraine and in the post-war period. The results of the studies should reflect the realities of the current internal condition, the possibility of dynamic development, and, what is essential, the development based on fundamentally new legal, economic, technological, social, and environmental approaches, taking into account the international environment and the way to Ukraine's accession to the European Union.

Results and Discussion

Before the beginning of strategic planning of the development of local communities and marketing activity in terms of positioning and promotion of the community's capacity for a consumer, it is necessary to form a marketing complex of a local community, taking into account the whole range of the community's peculiarities in time and space. "The territorial marketing complex is a unique socio-economic component of a local community, special and distinctive for each community and its target groups, the quantitative and qualitative parameters of which should be determined exclusively based on its own potential and priorities of development and overcoming of negative trends" (Oleksyuk *et al.*, 2021)

For a more detailed characterization of territorial marketing tools and structuring of marketing complex components, the following elements will be considered.

Territorial product – product "local community" – is the range, quantity, and quality of resources of a territory in demand by its consumers (target audiences), including geographical location, population (staff), quality of life, infrastructure, ability to work with high technology, raw materials, level of business activity, level of business development and support, etc.

Territorial product price is the cost incurred by consumers of a territorial product in the course of consumption, including the cost of utilities, the level of the tax burden, the cost of assets, and other components of a territorial product as goods and services established by local governments and utility companies. In addition to value terms, the territorial product price includes benefits, compensatory payments, and pubic use of general territorial benefits (safety, protection, ecology, public spaces, etc.).

Territorial product place (distribution), including material resources, staff, consumers, and intellectual potential, especially the opportunities of modern information technology when providing social services and ground communication.

Promotion – advertising and – PR companies, namely determination of recipients, communication channels, and the most optimal information carriers for reaching target groups and external interested parties.

Policy is the impact on the socio-economic development of a community and improvement of its authorities' competitiveness and activity within the limits of their competence, including the adoption of legislation and approval of regulatory documents for the operation of internal entities of the local community, participation of elected community representatives (members of parliament, local deputies) in the elaboration and selection of optimal strategic development directions, etc.

People (public opinion) represent the role of civil society, namely the public discussion of important strategic solutions for the development of the community through appointed/delegated representatives, participation of citizens and NGOs in working groups (development of Strategic Plan, Local Community's Marketing Strategy, etc.), and certain activities in case of violation of the rights of the community residents to environmental and industrial safety, development of petitions on certain issues, which must be properly addressed by the authorities.

Acceptance of the marketing complex elements from the perspective of 4C is essential in territorial marketing: the value of goods and services, consumer spending on value satisfaction, affordability of a good for a consumer as value satisfaction increases, and awareness of a consumer. "Therefore, it is necessary to develop a set of determined utilities aimed at satisfying the main interest of a certain target audience. The marketing product for each of them contains similar elements, but the requirements to the properties of the element depend on the specifics of the target market" (Budnikevych, 2012).

The situation of free market regulation between a seller (we accept the conditional definition of a local community) and a buyer (entities that form the target segments for consumption) is absent in territorial marketing. The final product in territorial marketing is not a particular product but a unique multisystem offer formed based on the consideration of competitive advantages and prospective capacities of each community in spatial perception. Meanwhile, a significant part of the consumer market of social services in the communities shows signs of monopoly or limited choice.

Identification of the respective marketing tools for a local community allows to reveal the real condition of its competitiveness and the ways of its improvement, i.e. to determine the real advantages and the means of their use in order to achieve the strategic sustainable development goals of the community in the future. In addition to the determination of a set of marketing tools for a local community (4P+2P), their structuring in the communities is supplemented by additional tools, including:

– consumer segmentation: consecutive focus on the interests and needs of consumer groups and types of activities that attract resources to the local community without sacrificing the interests of the local community and create conditions for improving the quality of life of the population;

– marketing research: obtaining information for the management of the community following the marketing principles, considering the factors of the competitive environment, revealing the factors influencing the community development in time and space, determining the profile of the target audiences present in the community, reconciling the local goals of individual consumers and business entities with the interests of the local community and regional and national interests, forecasting the local community's development trends;

– philosophy, income, staff, personalization, perception – formation of a clear understanding of the future of the territory, including the desired type of economy, taking into account the real challenges of the war and post-war period;

The advantages are economically sound if the development strategy of a local community not only is based on a set of forecasts of resource development in the community, but also provides for their integration with regional and national resources and takes into account the real strategies of development of the main business entities registered in the local community – large enterprises, major investors, trade networks, and construction companies, which influence the economy, local economic development, and territorial marketing policy.

Local governments cannot independently and directly impact the factors of the external marketing environment. Their task is to study, identify, analyze, and forecast the development conditions. Macro-environment creates general conditions for the formation and development of territories, its factors can either open new opportunities for the local community or become prospective bearers of threats and risks, which is currently happening in Ukraine due to the enemy's invasion.

The technologies of territorial marketing and determination of the ways of formation of marketing tools allow local communities to secure the respective harmonization of the impact of international factors, to ensure a long-term cross-border effect, to develop partnerships with the territories of neighboring states, and to become the participants of international financial, investment, technological, food, and other markets.

For a deeper study and understanding of the processes taking place in the activity and development of a local community, it should be considered as a system with a large set of elements interacting with each other and with the environment, based on the method of a comprehensive systems thinking approach.

Quantitative, qualitative, and relative values of these elements in different local communities differ depending on the main features of the established community: geographical location, resource potential, spatial factor, population density, industrial and socio-economic burden, industrial and cultural heritage, market institutions, environmental condition, and many other criteria. A set of listed components defines the consumer environment of a community segmented to different needs of entities regarding accommodation and activities for life support.

For a local community, it is reasonable to use the following definition: “System is the elements of any set, their relationship, properties, and interdependencies, which interact as an integral complex and function in accordance with the defined patterns peculiar to this complex” (Vovk & Drohomyretska, 2022).

Residents are the simplest part of the system of elements of a territorial community. Meanwhile, each resident can be considered as a micro-subsystem and a carrier of the needs of life support, professional realization, activities for obtaining income, and scientific and cultural development. These micro-subsystems, invisible at first sight, together create the consumer environment of the community: residents, their business activity, socio-cultural development, and economic investment-innovation direction, reflected through the territorial marketing tools.

The structure of a complex system of a local community can have the following characteristics, which are comprehensively used in territorial marketing.

1. As an administrative-territorial unit created in accordance with the law with the defined location and list of settlements, where

the regional and national policies, rights, and powers of these parties are simultaneously realized.

2. As a consumer environment of a product "local community" for different target audiences segmented mainly by their needs: population, businesses, visitors, investors, authorities, etc.

3. As a place of distribution of benefits and social services in the sectoral (branch) breakdown: economy, education, healthcare, culture, sports, architecture, construction, administrative services, social services, environment, security, etc.

Therefore, the same complex system of a local community can be represented by different structural elements, depending on the condition of the representation of an object or a process.

The complex system of the consumer environment of a product "local community" is used in the marketing activity of local communities, which is focused on the satisfaction of needs of homogeneous entities interested in one way or another in accommodation, conducting activities, recreation, culture, education, and other needs, which can be satisfied by other homogeneous elements (housing, entrepreneurship, tourism, etc.), while combining the peculiarities of administrative-territorial structure and sectoral (branch) approach.

The system's condition is its characteristics at a certain point in time, which is used in marketing for research and analysis. The system has a certain behavior, i.e. a local community is managed in a proper manner and in compliance with the law. However, the result of this management can define some sustainable development patterns for a long time, while keeping the balance at the absence of external disruptive actions (now martial law and hostilities).

Therefore, local communities are a large complex dynamic system with the extensive structure and numerous interdependent and interacting elements, where the transition to a new condition can take place exclusively gradually due to legislative and socio-economic processes within the systems of higher levels – region and country.

The local community is, first of all, its residents, who have the rights, freedoms, and duties of a person and a citizen in accordance with the Constitution of Ukraine. In particular, Article 23 of the Constitution provides that "everyone has the right to free development of personality, provided that it doesn't violate the rights and freedoms of other people, and has obligations to the society, which ensures free and full development of personality" (Constitution of Ukraine, 1996).

This Article is realized through the provisions of other articles, including the right to housing and its privacy, freedom of movement, and free choice of housing, ownership, and use of one's property. Citizens may use public and municipal property to meet their needs, and have the right to entrepreneurship, medical care, education, legal assistance, environmental safety, etc. Article 48 of the Constitution states that "everyone has the right to an adequate standard of living for himself and his family, including adequate food, clothes, and housing". Liabilities include paying taxes and fees according to the procedure and amounts established by law, not harming the environment and cultural heritage, and compensating the damages.

Therefore, having systematized the needs of the community residents through the rights, freedoms, and liabilities guaranteed by the Constitution, it is possible to form a section of a territorial product as a territorial marketing tool, which will be consumed by the target audience "Population of the local community". When studying the marketing environment of the mentioned target audience, it is reasonable to outline and process the condition of dynamic changes by quantitative, qualitative, and relative parameters:

1. Population, demographic parameters.
2. Population density, age, and gender structure.
3. Labor resource balance, structural levels of demographic parameters of the regional and national condition.
4. Parameters characterizing the standard of living of the population, which are usually calculated per capita (housing, the satisfaction of physiological needs for food, communal and household utilities, goods turnover, medical treatment, culture, education, sports, recreation, and other obligatory benefits).
5. Internally displaced persons and their living standards.

The segmentation of the target audience "Business" is based on three approaches to the realization of the constitutional right of citizens to entrepreneurial activity not prohibited by law (Article 42) and work, including the possibility of earning a living. The target audience "Business" as a subsystem of a local community is examined and analyzed based on the division of business entities according to the type of ownership since local governments have different powers and rights in terms of business regulation according to the types of ownership.

According to the legislation on approaches, a territorial product as a marketing tool for the target audience “Business” should be formed based on the mutual needs of the local community and of businesses (production entities) regarding the perception, cooperation, mutual understanding, interactions, mutual assistance, regulation, and control within their powers.

In particular, the formation of the subsystem “Business” will be efficient if the groups of enterprises of the industrial-economic complex of a local community are formed based on the indicators within the parameters established by an expert (researcher).

1. Type of ownership, capital, economic-organizational structure, management authority.
2. Output in monetary and non-monetary terms.
3. The number of employees and average wage.
4. Fiscal component (types of taxes, amount, payment, debt).
5. Capital component (fixed assets, land plot).
6. Performance (income, losses, financial situation).
7. Prospective directions (investment attraction, expansion, the threat of bankruptcy, closure, cessation of operations, etc.).
8. The list of needs, wishes, requirements, and issues important for each entrepreneur, enterprise, company, or firm, which are “consumed” by them as a “local community” product.

The marketing tools for the target audience “Visitors” should be formed based on the capacity of the territorial community, which is essential for external entities interested in the sites of spiritual-cultural enrichment, recreation, entertainment, learning, health care, experience, organization and participation in business events, education, training, etc.

The target audience “Visitors” should be studied and analyzed in the following directions:

1. A list, inventory, identification, quality, and creation of objects that can be involved in achieving a goal of visiting the local community by external entities and develop a consumer segment;
2. Tourist flows, visitors of business events, and entities

receiving the services of recreation, healthcare, culture, sports, etc. represented in dynamics;

3. Financial-economic parameters – the cost of a tourist basket, tariffs, the cost of accommodation and food, and payment for other services, which can impact the volume of visitor flows and thus the competitiveness and attractiveness of territory in general, and can be expressed as a product "local community".

4. Creation and functioning of tourism clusters at the local and regional levels.

The following parameters should be taken into account when conducting a study to identify territorial marketing tools for the target audience "Investors":

1. Realized (built and commissioned) investment objects on the territory of the community, which can also be assigned to the target audience "Business". However, they keep some advantages (tax exemptions or other obligations to them from the state and the community). Moreover, the local community acts in the process of fulfilling obligations to investors, etc.
2. Investment attracted for real projects under construction.
3. Investment resources of a local community that are of interest to external and internal investors – land plots, unused real estate and infrastructure, industrial parks, restoration of destroyed infrastructure, historical and cultural heritage sites that require investment resources and reconstruction (restoration, major repairs, etc.).
4. Offers of general advantages for investors, which they can obtain by investing in the local community: labor resources, transfer of employees to their workplaces by public transport, agglomeration effect, training of professional staff in scientific institutions of the community, and environmental and additional infrastructural components.

The marketing component of the promotion of investment resources and advantages in the domestic and foreign markets, the experience of implemented investment projects, and cooperation with investors are also important, including the absence of corruption component and positive impressions of investors, which can be an additional means of communication and advertising. The 2021-2027 State Regional Development Strategy, approved by the Resolution of the Cabinet of Ministers of Ukraine No. 695 as of August 2020, provides for "the expansion of marketing support practices at the regional level and the introduction of a set of territorial marketing tools, including through the development of regional marketing strategies and brands" (Cabinet of Ministers of Ukraine, 2020).

During the post-war reconstruction and recovery and Ukraine's preparation for accession to the EU, the approaches to the development of marketing tools for the target group "Investors" will change in accordance with new legislation, peculiarities of investment sources, and the urgent need to attract investments.

The availability of target segments of a consumer environment as subsystems of a local community will depend on its qualitative and quantitative characteristics as a closed complex system that inseparably interacts with the external environment in economic, political, civil, market, investment, innovation, socio-cultural, scientific, environmental, and other spaces of a region, a country, the world. "There is a common global marketing practice that in order to achieve effective sales, it is important to comprehensively study the target audience and "press" on its sore points in terms of needs satisfaction. In hostilities, this approach will only be the source of irritation" (Vovchanska & Ivanova, 2022).

Despite the understanding and gradual transition to territorial management based on marketing activity, methodological approaches to the development of territorial marketing tools in communities are not sufficiently scientifically substantiated. In particular, there is no properly established methodology for determining the functional types of territories provided by the respective Law of Ukraine. It is known that territorial marketing tools are created, first of all, based on the peculiarities of a local community, whose functional duties are now extended to operation in conditions of martial law. Therefore, the approaches to understanding the needs of target audiences change, including those emerging afresh – internally displaced persons, relocated enterprises, and social and security aspects. After the war, the people, who migrated to avoid the dangers of war, will return to Ukraine to local communities. They will have experience and understanding of the use of territorial marketing tools in other countries and cities. The need to improve marketing and legislative approaches to territorial marketing and comprehensive systemic integrated development of structural elements of local communities becomes urgent in the management of communities and scientific directions of professional training of employed in territorial marketing. The use of marketing tools to form strategies for the development of territorial issues remains controversial.

Conclusions

Efficient functioning of local communities based on the consolidation after the corresponding reforms, when the community management process includes numerous structural elements of the closed complex system, is impossible without the use of territorial marketing tools. The global marketing environment, which is currently expanding among the countries worldwide in political, economic, market, environmental, and security aspects, has, in one way or another, a significant impact on the activity of local communities and the formation and satisfaction of the needs of target groups, regardless of their internal capacity.

Territorial marketing tools and their qualitative, relative, and quantitative values require professional study and real evaluation in terms of the consumer environment of a local community and external and internal interested parties. Competitiveness of a local community and its parameters and characteristics can be most efficiently and truly determined from the viewpoint of marketing research and evaluation of marketing tools when forming a marketing complex of a local community.

Therefore, the management of local communities based on marketing and the use of efficient marketing tools in the structured complex system of the community can secure sustainable development for future generations.

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MANAGEMENT OF PUBLIC-PRIVATE PARTNERSHIP DEVELOPMENT IN HEALTH CARE INDUSTRY OF UKRAINE

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Abstract
The need to implement public-private partnership projects that guarantee the social, medical, and economic efficiency of public administration in the field of health care was substantiated. The purpose of the study is to determine the ways to improve the organizational aspect of public-private partnership in the field of health care of Ukraine. The informational and methodical base is the data of the State Statistics Service of Ukraine, the Ministry of Health, the Ministry of Economy of Ukraine, orders and reports of the National Health Service of Ukraine. The main ways of improving the organizational aspect of public-private partnership in the field of health care of Ukraine and key organizational measures for the long-term development of the health care system have been determined. The personnel aspect of the implementation of public-private partnership mechanisms in the field of medicine of Ukraine was studied. The need for state stimulation of funds from private partners has been proven. Measures to attract funds from private partners to public-private partnership in the field of health care of Ukraine based on the experience of local authorities of Ukrainian

cities and the experience of state authorities were proposed. The analysis of quantitative indicators of the development of the health care sector, the measures for reforming the state regulation of the work of medical institutions have been identified. The increasing of public-private partnership projects and the implementation of state policy in accordance with the specified directions will allow solving social, resource, investment, technical and technological, managerial, scientific problems of health care functioning.

Keywords: *management, public-private partnership, health care, region, medicine.*

Introduction

Public-private partnership (PPP), which is based on the application of institutional mechanisms, involves organizational and economic relations between participants, due to which a new legal entity or institutional structure is created. It is possible to implement PPP projects that guarantee the social, medical, and economic efficiency of state administration in the field of health care. The implementation of these tasks is reflected in the following legal documents: Economic reforms program for 2010-2014 "Prosperous society, competitive economy, efficient state", Program for the development of investment and innovation activities in Ukraine, Concept for the development of public-private partnership in Ukraine for 2013-2018, Concept for creating a state system for the protection of critical infrastructure, Ukraine's National Security Strategy "Human Security – Country Security", Sustainable Development Strategy "Ukraine – 2020", Sustainable Development Goals of Ukraine for the period up to 2030.

Materials and Methods

The theoretical and practical definition of issues of reform and development of the health care sector, implementation of PPP projects in the field was studied by domestic scientists: Havrychenko D. (Havrychenko, Kozyrieva, Popova, & Serhiienko, 2022), Zakharchenko P. (Zakharchenko, 2017), Kilimnyk I (Kylymnyk, 2018), Melnyk A. (Melnyk, 2017), Parkhomenko-Kutsevil O. (Parkhomenko-Kutsevil, 2022), Rudenko-Sudarieva L. (Rudenko-Sudarieva, 2017) and others. The Ministry of Health of Ukraine conducts systematization of the needs of current medicine, identification of priority and pilot projects in its various directions in order to create real illustrative examples of PPP in health care.

The purpose of the study is to determine the ways to improve the organizational aspect of PPP in the field of health care of Ukraine.

The informational and methodical base is the scientific works of domestic and foreign scientists, laws of Ukraine, resolutions and decisions of the Cabinet of Ministers of Ukraine, data of the State Statistics Service of Ukraine, the Ministry of Health, the Ministries of Economy of Ukraine, orders and reports of the National Health Service of Ukraine.

Results

Nowadays the government has not determined the priority areas of PPP development, their determination is declarative in nature. Therefore, there are unresolved issues in the field of PPP in the health care system of Ukraine. To solve them, it is necessary to clearly define the directions of PPP development in the sphere of health care of Ukraine. It is advisable at the state level to develop and implement an exemplary contract for the provision of medical services, which will provide for types of contracts for the provision of services on a permanent basis and contracts for the provision of one-time services (Kaminska, & Kostiuchenko, 2016).

It is advisable to implement the main ways of improving the organizational aspect of PPP in the field of health care of Ukraine by: developing a strategy with the involvement of PPP schemes specifically for the field of health care; development of a scheme for supervision of projects implemented under PPP schemes; development of standard forms of investment contracts and stipulation of a transparent algorithm for signing them, taking into account the powers of state, regional and local levels of management (services); establishment of an institute in Ukraine, which is engaged in the preparation of PPP projects at the pre-investment stage.

To improve the organizational aspect of the private partnership implementation mechanism within Ukraine, it is necessary to:

– creation of attractive models of relations between state, business and social parties, taking into account the main principles of the Model Law on PPP;

– personalization of responsibility for the preparatory process and the result of the PPP project implementation at the state, regional and local levels;

– intensification of work on the creation of provisions for further PPP planning at local levels;

– development and implementation of specialized training programs at various levels of management aimed at PPP projects.

In addition, for the long-term development of the health care system, it is proposed to implement the following organizational measures:

1. Recommendation of the PPP model for use in Ukraine as a financial mechanism for providing medical care.

2. To improve the effectiveness of the implementation of PPP models, provide recommendations regarding:

– application of services offered in the field of health care as components of general service systems within the scope of health care;

– initiating the implementation of PPP models at the regional and local levels, rather than a vertical system starting from the top;

– use of practical skills from the implementation of PPP models in the non-medical field;

– management of effective model forms of PPP at the administrative level with further improvement of mechanisms and relevant state legal frameworks.

The personnel aspect of the implementation of PPP mechanisms in the field of medicine of Ukraine also needs close attention. Thus, in order to organize PPP and manage risks in the process of implementing PPP, managers and specialists of central and local authorities need not only to acquire and actively apply relevant knowledge, but also to master the technology of rational use of accumulated experience.

Therefore, it is necessary to develop and implement specialized training programs for the preparation and implementation of PPP projects for both managers and specialists at various levels of project management. After all, the risks of PPP projects and the amount of resources involved are large, and the presence of elements of personnel support for PPP in the legislation is possible to the point of misunderstanding the essence of this phenomenon and its degree of responsibility by those responsible for the preparation of public authority projects.

It is necessary to provide in the educational plans of institutions programs focused on the practice of master's training in PPP mechanisms, to introduce programs for improving the qualifications of employees of executive authorities and local self-government bodies on issues of PPP implementation and to introduce certification of project management specialists.

In addition, the improvement of the organizational and economic aspect should include the following measures:

1. Expanding the range of subjects that can participate in health care projects implemented on the basis of PPP, including the international non-governmental organizations.
2. Involvement of international non-governmental organizations in procedures for concluding contracts on the basis of PPP, by passing the public procurement system.
3. Provision of the possibility of long-term budgetary authority of state partners within the framework of the PPP project.
4. Outline the meaning of such a phenomenon as receivable within SPP, and conditional state receivable and conditional local receivable.
5. Introduction of step-in procedures, which provide for the sequence of changes of private partners.
6. The provision of special guarantees and mechanisms of management and response to support stable and uninterrupted preventive assistance to the private partner, which is not provided for by the current legal norms.
7. Development of special requirements for private partners that would take into account their ability to implement the project.
8. Standardization of medical services.
9. Determination of target objects (health care institutions) in order to be able to implement on their basis projects for attracting the resources of a private partner on the basis of PPP.
10. Expanding the range of subjects that can participate in health care system projects implemented on the basis of PPP, including the inclusion of international non-governmental organizations in their number.
11. Development of regulations for monitoring quality indicators of service offered by private partners and mechanisms for rapid

response to cases of impossibility of providing timely, uninterrupted and high-quality service by the private partner of the partnership.

12. Development of a typical structure of risk sharing between the private and public sides of PPP projects.

13. Improvement of the mechanisms of financial provision of health care systems.

The lack of a positive investment climate in our country, the lack of necessary guarantees and loyalty to private partners, which gives them the opportunity to work and guarantees confidence in the inviolability of their own funds, can lead to non-implementation of PPP projects in Ukrainian medicine.

Therefore, great hope for the creation of a favourable investment climate rests on officials who, by virtue of the rights and duties assigned to them by law, are able to change the situation for the better. Without good relations with the countries of the world, in particular the EU, and the capital of their private companies, as well as the capital of private companies registered in Ukraine, it is impossible to implement important PPP projects. Unfortunately, most of these officials today consider it possible to “tighten the nuts” of business representatives, receiving from them as much revenue as possible to the state budget. However, this policy is not effective for PPP (Radio Freedom, 2022).

It is necessary to envisage a system of state stimulation of the funds of private partners, as well as a system of financing these funds. We believe that in order to solve this issue, it is necessary to establish a project for the creation of the State Investment Bank in Ukraine or the Ukrainian Bank for Reconstruction and Development so that the main projects in the field of PPP are financed with its help (Radio freedom, 2022).

A private partner needs long-term stable rules of the game, protection of its own economic calculations, return of paid value added tax.

The Agency for Public-Private Partnership Support (APPPS) today in practice has almost not reached the formation of state policy in this area. It has clearly defined benefits and selected PPP projects. It should carry out mobilization, coordination of the work of state bodies, mobilization of resources and creation of necessary conditions for PPP. For this APPS, the personal patronage of the

President of Ukraine is necessary, as it is difficult for private partners in the Ukrainian business environment.

Most Ukrainian stock platforms collapsed due to “hot capital” that entered Ukraine and quickly left it. Against their background, Ukrainian companies and Ukrainian citizens suffered losses. That is why the necessary objects in the field of health care must be implemented with the involvement of long-term, fundamental, strategic private partners for tens of years, and not private partners who manage the object, and after a few years try to sell it for their own money (Radio Freedom, 2022).

According to the conducted research, as well as on the basis of the experience of local authorities of Ukrainian cities and the experience of state authorities, it is possible to propose the following measures to attract funds from private partners to PPP in the field of health care of Ukraine (Figure 7.9).

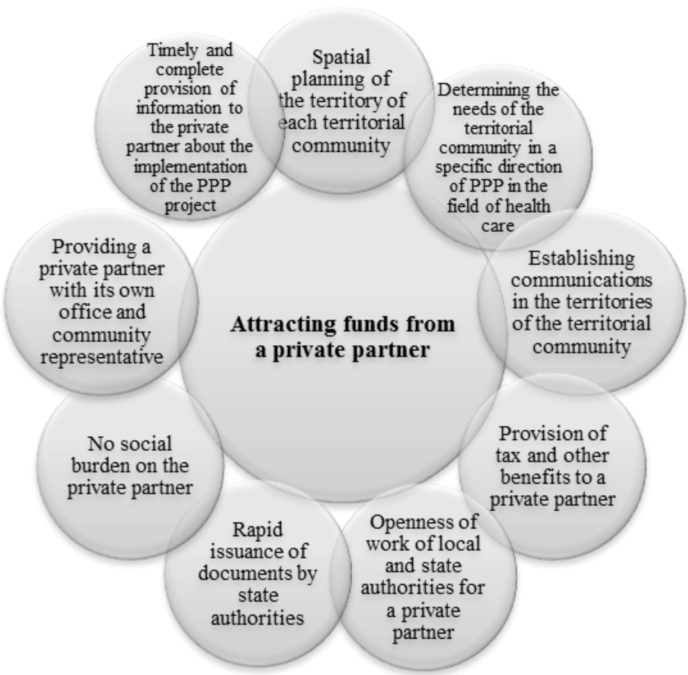

Figure 7.9 Measures to attract private funds for the development of PPP in the field of health care in Ukraine

Local authorities must determine a specific direction in the field of health care, the development of which each individual territorial community needs.

Each territorial community in Ukraine must develop its own scheme of spatial planning of the territory, on which specific land plots and specific PPP projects, which are needed by a separate settlement of this territorial community, must be determined.

It is necessary to bring all the insufficient communications to the defined measures or to fix communication actions, since private partners, in fact, do not wait for the authorities to build a road, bring water supply and drainage to the required area, but choose a plot of land with fixed communications. The private partner's funds allocated to the development of engineering and transport infrastructure must be used to create the infrastructure needed by the private partner for the project.

The private partner should be given benefits by the authorities, for example, regarding the payment of rent, regarding the payment of tax for the development of engineering and transport infrastructure. Thus, the costs of the private partner for the payment of mandatory payments to the state or local budget should be reduced as much as possible.

The local government should be open to the private partner, for example, by broadcasting sessions on the Internet, publishing the budget on the official website of the territorial community, including in English, including representatives of the private partner in the executive committees of local councils, of course, at the request of the private partner.

Issuance of certificates and other documents necessary for the PPP should be faster and more automated, because the private partner will choose the territorial community for the implementation of his own project, where the documents are prepared not in a month, but, for example, in a day.

The private partner should not feel any social burden during the implementation of the PPP project, for example, due to the construction and maintenance of sanatoriums or children's health camps, during the construction and management of a specific hospital.

There are open offices in territorial communities for the service of a private partner. One of the representatives of the community must speak the language of the private partner, contact him and accompany him, at the request of the private partner.

The authorities must maintain constant communication with the private partner; provide him with full information on the implementation of the PPP project, preferably at the location of the private partner or in his office.

At the level of reforming the state regulation of the work of medical institutions, it is necessary to:

– to optimize the number of health care facilities in specific regions, optimizing the level of spending of finances for the provision of medical care at each level and continuing to create hospital districts taking into account the number of the population;

– to change the entire existing system of remuneration of doctors and junior medical personnel with the purpose of increasing the competence of medical personnel and improving the quality of medicine, establishing the minimum remuneration of physicians at least for the average salary in Ukraine and allowances for the level of efficiency of innovative activities and the use of experimental methods for treatment;

– to increase the list of paid medical services that can be provided by state medical institutions, which forms their own funds for carrying out activities in the field of medical innovation and reserves for financing unforeseen situations;

– to determine the areas of evaluation of the effectiveness of funding of medical institutions and the effectiveness of the management of institutions (chief doctors and their deputies);

– establish the responsibility of managers for inefficient use of budget funds.

The government plans to combine the law on concessions and the law on PPPs, which should also significantly expand the opportunities of private partners.

According to the results of the implementation of the proposed directions, it is possible to increase the number of PPP projects implemented in the field of health care. The predicted value by region is shown in Figure 7.10 (Ministry of Economy of Ukraine, 2021, Your Health, 2021).

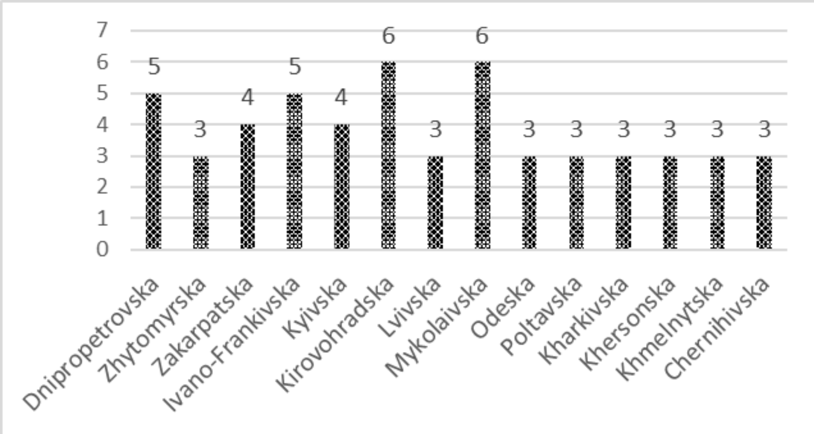

Figure 7.10 The number of PPP contracts, which are planned to be implemented in certain regions of Ukraine by 2024

Instead of low-power, low-load, poorly equipped hospitals, they will be created in other medical facilities (rehabilitation centres for thousands of ATO participants, diagnostic centres, hospitals, intensive care facilities for the treatment of patients with COVID-19, etc.). And the currently best hospitals will be additionally strengthened technically and in terms of personnel, so that every patient can receive quality medical care. In those that have recreational and resort importance (Ivano-Frankivsk, Zakarpattia regions), resort and sanatorium-treatment facilities will be opened according to PPP agreements. In industrial regions (Dnipropetrovsk, Zaporizhzhia regions) the number of institutions for diagnosis and treatment of cancer patients will increase. Lviv and Kyiv oblasts, which were currently the leaders in the pace of implementation of PPP projects in the field of health care, plan to increase their indicators by 6 times by 2024.

In accordance with the increase in the number of implemented contracts regarding PPPs in the field of health care, the number of medical institutions increased in the period until 2024 (Figure 7.11).

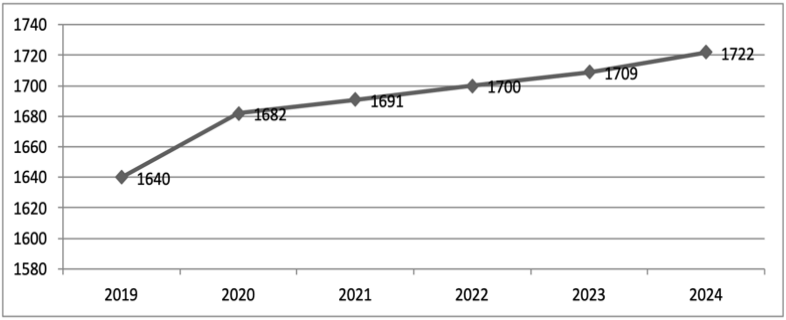

Figure 7.11 Dynamics of real and forecasting growth of medical institutions in Ukraine, 2019-2024

Improving the organization of private partnership and implementing it in practical activities will allow solving a number of problems of the functioning of health care (Legal Newspaper, 2021):

– public – with the help of the state's involvement of the private sector in the joint solution of the problems of affordable, high-quality and timely medical care for the needs of society on the basis of partnership;

– resource – by attracting additional material, financial, labor and informational resources to the medical industry. It is the proper resource provision of health care institutions that allows creating a foundation for quality functioning, minimizing shadow informal payments for medical services, improving the working conditions of doctors and nurses, increasing the income of medical workers, and solving the problem of the shortage of medical personnel and reducing structural unemployment.

– investment – with the help of joint investment to solve strategic problems of health care in order to stimulate the socio-economic growth of the state;

– technical and technological – with the help of the introduction of the latest medical technologies, technical means, which are very necessary for Ukrainian health care;

– managerial – through the influence of business and the direction of joint efforts to use more effective management methods to ensure higher technical and economic performance indicators of the industry;

– scientific – with the help of new directions of development on a national, international and global scale in the conditions of globalization and internationalization of capital.

Discussion

The main benefits for the private partner resulting from medical reform are new PPP opportunities and changes in the PPP financing model, under which the state pays for specific medical services.

According to this financing model, the most important thing for the private partner is to have a clear list of medical services that the patient must pay for, and a list of services that the state can pay for. Only the creation of these lists will give the private partner an understanding of which area of health care it will be significant benefit from the PPP.

It can be observed that now all over the world, and in Ukraine in particular, great attention is paid to the development and improvement of the functioning of medical institutions. In the conditions of an unstable economic situation in the state, for the effective operation of the health care sector, it is necessary to implement and support the development of PPP as the most effective way of cooperation between the state and entrepreneurs. Positive changes and prospects in the field of Ukrainian medicine can be achieved only with the effective cooperation of the Ukrainian government, local authorities, entrepreneurs and patients.

Conclusions

The problems of PPP implementation in the field of health care can be solved with the help of: modernization of tax and transfer policy; increasing the share of productive employment and reducing the level of poverty in the state; strengthening the effectiveness of the level of social protection of the Ukrainian population, technical and technological reorganization of Ukrainian production; formation of safe workplaces in Ukraine and the appropriate level of labor protection.

Among the measures that should help to improve the organizational and economic mechanism of PPP in order to increase the effectiveness of the expenditure part of the budget, the following can be highlighted:

when carrying out budget planning, estimate prospective costs for PPP projects and establish the limit levels of such costs both in medium-term planning and in long-term budget forecasts in accordance with the main managers of budgetary financial resources;

to include in the list of indicators of long-term economic and budget forecasts the indicators of state obligations in relation to PPP projects and the replacement of budget financing with a private investment component during the financial support of PPP projects;

fix in PPP contracts long-term obligations that the budget has to the private investor, together with a number of obligations that private investors and operators have to the state, in order to create a sense of mutual trust regarding the implementation and success of projects in general;

to develop a procedure for registering objects implemented on PPP principles in the registration lists where objects of capital investments and state contracts are entered; such registers can be formed by the State Treasury of Ukraine with the aim of creating a single integrated system of management of the state's financial resources This approach gives the opportunity to ensure accounting and monitoring of the expenditure part of the budget in relation to PPP projects and contracts.

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METHODOLOGICAL LITERACY IN STRENGTHENING OF THE ORGANIZATIONAL AND MANAGEMENT DECISIONS OF THE REGIONS' TRANSFORMATIONS

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Abstract
In the text an attempt has been made to substantiate the inclusion of the process of regionalization in the organizational and managerial development of post-global reality on its inherent methodological principles. The interweaving of the strengthening of the regional industrial course with the objective prerequisites for the conformity of the economic policy of the state with the logic of history is shown. It is noted that emphasizing the specifics of multilevel regional conditions is a prerequisite for maintaining a productive balance in relations between man and society. Some important aspects of management capabilities for the development of regions as a pillar of statehood are outlined.

Keywords: *region, post-globality, management, methodology*.

Introduction

Multilevel and versatile regionalization is one of the brightest and most distinct characteristics of post-globalism, embodying an important feature of the strategic course, and not at all a tribute to the political and economic conjuncture. The creation of sustainable and flexible management systems involves the cultivation, at the same time, of effective regulation of both internal reproduction and external interaction, that is, it requires the establishment of self-government and coordination contours. Moreover, at the levels of not only self-healing, but also overcoming the disability of some communications. The formation of multi-level regions: first of all, mega-, meso-, macro-, micro-levels – has become a prerequisite for the application of effective development models (Chuzhykov, 2008; Kiting, 2003; Omaye, 1999; Shedyakov, 2018).

Materials and Methods

The text is based on materials, firstly, characterizing global transformations, secondly, exploring the potential of organizational and managerial relations in the development of the socio-political climate, and thirdly, devoted to the formation of a methodological tradition in relation to improving the efficiency of managerial use of multi-level regions as a pillar of statehood. The application of these layers occurs in the unity of the concrete-historical and abstract-historical approaches in the study of material, the interweaving of practical and theoretical development.

Results and Discussion

Strengthening the role of regions is a global trend, the use of which is necessary for a sustainable economic recovery. The growth of post-global features, incl. complex regionalization of the world (first of all, on the basis of the basic value-semantic complexes of cultural and civilizational worlds) with the regularity of exchanges of material and spiritual benefits on a global scale, is embodied in a new strategic reality. Post-globalism is most clearly manifested as a quality, firstly, of understanding / perception / ideas and, secondly, mastering (primarily organizational and managerial) the emerging reality within the framework of material and spiritual practices. Accordingly, the most important task of improving organizational and managerial relations is a competent reliance on the resource and methodological bases of the regions.

The study of the “region” can be carried out from the position of geographical, territorial, and organizational-managerial. In turn, organizational and managerial study can be mainly focused on formal administrative or essential organizational processes. The selected aspects directly give the regional sound of the territories the potential of not only sociocultural, political and economic, but also geostrategic significance. At the same time, the activation of regional studies focuses both on finding, ensuring priority and cultivating “points of development” that allow starting a chain reaction of positive transformations, and on maintaining a favourable environment for the desired vector of changes. So, in order to be effective, management must correspond to the characteristics of the social environment, traditions, tasks, and so on. All the more significant are the cultural-civilizational features of the regions, the perception of the proper, priority, desirable, etc. with "fine tuning", immanent post-globality. Moreover, the cultural and civilizational specificity conceals a huge potential for differences that are significant for the results of life activities.

Strengthening the regional industrial course is an important condition for the conformity of economic policy with the logic of history (Butko, 2006; Evdokimova, 2011; Nikolayev, 2011; Shedyakov, 2019; Shedyakov, 2017). Regional clusters are potential sources of development (both individual areas and industrial cycles, and the level of public consent). Under the veil of previous trends and old facts, the structuring (though not yet shaping) of the already matured new paradigm is dynamically taking place: not just the prerequisites for the future, but the level of realization of opportunities and threats in the new socio-technological paradigm are emerging. As you know, at a social crossroads, the choice becomes more acute: whether to act in accordance with the logic of the ruling groups or in the interests of the peoples be guided by motives of egocentrism or much deeper goals.

At the same time, the era of post-globalism and artificial intelligence has firmly linked competitiveness with regional isolation, thereby strengthening the impact of the value-semantic complexes of cultural and civilizational worlds and re-actualizing the elements of protectionism. At the same time, selective interregional contacts are growing stronger, interregional cooperation is developing. Today knowledge is becoming the defining element of socially necessary labour; the main source of value is the creative, primarily intellectual, potential, and not the psychophysical efforts of the employee; the priority of development strategies is the production of knowledge and its effective application; the added value is distributed taking into account the costs of the producer, the backbone relations of society are being democratized, social and individual consumption is being transformed, the foundations of classical forms of alienation are being eliminated, a new type of production is emerging, the economy is becoming socially global, the type of the subject, object and tools of labour is changing in the socio-economic and institutional structures of social reproduction.

Regionalization is a natural element of the consistent greening of life, incl. – ensuring access to public potential. Meanwhile, the domination of illusory-alienated forms of universality not only hinders development, but is also destructive for material and spiritual culture. In turn, the late capitalist model in practice, quasi-liberalism in the spiritual sphere regularly gives rise to totalitarianism and fascism, overcoming which becomes the task of the liberation forces. Thus, the further pro-social deployment of the essential forces of each focuses on a set of measures for the denazification of the ecumene, and regionalization provides the most organic forms of social consolidation of creative forces. Future-diagnosis convincingly shows: of course, you can try to follow this or that priority. For example, choose to integrate into foreign structures or, on the contrary, uphold real sovereignty. But these paths require different complexes of structures and functions; they are oriented towards completely different approaches in state building and industrial policy, selection and alignment of forces and means. The time of forced inter-paradigm transformations dramatically expands the window of opportunity, the use of which affects not only the current state of affairs, but also lays down long-term trends, bringing subsequent transformations into one or another orbit. The essence of the ongoing processes is associated with the confrontation of various options for further changes, and not just the withering away of past strategies and the birth of future ones. The transitional period is the time of strategic manoeuvring. The essence of the processes that fill the transition period is associated with the confrontation of various options for further changes, and not just the withering away of past strategies and the birth of future ones. The importance of 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. In particular, if earlier organizational and managerial art was manifested in the most complete development of the "most advanced" model for its time, now the task is to cultivate "specialness" as the basis for the competition of various models.

Today, without the complex "shock absorbers" provided by deep regionalization and the consolidation of development forces in clusters, with radical differences in approaches in practice, instead of geostrategic optimization of power structures, sometimes there is a tug-of-war between groups, chaotic liberalization is implemented and a “hands-free mode” is opened for lobbying alliances; Having not found a taste for freedom, society fully tastes the bitterness of the arbitrariness of its restrictions, selective interpretations and a mixture of declarations and totalitarian actions. The inability to competently ensure the balance of mutual rights and obligations of the citizen and the state becomes a powerful factor in the degeneration of regionalism into separatism. This can amplify the potential for unresolved issues. At the same time, behind the fragility of the verge of regionalism and separatism lies both the political and legal contradiction of the implementation of the approaches, on the one hand, of the people’s liberation movement, on the other hand, the inviolability of borders, and the growing sharpening of the perception of the rights and freedoms of an individual, when brutally brutal suppression protest movements and the fight against dissent is already met with the same attitude from the protesters, and the use (of course, outside the norms of international humanitarian law) of animals, firearms, tear gas, flash bang grenades and water cannons with ice water and pesticides, shots over their heads against unarmed refugees from the destroyed regions receives the appropriate assessment of progressive humanity. At the same time, they often try to “pull the blanket over themselves”, including by preparing, implementing and supporting coups that are beneficial to themselves. Migration crises are further exacerbated by interventions in countries – regional leaders, previously attractive to the population of other countries. Freak diplomacy with flows of irresistible bragging and irresponsible sophistry using the methods of total propaganda tries both to obscure the catastrophic nature of its failures with the image of the enemy, and to whitewash the “sons of bitches”, covering up the processes of real aggression and agony with verbal tinsel. At the same time, the cataclysms of the transition period exacerbate the previous contradictions, and the lack of an adequate quality of education, understanding and forecasting, coupled with egocentrism, bureaucratization and corruption, do not allow either to see long- and medium-term prospects, or to effectively respond to trends, or at least perceive inconvenient news. Instead, a common manifestation of strategic confusion is ignoring undesirable reality in favour of maintaining pleasant illusions by all means and at the same time sometimes uncertainty and chaos.

The quality of development clusters can be acquired by regions upon integration based on the awareness of the unity of interests, tasks, traditions and basic value-sense complexes of opportunities and efforts of business, government and society in the network / network-centric integrity of formal and informal interactions of partnership / cooperation and competition that creates trust, creating a new the quality of cumulative synergy in a single information space. When realizing a regional geostrategy, it is necessary to take into account how the pressure of sociocultural factors of managerial and regulatory influence increases and the economic dynamics themselves include a plurality of actors and combine controlled, self-managed and unmanaged processes. Thus, socio-cultural factors become powerful stimulators for the development of the region. The cumulative effect that supports the stability of life and development of the region in an unstable environment arises when public-private partnerships unite the interests of the population at different levels.

Realization of sustainable development in deliberately unstable conditions requires not only flexibility of organization, planning and stimulation, but also the use of a wide range of regional differences. Post-globalization, on the one hand, transforms the measure of the relationship between socialization and individualization, on the other hand, multiplies specific and diverse approaches and models. In particular, the concentration on the maximization of freed creative activity makes the development of regional forms of its implementation inevitable. Consistent decentralization and comprehensive regionalization is the way to restore the quality of governance. It is pointless to go through the external canon, a complex of solutions is needed that allow combining post-crisis and development logics in specific conditions. Thus, the universalism of approaches remains in the past, the movement towards the logic of freedom is a rejection of the unity of any basis of development. At the same time, changes are taking place not only in individual socio-political institutions, but also in the entire cultural environment, relations, and structures. Moreover, the more specific the solution becomes, the richer the arsenal of possibilities it opens up. Because the more grounds there are in the region and society, the more complex the internal structure is, the more stable it is in periods of relative stability and forced changes, the more capable it is of development. There is an idea of a new regionalism as a product of the already global stage of international relations, when the tasks of internal development are subordinated to the struggle for external markets (including labour force, raw materials, technologies, etc.).

Participation in the formation of the knowledge economy today is the need to preserve one's sociocultural identity, the independence of one's cultural and civilizational world. Accordingly, the idea of effective management, including the strategic level, is also changing. So, when trying to command management, emerging social relations multiply, denying the effectiveness of numerous incarnations of unambiguous models. The unambiguity of causal relationships (the "tree" model) has long grown into the "bush" model (characterizing sociality that has grown to multi-factoriality) and the "rhizome" of the stochastic state of sociality, where the most bizarre combinations of the logic of being are woven. Any branch can become a root, a node of a new development. However, the logic of change, like complete knowledge, is always late, and is no longer necessary for the civilization that has developed it. And the point is not only that "the owl of Athena is usually delayed", but in the very fact of self-detection of targets, mainly after they have been exhausted. In the process itself, they are implicit. A living process is usually outside of goals. The goal is revealed in the stopped, dead. And at the same time, only an undeveloped object carries its methodology separately, while more perfect structures include the methodology within themselves. By a well-known analogy, simple organism carries stem separately (in the form of a shell), more complex organisms include it. The same is true of the logical method in strategic management: either it is no longer needed, or it is imperfect. And in any case, it is not applicable directly to the raw empirical material, and requires special theoretical concepts. It is more useful in developing a way of understanding facts. When a method is applied as something obviously different from the material (object) – it is still undeveloped, powerless. When trying to single out a method in its pure form, researchers get something different, but its essence is captured only together with the development of the subject immanent to it. So as soon as science, by theoretical criticism, is brought to a state where it can be represented logically, the material begins to take on a life of its own without the need for a special method, and the methodology dies in the subject. In general, the more perfect the work, the more inconspicuous the method. When methodology reaches its peak, it dies, loses its separate existence outside of theory. At the same time, due to the existence of a huge variety of quantitative arrays, the inconsistency of dynamics, the disguise of the main ones in the present and the trends that determine the future with the facts of a dying reality, the operation of statistical references turns out to be dependent on the chosen methodology, and the formal legal field, always lagging, only fixes the balance of interests in unfolding contradictions. At the same time, the previously hidden tends to emerge to the surface of political, economic and socio-cultural relations, opening up to research and transformation.

That same era objectively requires the immanence of the method, its presence in the very content of the subject of social science, so that the method develops in accordance with the content, while its application is multilevel and non-hierarchical. Moreover, the triumph of information as such is not ahead, but behind: the movement from the exchange of goods through the exchange of information to the exchange of abilities has already revealed their foundation behind the information means of expression – the diversity of human creative abilities. A "reversal of the method" is being implemented: its result is fixed in the forms of achieving the unity of the subject and method, which have as their content criticism, which is the essence of the theoretical attitude to the facts of historical development. Thus, theoretical criticism is just the original form of resolving the contradiction between the subject and the method with the predominance of the method. It is not identical to the moral and practical attitude to reality, since it is not capable of subtractive (including) criticism. Moreover, the readiness to search for one's own outside the template set by the external technostructure becomes an additional trump card in development and confrontation.

The methodology of strategic impacts is significantly transformed with the change in society and its components. However, the obsolescence in these conditions of the previous organizational schemes and the need to abandon prejudices does not at all mean, of course, the rejection of project activities as such, including the optimization of the information impact on the population. At the same time, when evaluating the possibilities of applying the methodology, one always has to take into account the mobility of public expectations. However, social roles are now often formed in processes where there is a wide range of non-routine tasks and there is no constancy of procedures. The study of combinations of the virtual environment of population groups makes it possible to present complex real processes in a concise, symbolic (and at the same time also intuitively perceived) form so that their parameters are also available for visual analysis. When creating a strategy, it is important to enrich the research movement towards understanding the process with knowledge of the possibilities of complex practical and theoretical consideration of the features of the moment. That is, from the point of view of methodology, the involvement in the analysis of the widest possible range of phenomena with the determination of their correct relationship, specificity and functions of each of them involves the ascent from the abstract to the concrete. And it is carried out not with an external addition to its subsequent stage of reverse movement (from the concrete to the abstract), but when the features of the latter are included in each of its moments. At the same time, the development of scientific theory and practice are closely interrelated. The additional relevance of the analysis of the possibilities of the potential of science is connected both with the strengthening of the objective demand of practice (with the awareness of the flow of continuous organizational discoveries), and with the specifics of the methodology, which, on the one hand, tries to include fundamentally heterogeneous scientific approaches, on the other hand, – should preserve the difference between rational ways of building strategies (and, in particular, informational influences within its framework) from “blurring the eyes” by appealing to unknowable practices, superhuman influences and so on.

At the same time, at its core, the question is about the concept and acceptance of a methodology model, as well as assessing the range of its effectiveness. It is scientific methodology that emphasizes the counter-productivity of obtaining knowledge about a subject when studying its different aspects in isolation from each other and creating a single version of the idea of an object (subject) based on the knowledge obtained separately in the process of theoretical synthesis after systematization and comprehension by scientists.

Accordingly, the traditional approach of scientific research and the approach to processing and organizing the knowledge gained should be changed. So, for example, unlike classical and non-classical science, which sharply separated in knowledge the mind and intuition, narrowly rational and irrational, theoretical and empirical, pragmatic and “futile speculation”, scientific and every day, now science integrates methods, acquiring a non-linear character, stochasticity, poor predictability, paradoxicality, holographicity. This characteristic of the methodology of knowledge concerns not only the ontological and cognitive aspects of knowledge, but also the axiological, praxeological and sociocultural aspects, which serve as a fundamental differentiation of scientific knowledge. At the same time, in a highly volatile environment, it is necessary to especially appreciate not so much ready-to-use dogmas as the starting points for development, the methodology for further improvement. Truth is not only the result of the search; it is the search itself, its process.

The quality of clusters can be found by regions during integration on the basis of awareness that creates trust in the unity of interests, tasks, traditions and basic value-semantic complexes of opportunities and efforts of business, government and society in the network / network-centric integrity of institutionalized and non-institutionalized, formal and informal interactions of partnership / cooperation and competition, which creates a new quality of cumulative synergy in a single information space. When implementing regional geostrategy, it is necessary to take into account how postmodern trends increase the pressure of socio-cultural factors of managerial and regulatory influence, and the economic dynamics themselves include a plurality of actors and combine managed, self-managed and unmanaged processes. Thus, sociocultural factors become powerful stimulators of the region’s development. The cumulative effect of synergy, which supports the stability of life and development of the region in an unstable environment, arises when the public-private partnership (first of all, due to the mechanisms of the public-private partnership) unites the interests of the population at different levels. This is how the opportunity to minimize risks and localize damage when using its resource-methodological bases is formed.

At the same time, increasing the role of regions can not only support, but also become a force for promoting the collapse of the state; it will serve both creation and destruction. Emphasizing the features of regional conditions of life is a prerequisite for flexible maintenance of balance in human-social relations (Kazban, 1997; Khablak, 1994; Kleva, 1997; Logachova, 1997; Shedyakov, 2022; Shedyakov, 2021; Shedyakov, 2020). Solving the problems of stability in an unstable environment significantly affects the understanding of the resource-methodological bases of ensuring efficiency, encouraging the integration of managed, self-managed and unmanaged structures in the management compositions of the regional geostrategy, the use of non-rational attitudes and unconscious motives of behaviour. The very existence of the environment of quasi-democratic socio-political education, on the one hand, allows their elites to hide content completely different from them behind external forms, but, on the other hand, makes them vulnerable to influences under the slogans of the realization of declared values. In this context, the quality of geostrategic positioning of regional systems turns out to be extremely relevant: preserving one’s own identity – or turning it into a nutrient medium for external governance and the material of a quasi-Western society.

Times of compressed transformations, forced changes include the implementation of radical, paradigmatic leaps. Failed to form "points of growth" can turn into reservations of archaic social systems and zones of mediated conflicts. The era is coming, which includes in its definitions the characteristics of “cognition”, “information”, etc., which will organically require activities to obtain, process, and disseminate knowledge in order to set it on the path of stable development. It is quite natural that, for example, development clusters (the core of which in the next era has a scientific, educational and industrial nature) have proven themselves as effective organizational and management forms of maintaining the balance of strategies, tactics and operations.

Conclusions

The time of drastic changes involves the unfolding of creative activity. The vector of transformations forms different priorities during creation: both in the divine likeness during the production/creation of meanings, and in the animal likeness during biological reproduction/breeding. At the same time, facing the insurmountable obstacle of the threat to all living things from outdated strategies, humanity is forced, and has everything necessary, to move to an emphasis on intelligent ecological natural technologies with the priority of respect for the environment and humanization of society. Accordingly, the issue of socially responsible behaviour acquires fundamental importance. At the same time, acculturation / socialization forms two alternative strategies: fighting either for one's civilization or for oneself (with attachment to values and meanings being the most successful in this period of history).

The organizational and managerial embodiment of the macro- and micro-levels of socio-economic transformations largely determines the regional measure of the merits and demerits of the era. As you know, the potential power of the state is not always realized in practice. Management skill becomes extremely important: professional competence, morality, methodological literacy and the ability to adapt it to specific conditions – as well as the direction of its use, the tree of real priorities of the ruling group. It is the provision of adequate to the Challenges of history, methodologically rich strategic, tactical and operational regulation, the participation of everyone in socially useful historical creativity in work and management, thereby expanding the subjectivity of transformations, which is a decisive factor in history.

Thus, the realization of "reflexive modernization" projects today requires qualitatively new models of participation in global competition, the effective possession of which requires regions and cities to use the creative potential of people and the corresponding transformations of the regulatory system, in particular, through the formation of clusters. Moreover, a variety of paradigms for the implementation of managerial compositions can be effective for regional economic systems. Accordingly, the effectiveness of technologies for stimulating desired processes is increasing, based both on identifying development points and clusters, and on the formation of general environmental dynamics, which involve the ability not to direct administration, but approaches that help to interest and captivate. In turn, the consolidation of society on a productive basis implies a "sustainable instability" in balancing the interests of various groups of the population, primarily creators and workers (now increasingly concentrating on the creation of a spiritual and intellectual product). At the same time, on the one hand, instead of the strategies of “aving on variable capital”, the objective grounds for better satisfaction of primary needs and the transition to the motivating value of more complex interests are strengthened, on the other hand, the importance of regional mechanisms and instruments is increasing: mediation is able to significantly affect qualitative and quantitative result of (re)distribution in self-government and external coordination circuits.

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PROBLEMS OF MANAGING SUSTAINABLE DEVELOPMENT OF UNITED TERRITORIAL COMMUNITIES IN UKRAINE

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Abstract
In this article is determined that the basis for the development of local self-government is the focus of the public administration system on decentralization and sustainable development of regions as independent social-ecological and economic systems. Following the tasks, principles, and resource potential of communities, the main problems of managing the sustainable development of United Territorial Communities (UTCs) are the economic decline of the national economy, high unemployment and low income. As well as social inequality and population ageing, poor infrastructure, lack of water resources, water and air pollution, uncivilized methods of solid waste disposal, soil degradation, limited access to renewable energy sources, poor entrepreneurial, innovation and investment activity. It defines the management of local governments to create appropriate conditions for increasing competitiveness, ensuring sustainable development on a modern technological basis, high productivity, employment and improving the well-being of community residents.

Keywords: *sustainable development, decentralization, united territorial communities, effectiveness, management of sustainable development, principles of sustainable development, balanced development, sustainable development strategy, sustainable development goals.*

Introduction

Ukraine, as a European state, has chosen a sustainable development model, according to which social-economic development is considered both at the level of the state, regions and united territorial communities. This model aims at a harmonious combination of economic growth with minimal environmental impact and improvement of citizens' well-being and quality of life. However, many issues of sustainable development of UTCs remain unresolved.

The fundamental issue in this context is the effectiveness of management at the level of the local community, which refers to how the revenues of the territorial community budget and the structure of its expenditures ensure the harmonization of economic, social, and environmental aspects of the UTC development.

Therefore, it is important to analyze the most significant problems in the system of managing the development of territorial communities and find the most effective ways to solve them based on optimal use of local resources, optimization of the structure of the regional economy, and financial self-sufficiency.

At the present stage, the role of territorial communities is growing, as they are becoming the basis for ensuring Ukraine's sustainable development. Society is developing a new approach to solving social problems, strengthening state and regional strategic development planning, and increasing the role of the community and other stakeholders in decision-making to harmonize the interests of different social groups.

The balanced development of territorial communities should focused on ensuring conditions that will allow each community in the country to have the necessary and sufficient resources to ensure decent living conditions for the population.

It is necessary to consider the issues of comprehensive development and competitiveness of the economy, increase of social-economic development and a high level of satisfaction of the needs of the present generation without creating threats to the fullest satisfaction of the needs of future generations.

Therefore, balanced development are economic development based on an effective market mechanism, natural and environmental sustainability and greening of public consciousness, social development based on equity, interregional and international cooperation aimed at achieving sustainable development goals. Realizing the active role of UTCs in ensuring sustainable development should become a strategic direction of the State's Regional Policy.

Materials and Methods

Scientific substantiation and increasing the effectiveness of territorial community management, coordination of efficiency and social justice criteria, interaction between communities require deep social, ecological and economic research taking into account all factors of sustainable development. An assessment of the sustainable development of territorial communities of the country is necessary to determine internal and external advantages and threats, which will allow developing measures to prevent their negative impact in order to identify development scenarios and form an optimal strategy for the development of united territorial communities.

Ukrainian scientists study theoretical and applied aspects of sustainable development, in particular: E. Mamontova, O. Radchenko, M. Havrylov, V. Pohorilko, V. Shapoval, M. Butko, Z. Buryk, O. Oliynik, A. Balashov, M. Bryl, O. Vrublevsky, O. Danchev, A. Hrechko, and others.

The works of E. Mamontova, O. Radchenko, M. Havrilov, V. Pohorilka, O. Prieshkina, Ya. Chistokolyany, V. Shapoval, and A. Yanchuk are devoted to the study of democratic practices of public administration at the level of territorial communities.

It should be emphasized there are a number of unresolved issues of UTC development based on sustainable development that need to be researched and addressed in the current, extremely difficult economic, political, and social conditions.

Despite the wide range of sustainable development issues studied (essence, mechanism, assessment methods, state regulation, etc.), and given the changes in the social-economic situation in the country in general and at the regional level in particular, there is a need to continue researching the components of sustainable development and their implementation at the UTC level.

This is primarily due to the need to increase the capacity of UTCs, promote social-economic and environmental development, and identify effective tools for management influence at the level of territorial communities. It is necessary to take into account the local natural resource potential and the best international experience, search for effective mechanisms of interaction between state authorities and local self-government bodies in order to ensure harmony of all components of sustainable.

The purpose of the study is to identify the main problems in managing the sustainable development of UTCs and to substantiate possible ways to eliminate them.

The theoretical basis of the study is a systematic approach to analyzing the problems of sustainable development of the region and finding ways to improve its management. It is necessary to emphasize the ability of the systemic approach to be a means of understanding complex processes and objects with a large number of elements and interdependence of internal and external relations.

The methodological basis of the study is the dialectical method of cognition of the management of sustainable development of territorial communities, the provisions of economic theory; analysis and synthesis, generalization, induction and deduction to determine the theoretical foundations for ensuring the effectiveness of sustainable development management.

Results and Discussion

The role of territorial communities, which are becoming the basis for ensuring Ukraine's sustainable development, is steadily increasing. Sustainable development defines as development aimed at meeting the needs of the present while preserving the resources to meet the needs of future generations.

According to B. Paton, the foundations of the national paradigm and sustainable development strategy are influenced by global trends in the harmonious development of society and its survival (Paton, 2012).

The theory of sustainable development has deep roots. It has evolved and reflected in the most important international documents and declarations. They identify priority areas for future global progress based on a sustainable balance between the components of the global ecological, social and economic system. The term "sustainable development" interpreted as improving the quality of life of people while maintaining the sustainability of supporting ecosystems (Raszkowski & Bartniczak, 2019).

The main Goals of Sustainable Development of Ukraine until 2030 were defined taking into account the peculiarities of social-economic development of Ukraine (Decree of the President…, 2019). Its sustainable development involves the realization of national interests and compliance with international obligations in this area, among other things:

- Eliminating contradictions in the economic, social and environmental spheres;
- Modernization in the field of economic activity and transition to the principles of the "green economy";
- Building a peaceful and secure, socially oriented society with an appropriate system of governance and inclusive institutions;
- Ensuring cooperation between authorities at all levels, education, science, business, and public organizations on a partnership basis;
- Full employment of the population;
- High level of science, education and healthcare;
- Preserving the environment in a condition that guarantees a decent quality of life for citizens today and in the future;
- Development of decentralization and implementation of regional policy on the basis of a harmonious combination of national and regional interests;
- Preservation of national cultural values and traditions.

Thus, Ukraine's Sustainable Development involves addressing issues of health, education, employment, social justice, and a clean environment in the social sphere; in the economic sphere, it means a "green economy", the introduction of energy and resource-saving and innovative technologies; and in the environmental sphere, it means preventing climate change and preserving ecosystems on land and water.

The Concept of Sustainable Development in Ukraine focuses on the development of self-governance of principles, the direction of the public administration system towards decentralization and sustainable development of regions as independent social-ecological and economic systems.

In accordance with the adopted 2030 Agenda for Sustainable

Development, the concept of sustainable development includes partnership and peace in addition to the main three components. Therefore, in the process of developing the state policy, it is necessary to proceed from possible options for decision-making in order to ensure partnerships between all participants and to introduce effective mechanisms for the implementation of all identified components (Law of Ukraine…, 2019).

Decentralization of power, on the one hand, contributed to the creation of new conditions for the development of local self-government and its effectiveness, and, on the other hand, challenged territorial communities to implement effective planning for their future development, identify opportunities for economic growth, improve social standards of living, develop infrastructure, and improve the quality of administrative services. All of this requires the attraction of significant financial resources. For most UTCs, their own sources in the form of tax revenues are not enough. Therefore, local governments have to work on finding alternative sources of resources: attracting extra-budgetary funds, fundraising, etc.

The advancement of concept of sustainable development of UTCs bases on a deep SWOT analysis, assessment of natural resource potential, justification of the mission and goals of UTC development, setting tasks, attracting investment and innovation, encouraging and involving citizens in the implementation of the tasks (Khirivskyi et al., 2019). In other words, a prerequisite for ensuring sustainable community development and its capacity is a formed understanding of the future with a high level of quality and comfort of life, equal access to services, and stable economic growth.

In their enlargement in accordance with the principles of globalization, UTCs should focus on regional peculiarities of sustainable development. This requires the priority involvement of all our own factors (capital, labor, natural, intellectual) to ensure economic growth.

At the same time, regions and territorial communities also characterized by common features of sustainable development. They include: the interdependence of economic, social development and environmental situation; the relationship between production and technological processes and the level of consumption; the conditionality of sustainable development of UTCs by natural resource potential, production capacities, the system of economic and economic relations, the level of availability and qualification of labor resources; the impact of state economic policy (Hrechko, 2018).

The certain mechanism to realize the sustainable development of UTCs needs to ensure the most efficient use of local resources and to ensure that the interests of the community aligned with those of the state. The effectiveness of the mechanism for implementing the Region's Sustainable Development Strategy is determined by all possible areas of UTC development – legal, organizational, financial, economic, innovation and information, environmental, social (Vatchenko & Ilchenko, 2011).

The main principles on which the concept of sustainable development of territorial communities should base include (Sharov et al., 2012):

- Strategic and manageable community development to ensure that the needs of the present are met and opportunities are created to meet them in the future;
- Effective use of the community's natural resource potential due to modern technologies, innovative production and the availability of alternative sources of resources;
- Social justice in the distribution and consumption of benefits, namely: preventing the irrational use of resources, achieving a balance between resource consumption and environmental protection, and introducing energy-saving and renewable resources;
- Integration of innovative, strategic and project activities at the level of the territorial community to improve the efficiency and effectiveness of management in ensuring its sustainable development.

In modern conditions, when the autonomy of UTCs is growing, and thus their ability to independently address key issues of social-economic development, communities are transforming from objects to subjects of governance. This situation creates favorable conditions for them to become leaders of change, responsible for planning their sustainable development, local economic growth, spatial planning, and environmental protection in their respective territories.

In the process of managing the sustainable development of UTCs, local authorities face a number of challenges, including the economic downturn of the national economy, high unemployment and low incomes, social inequality, and population aging, poor infrastructure, lack of water resources, water and air pollution, uncivilized methods of solid waste disposal, soil degradation, limited access to renewable energy sources, etc.

We consider the following to be the main problems in managing the sustainable development of UTCs:

- Deterioration of the age structure of the UTC population, caused by increased migration outflows outside the communities, demographic aging of residents of most settlements, general mobilization of Ukrainian citizens for military service and the human losses incurred by the defenders of the state, and the transfer of a number of businesses and their employees to safer regions of the country.
- Insufficient level of entrepreneurial activity, low level of public-private partnerships, investment activity, and introduction of innovations in production. It causes by the peculiarities of pricing, the influence of monopolists, and limited access to modern alternative energy sources. As well as due to lack of political and economic stability caused by the war in Ukraine, a decrease in the level of citizens' solvency due to rising unemployment and lower incomes, problems of agricultural development. Moreover, because of ineffective mechanisms of cooperation between business and government, in particular in terms of regulatory policy; lack of investment; contradictory legal acts regulating the activities of business entities; excessive tax pressure and a burdensome reporting system.
- Increased environmental problems, in particular, both due to the disruption of environmental protection measures and the deliberate construction of artificial (protective) structures, the presence of illegal landfills, low levels of involvement of residents in organized waste collection; greening of the territory; pollution and limited flow of rivers.
- Problems in the development of social infrastructure: insufficient provision of schools with modern educational infrastructure, remoteness of educational institutions, involvement of children with disabilities and special needs in education. Financial insolvency of rural budgets affects the dynamics of improving the quality of people's living conditions, development of socially

necessary projects; unsatisfactory material and technical base of medical institutions; insufficient level of disease prevention; lack of paved roads to remote settlements of the community, lack of financial and credit infrastructure institutions.

The potential for sustainability of UTCs' prospective development conditioned by security imperatives. We are talking about challenges and threats to economic and macroeconomic security, financial, information, investment and innovation, production, demographic, social, environmental, etc. Moreover, in times of war, many data is "classified".

Based on the trends, we can say that in these conditions, local governments need to restore the sustainability of UTC development. It is necessary not only to organize the work of territorial defense headquarters as efficiently as possible, but also to collect record and process information on the receipt of various types of assistance and the need types of services.

The effective implementation of UTC management in the context of the Global Sustainable Development Goals by 2030 manifests in a qualitative improvement in the safety and comfort of the population. It allows countries to be successful on a global scale and is one of the main indicators in the Global Competitiveness Index.

The effect of sustainable development of UTCs defines the summation of the useful result of the factors involved in obtaining it in the economic, social and environmental spheres.

The priorities of the most of the UTCs in Ukraine are the development of agricultural production. This is exactly what can be seen through increased investment in agricultural processing, due to the growing demand for food products on the world market; development of small and medium-sized businesses based on balanced regulatory decisions of local authorities, infrastructure development, and increased public initiative; and introduction of alternative energy sources to improve energy security of communities.

The basis of modern local governance should be innovative approaches to management capable of implementing the goals of sustainable development of UTCs. This involves:

- All management decisions should be aimed at ensuring the main strategic goal – improving the quality of life of the population of the territorial community;

- Apply methods of adaptive strategic planning that take into account local development patterns;
- Develop both traditional industries of the territories and innovative technologies;
- Involve the public in decision-making on sustainable development of the territorial community, actively use public-private partnerships and cooperation with scientific institutions;
- Implement priority national projects at the local level, taking into account, on the one hand, local conditions and peculiarities, and, on the other hand, national goals and priorities;
- Increase the efficiency of inter-budgetary relations in order to finance both management functions in the community and its social-economic development.

The management activities of local governments should aim at creating the right conditions for increasing competitiveness, ensuring sustainable development on a modern technological basis, high production productivity, employment and improvement of the welfare of community residents.

Conclusions

Based on the researches, the concept of sustainable development is becoming increasingly relevant in the face of modern challenges. It has become a fundamental paradigm for the development of the ecological, social and economic system at the global, national and regional levels.

The Sustainable Development Goals are the framework that ensures a balance between solving social-economic problems and preserving the environment. That is why the concept of sustainable development is a key guideline for economic policy at all levels and for the governance system, including at the level of UTCs.

Given the results of the study, it can be stated that a successful UTC is a community in which local sources of Budget revenues, infrastructure and human resources are sufficient for local governments to address local issues of local importance, as provided for by law, in the interests of community residents.

One of the strategic tasks of an UTC is to ensure innovative development of the territorial community in compliance with the

National Sustainable Development Goals.

In general, the effective implementation of UTC management in the context of the implementation of the Sustainable Development Goals by 2030 is manifested in a qualitative improvement in the safety and comfort of life of the population not only in their community, but also contributes to the country's overall success and competitiveness.

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REGARDING THE APPLICATION OF COOPERATIVE APPROACHES TO SMALL FARMS IN RURAL AREAS OF BULGARIA [10]

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Abstract

The paper tries to justify the need for implementation of cooperative and integrative approaches in the activity of small and semi-market farms in rural areas. For this purpose, an attempt has been made to define, distinguish and characterize the semi-market farms, their differences and homogeneity, which give grounds for the application of various measures for cooperation and integration on a regional basis. The role and the future viability of small farms remains an important issue for rural areas in Europe. The debate about SF and SSF is hindered by the lack of universally accepted definitions of subsistence and semi-subsistence farming. This is important for the policy, as the number of holdings, which are classified as semi-subsistence farms (SSF) and subsistence farms (SF), and thus the share of the managed land and the labour force they use, depend on many of the accepted definitions. The definitions, used so far, can be divided into several categories: physical size, economic size and market orientation.

Keywords: *cooperative approaches, rural areas, subsistence farms, semi-market farm, rural environment.*

Introduction

Semi-subsistence and small farms are the main structures, to which we can refer such an "agricultural presence" and which have a crucial role in the viability and attractiveness of rural areas in Europe.

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Characteristic of these is that they are usually located in the most vulnerable and disadvantaged regions. These holdings are poorly integrated with the market and this causes discussions for their competitiveness. On the other hand, they supply environmental goods, maintain local rural communities by providing important social, cultural and environmental services (public goods).

This duality in the image of semi-subsistence farms (SSF) and subsistence farms (SF) reflects the great division between policies, affecting the efficiency of production as a decisive factor and affecting the role of agriculture for the provision of public goods in the rural areas. Therefore, the condition of small farms, no matter whether they are semi-subsistence farms or not and the impact of policies, programmes, and structural changes on their survival or extinction are of great importance to rural areas. Questions of their existence and their development are extremely important to local communities, cultural heritage, and agri-environment.

That is why the application of the cooperative model in carrying out a number of complementary or supporting activities in small and semi-market farms is of fundamental importance for their survival and development (Atanassova T., 2002; 2003). The participation of producer organizations, especially when they bring together a large percentage of producers in a given region, will significantly improve their position in the price negotiation process. Producer organizations and producer groups generally involve economically and legally independent producers who autonomously make decisions on organizing and carrying out their production. They can provide the producer organization (PO) or the producer group (PG) all or part of the produced output, for joint realization, by virtue of the organizational act and the internal rules of the company. Organizations and groups of producers can be created on a marketing basis, their main role being to collect the production of their members and sell it on the market. A number of research results emphasize the role of cooperation, cooperation and integration of farms in rural areas. Similar proposals find a place in the publications of Boevsky (1993), Atanassova (2002, 2003); Atanassova, Kostadinova, Petrova (2005); Atanassova, Gaidardzhieva, Kostadinova (1999, 2009); Ivanova, Nikolov (2018). Contemporary conditions require studies to be oriented towards current societal challenges in Bulgaria.

When applying such approaches, it is necessary to know the criteria for defining and classifying farms into market, semi-market and natural farms, as well as to apply a regional approach to managing the integration processes. The classification of farms into clear categories will enable the differentiation of cooperative processes and the construction of different cooperative models.

Methods of classification of farms in rural areas for the purposes of cooperative approaches

Subsistence and semi-subsistence farms are small holdings, usually related to the production of food to satisfy their own needs, which show a low degree of market orientation. However, there is no generally accepted definition of subsistence and semi-subsistence farm, which is a point for discussions and proposals of various author's criteria.

Difficulties in defining the concepts of "subsistence" and "semi-subsistence" derive from the subjective element in the determination of the thresholds (Bruntrup & Heidhues, 2002) and the fact that "subsistence economy" can be considered both from the consumer and from the production point of view (Mathijs & Noev, 2004), connected with incorporation of products in future production. In the most general definition of semi-subsistence agriculture involves the use of one of three criteria: physical size, economic size and market orientation.

The physical size such as agricultural area, number of cattle, volume of the production factors (such as labour) can determine a physical proportion and semi-subsistence agriculture by thresholds. McConnell D. and Dillon J. (McConnell & Dillon, 1997) suggest the use of land cultivating within the 0.5 -2.0 ha as a good approximate benchmark for semi-subsistence farms. On the other hand, in Europe there is a wide consensus that SSF or small farms are those which use agricultural area, equal to or less than 5 ha. Agricultural area is a good and easy to apply criterion, which is comprehensible for agricultural producers and to all stakeholders in the rural areas. Main disadvantage of the use of agricultural area in the determination of SF and SSF consists, however, is the fact that there are differences in terms of fertility and manner of land use.

Anywhere in the EU the physical size is the basis for the formation of thresholds. Their application is necessary in the following cases:

• To determine the amount of the utilised agricultural area, which should be referred to by the term “farm”;

• To determine eligibility for assistance under Pillar 1;

• In order to define criteria for eligibility for application on some measures for the development of rural areas, for example agri-environmental measures.

Another way of use of physical indicators for the classification of the holdings in size (small, medium, large, etc.) is the use of the indicator “input labour” (part-time or full-time holdings are classified here). This approach is used by the Department for Environment, Food and Rural Affairs (Defra) of the United Kingdom for the classification of farms in the following varieties: farms for your leisure time; part-time and full-time farms. The so-called Standard labour requirement (SLR) is used as a unit of measurement. The study of agricultural holdings in the United Kingdom determines the size of the holding in compliance with the SLR. The Standard labour requirement is “the requirement for labour (reduced to full-time) for all agricultural activities on the farm, based on standard coefficients for any agricultural product under the typical conditions for enterprises with medium size and performance”[11].

The thresholds of the criterion economic size are widely applied for the purpose of statistics and the policy all over the EU and are expressed in the form of size units (ESU). In the Farm Accounting Data Network (FADN) of the EC the thresholds, used as a criterion for market farm, are different in the different countries. According to the methodology of the FADN the market farm is defined as a holding, which is large enough to provide the basic activity of the farmer and to provide such income, which is sufficient for the maintenance of his/her family. In practice, to be classified as market, farm must exceed minimum economic size. It varies from 1 ESU in Bulgaria and Romania (according to the data from 2008) to 16 ESU in Belgium, Germany, the Netherlands and the United Kingdom.

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[11] *According to this criterion Defra classifies farms in England as “farms for leisure” (or defined as “hobby farms”), if the SLR is less than 0.5 human-years. They are regarded as “part-time farms” if the SLR is 0.5-<1 human years and “small full-time farms” if SRL is 1<2 human years.*

In the series of Eurostat “Statistics in focus” holdings of less than 1 ESU are classified as subsistence, and holdings of less than 8 ESU as small farms. Therefore, we can conclude that the farms corresponding to the Eurostat definition of small farms (1-8 ESU) are regarded as semi-subsistence farms in the EU scope.

The third widely used approach for the determination of SF and SSF is based on the criterion for market orientation. In a sense this criterion is still subjective, but offers an easy way for the classification of holdings. Wharton (1969) argues that agricultural households may vary in the two extremes of “completely subsistence” to “completely market” farming with different combinations between them. In order to be distinguished as the criterion “market orientation”, Wharton introduces threshold of 50% of the produced for the market products. The applied threshold determines agricultural producers, who sell more than zero but less than the above threshold as semi-subsistence farms, whereas those above this threshold-as predominantly or completely market.

The approach of market orientation in the scientific literature is adopted in Art. 34, par. 1 of the Regulation of the Council on rural development (Council Regulation No. 1698/2005) support on the part of the European Agricultural Fund for Rural Development, where semi-subsistence farms are determined according to the criteria of market orientation as “agricultural holdings, which mainly produce to meet their own needs and at the same time offer to the market part of their production”. This definition deliberately avoids defining of the share of production for self-sufficiency and for market purposes, for the individual Member States to adopt their own criteria for eligibility for the support of semi-subsistence farms in the process of restructuring (measure 141) in their Rural development programmes (RDP).

Comparative characteristics of the farms in the countries of the EU

As a result, the thresholds, set in the separate Member States on the occasion of realization of the relevant measures in the RDP, is based mainly on the economic size. For example, in Bulgaria semi-subsistence farms are farms with 1 to 4 ESU, in Lithuania-2-4 and, in Romania-2-8.

In order to bring small farms into groups according to certain characteristics, some authors are trying to evict typologies of SF and

SSF and classify them in homogeneous groups (clusters). Normally, indicators such as: characteristics of the farmers, the assets of the holdings, the presence of non-agricultural income, and the attitude of agricultural producers to the holding, diversification and the suspension of agricultural activity, are used.

Hawkins E. *et.al.* (1993) defined three types of models for the adjustment of agricultural households in Western Europe:

• Engagement in agriculture;

• Withdrawal-including in extreme cases a complete suspension of the agricultural activity;

• Stability.

Although that larger holdings continue to follow the model of engagement in agriculture, smaller ones tend to withdraw. In a sample of the study 6,000 households in 24 areas in 12 countries of the EU were included there. The average size of holdings, which are characterized by involvement in agriculture, is 18 ESU or 48 ha, while the amount of holdings, which are withdrawn from agriculture, is respectively 7.7 and 13 ha. “Stable” households are with sizes between these two limits. Authors identify three typical characteristics of the holdings, which are withdrawn from agriculture-leaving due to retirement, diversification of activities or closure of non-profitable farming. They also fear that the smallest holdings may be stable, simply because a further withdrawal would lead to a complete termination of the agricultural activity for them. Usually the agricultural activity in the smallest farms is the basis of their existence and a withdrawal is not applicable.

An important distinctive characteristic of the holdings is the degree of their pluriactivity and diversification. Hawkins E., Bryden J., Gilliatt N. *et.al.* (1993) established that tourism as a form of diversification is more typical of large holdings, since it requires developed agricultural resources. When pluriactiviy is present, work outside the holding is undertaken primarily by contractors in the smaller holdings. Level, however, depends primarily on external conditions, namely the development of economy in rural areas and infrastructure, the availability of jobs in the non-farming sectors.

One of the countries of the EU-15, in which semi-subsistence farms are important, is Greece. Daskalopoulou and Petrou (2002) prepared typology for the Greek holdings, focusing on their models for survival and adjustment. On this basis they identify three basic types of agricultural households-subsistence, surviving and producing. The distinction in the groups shall be carried out according to the level of employment in non-agricultural sectors, the taken on lease land, workers and the degree of mechanization. In that study subsistence holdings are small (less than 1 ha), renting small land or leased workers and having a low degree of mechanization. They produce either for their own consumption, or for another product, for which in the framework of the Common Agricultural Policy have a certain quota. Prospects of these households, according to authors, are related to their suspending to deal with agriculture due to the fact that one-third of these households have non-agricultural income.

Surviving holdings range from small SSF with an area of 1 to 5 ha to farms with an area of 20 ha, and sometimes more. They are renting more land and have a higher degree of mechanization in comparison to the subsistence holdings, but their survival is based on a part-time work on the farm. Pluriactivity is an important characteristic of theirs. Not all households in this group, however, work part-time. Some generate their main income from farming and follow production strategy based on modernisation of the holding.

Producing agricultural holdings cultivate land of over 10 ha. They are much better integrated in the markets of factors of production, a large part of their land is leased and employ a lot of workers who are usually market-oriented. They are controlled mainly by full-time farmers.

Some guidelines for implementing the cooperative approach

Differentiating the categories of semi-market, natural and market farms, different practices of cooperation and integration between them can be applied. European experience shows that a number of strategic marketing approaches and actions to improve competitiveness would work well in this direction, including through: joint marketing studies; integration of export activities; advertising campaigns; placement promotion; ensuring quality of agricultural production; development of joint marketing strategies and policies; cooperation in supplies and logistics, etc.

The main cooperative approaches for joint marketing actions of agricultural producers are: marketing boards; marketing cooperatives and producer organizations.

Marketing boards are producers' organizations, in which the main part of the agricultural producers of a given product in the country must participate. Only a few marketing boards have been built in our country – dairy, egg, poultry and rabbit meat.

Marketing cooperatives are also few in number, and cooperation is mainly on a production basis. There is still a lack of established marketing cooperatives in the individual sub-sectors in rural areas. It has been accepted that such activities should mainly be carried out by the Central Cooperative Union.

In Bulgaria, from 2007 to 2019, there were only a few recognized organizations of fruit and vegetable producers, and association between farms on a regional basis was poorly represented, regardless of the financing of such activities by the EU's Common Agricultural Policy and its measures. In comparison, in other EU countries over a third of the total quantities of fruit and vegetables are produced by common producer organisations. Similar producer organizations specialize in the production of certain agricultural products that meet certain market and regulatory criteria for quantity and quality.

The discussed strategic approaches for joint cooperative actions of native farmers are still underdeveloped or poorly developed and functioning. One of the main reasons for this is the numerous agricultural professional and other farming communities that act uncoordinated and with often conflicting interests that create mistrust among small farm owners.

Conclusions

In conclusion it may be pointed out that:

• The criterion physical size of holdings is easy to apply, but there are significant shortcomings associated with many of the number of factors such as characteristics of the ground in a certain region, degree of mechanization of production, the possibilities for the replacement of one production resource by another, etc.

• The criterion "market orientation" gives an accurate picture of the degree of development of subsistence and semi-subsistence farms, but it is applied on the basis of many serious studies and in densely-populated regions it is inappropriate.

• In this stage the counter "economic size" proves to be the best comparative indicator of the degree of activity of the holdings, which is applied in the statistics, providing reports on the holdings in the countries of the EU. Generally in the EU-15 ESU represent a more suitable criterion for the differentiation of small farms, but for the new Member States the criterion market orientation is more useful, as decisions for the production are often influenced by the needs of the household for food.

• The correct selection of cooperative and integrated activities is related to the exact typification of farms. For example, if some of the farms primarily need social measures related to poverty reduction, others need marketing and financial mechanisms to increase their market orientation and competitiveness.

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Chapter 8

ENSURING NATIONAL AND INTERNATIONAL SECURITY OF SOCIO-ECONOMIC SYSTEMS

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CRITICAL INFRASTRUCTURE DEVELOPMENT MANAGEMENT MECHANISM: THEORETICAL ASPECTS

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Abstract
In the conditions of globalization, transformational changes of individual branches in the structure of the national economy of most countries of the world are taking place. At the same time, the main role is played by the infrastructural support for the development of the spheres of economic activity. Infrastructure is a critically important component of the national economy and the basis of state and regional

policy in the context of ensuring balanced sustainable, inclusive and smart development.
In view of this, the purpose of this study is to generalize and systematize theoretical approaches to the interpretation of the concepts "mechanism", "management", "management mechanism", "development", "infrastructure", "critical infrastructure"; defining the essence and content of the term "critical infrastructure development management mechanism" from the standpoint of economic recovery and restructuring and ensuring national security.

Keywords: *critical infrastructure, mechanism, development, management mechanism, development management mechanism, conceptual and categorical apparatus, theoretical approaches, concept, national security, national economy, strategic importance, priority directions, modernization, restoration, restructuring.*

Introduction

Currently, the priority direction of the development of the national economy in most countries of the world is the functioning of critical infrastructure objects (Kyzym *et al.*, 2022) in the context of ensuring national and information security (Bezpartochna *et al.*, 2022), minimizing cyber risks and threats (Trushkina, 2023). And, firstly, this concerns the development of infrastructure in the field of energy (Trushkina *et al.*, 2021), transport and logistics (Khaustova *et al.*, 2022; Trushkina, 2022; Remyha *et al.*, 2023), information and communication technologies (Trushkina, 2019; Trushkina *et al.*, 2020a; Trushkina *et al.*, 2020b; Bezpartochna & Trushkina, 2021; Bezpartochna *et al.*, 2021; Kryshtanovych *et al.*, 2022), etc.

In view of this, the need for methodological substantiation of the development of critical infrastructure and the development of appropriate mechanisms for its effective functioning determine the conduct of further research in this direction. And firstly, it is worth paying attention to clarifying the conceptual and categorical apparatus in the direction of defining the essence and content of the terms "development", "critical infrastructure", "development of critical infrastructure", "mechanism", "management mechanism", "development management mechanism", "mechanism critical infrastructure development management".

This will make it possible to clearly substantiate a scientifically based approach to the strategic management of the development of critical infrastructure.

Materials and Methods

Based on the results of a survey conducted in 2020 by The Global Infrastructure Investor Association (GIIA) together with the international research company Ipsos Group, the value of the Global Infrastructure Index was calculated by country. It was revealed that investments in the development of infrastructure should become a priority part of the plans of the governments of various countries of the world to ensure economic recovery after natural disasters and cataclysms, armed conflicts and wars, pandemics, etc.

It was found that 79% of respondents agree that investment in infrastructure will create new jobs and increase the level of economic development. 68% believe that the government should prioritize investments in infrastructure as part of economic recovery in the post-coronavirus period. There is an increase in support for private investment if it helps the country develop the appropriate infrastructure: 68% in favour and only 8% against. Globally, satisfaction with infrastructure has improved. In 2020, 43% of respondents were satisfied (in 2019 – 37%). The Netherlands was the European country with the highest level of infrastructure satisfaction (77% of respondents), ahead of Sweden (49%), Germany (48%) and France (45%). The USA ranked 20th out of 27 countries in the world (30%), behind Canada (39%) and Mexico (38%). On a global scale, water supply/sewage infrastructure and solar energy are the two main investment priorities for economic development (chosen by 42% and 41% of respondents, respectively). However, 59% claim that their country's government is not doing enough to meet infrastructure needs (60% in 2019).

In the 2020 ND-GAIN Country Index Global Ranking (consists of an assessment of the level of vulnerability and preparedness; characterizes a country's vulnerability to climate change and other global challenges combined with its readiness to improve resilience; aimed at helping governments, businesses and communities it is better to determine the priority areas of investment for a more effective response to the nearest global challenges) in the first place is Norway (75.4 points); the second – Finland (72); the third is

Switzerland (71.9). The Czech Republic took 24th place among 182 countries of the world with an indicator value of 62.6 points, and Ukraine took 69th place (52.2). In the world rating for vulnerability (the country's sensitivity and ability to adapt to the negative impact of climate change), Switzerland (0.255) ranked 1st among 182 countries in the world in 2020; Norway (0.257) – 2nd; Austria (0.284) – 3rd; Czech Republic (0.303) – 10th; Ukraine (0.383) – 53rd place.

In the global ranking of countries by the quality of infrastructure, the assessment of the level of development is calculated on a scale from 0 to 100, taking into account such indicators as the road connectivity index, road quality, railway density, efficiency of railway communication, airport communication, efficiency of air transport services, index of communication the connection of liner shipping, the efficiency of seaport services, the speed of electrification, losses during the transmission and distribution of electricity, the impact of unsafe drinking water, the reliability of water supply. According to Statista, in 2018, Singapore was the world leader in infrastructure development with a value of 95.4. The USA took 13th place.

Without proper state management and regulation, infrastructure development will not be efficient and effective. Singapore (83.4 out of 100), Denmark (82.6), the Netherlands (82.3), Canada (81.9) and Austria (81.3) have successful public infrastructure systems, according to the Global Infrastructure Hub's InfraCompass survey. And this is evident from their ratings of infrastructure development. One of the key factors, "Government", reflects the strength of the government that exercises authority and control, the integrity of its institutions (including the rule of law and the prevention of corruption), and the soundness of the legal environment necessary to support infrastructure investment. Countries that score high on governance demonstrate strong leadership, underpinned by strong institutions that support the rule of law, transparency and consultation, and the creation of effective and independent decision-making structures for infrastructure investment.

It is worth noting that in 2018, the Singapore government created a new organization, Enterprise Singapore, to centrally champion excellence in infrastructure development strategies and action plans.

In Denmark, state regulation is carried out by the Ministry of Industry, Business and Finance. Strong leadership, policy development and oversight of infrastructure projects is provided by the Ministry of Infrastructure and Water Management, which is divided into four separate Directorates-General: mobility; aviation and maritime affairs; environment and international affairs; water and soil affairs. Improving public administration is of great interest in Canadian society and is supported by organizations such as the Ethical Boardroom and the Institute on Governance. Long-term development planning and oversight is consolidated in the 20-year Invest in Canada Plan. This is a plan worth 180 billion dollars, which is aimed at the development of public transport infrastructure, green, social, and commercial transport. In Austria, integrated public planning and supervision is led by the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology.

It should be noted that the quality of infrastructure as an indicator of the Logistics Efficiency Index is assessed using the methodology developed by the World Bank. According to World Bank researches for 2007-2018, there is a positive and stable trend in the positions of most European countries in the ranking of the main indicators characterizing the efficiency of logistics activities. For example, during this period, Slovakia improved its position according to the “Infrastructure Quality” indicator. That is, the rank of Slovakia has increased by 4 positions: if in 2007 the country took 52nd place among 150 countries of the world, then in 2018 it was 48th among 160. The best situation was observed in 2014, when Slovakia ranked in terms of the quality of infrastructure 37th place among 160 countries of the world.

And in Ukraine, in 2007-2018, the position of the “Infrastructure Quality” indicator significantly deteriorated. If in 2007, Ukraine took 74th place in the world ranking of logistics efficiency according to this indicator, then in 2018 it was already 119th. That is, the value of the “Infrastructure Quality” indicator decreased by 45 points.

Thus, this problem determined *the purpose of this study*, which consists in generalizing and systematizing existing theoretical approaches to defining the content of the concept of “critical infrastructure development management mechanism”; the author’s interpretation of this concept in the context of ensuring national security.

To achieve the goal, the following general scientific research methods were used: analysis and synthesis; comparison and classification; expert survey; structural and logical generalization.

Results and Discussion

In economics, the interpretation of “mechanism” came from technical sciences, as it became necessary to describe social and production processes in their interaction. The term “mechanism” was introduced into scientific circulation in the second half of the 1960s of the 20th century with the aim of improving the economic mechanism and in connection with attempts to reform the systems of planning, economic stimulation and existing organizational and economic forms that came into conflict with opportunities for economic growth.

Analysis of scientific publications shows that there is a wide variety of different formulations of the concept of “mechanism” and its varieties. A mechanism as a scientific category means a sequence of stages and a set of methods; the process of any phenomenon; a set of processes, techniques, methods, approaches, implementation of certain actions to achieve the goal; sequence of processes, stages, procedures and tools; a system of procedures forming a decision or rules for its adoption; way of organizing and managing production.

According to the main provisions of the theory of control and management, the concept of “management” is interpreted as a purposeful action on an object with the aim of changing its state; purposeful programmed or arbitrary influence on objects to achieve the final goal; a special type of activity; the process of planning, organization, motivation, control; hierarchically organized activity; a set of procedures and actions carried out to achieve a certain goal; function of highly organized systems (biological, social, technical); the process of purposeful and meaningful influence on objects and systems through planning, organization, motivation and control; the process of purposeful influence of the control subsystem or control body on the controlled subsystem or control object in order to ensure its effective functioning and development;

The etymology of the category “control mechanism” (“management mechanism”) is closely related to the concepts of “mechanism” and “management”. As a rule, the management mechanism is considered a set (methods of interaction of business entities; forms, structures, methods and means of management; goals, strategies, functions, methods; interconnected management methods) and a system (procedures for making management decisions, orderly actions; influence on the object of management in order to achieve the desired result; organization of the economic process).

As a result of the study, it was established that to date scientists have not developed a unified approach to understanding the essence of the concept of “development”. This is due to the fact that many scientific schools have been formed at the moment, which have specific approaches to the formulation of the terminological apparatus.

Critical analysis shows that some scientists equate the concept of development with evolution, growth, improvement, improvement, etc. But for the most part, leading scientists distinguish between these scientific categories, understanding development as a law, principle, system component, changes, phenomenon, action, process, result, property of system objects.

Based on the generalization of scientific literature, it was found that leading scientists (Dźwigoł, 2008; Karbownik *et al.*, 2012; Dzwigol, 2016; Kwilinski, 2017; Dźwigol *et al.*, 2019; Ahadiat & Dacko-Pikiewicz, 2020; Saługa *et al.*, 2020; Dzwigol, 2021; Bugayko *et al.*, 2021; Miśkiewicz *et al.*, 2021; Szczepańska-Woszczyna & Gatnar, 2022 and others) consider development as a general scientific category or concept in economics.

A separate place in the economic area is given to various aspects of the development of the enterprise as an economic system; effective development of business entities; economic development; sustainable development.

At the same time, researchers interpret development as a process (a specific process of change; a process resulting in a change in the quality of a phenomenon; a process resulting in a transition from one qualitative state to another; a process of quantitative and qualitative changes in a phenomenon unfolding over time; an immanent process, the source of which contained in the developing object itself; the process of changing the structure of the system; a continuous process of various forms of interactions within the system; an irreversible, directed, regular and unique process of changes in an open system in space and time; the process of forming a new open system, which is expressed in qualitative changes in the composition, structure and way of functioning of the system; a closely interconnected process of quantitative and qualitative transformations); changes (a set of quantitative, qualitative and structural transformations); a component of the system (deepening the composition of something, adding something new to it, previously unknown).

However, in modern conditions, the concept of "development" should be considered from the perspective of transformational economics, taking into account the significant influence of exogenous and endogenous factors and the emergence of new challenges of the time. Among them, we can indicate such as activation and deepening of the processes of globalization and European integration, transformation, digitalization, infrastructural provision and transition to network forms of interaction and partnership, application of green logistics tools (Dzwigol *et al.*, 2021a; Dzwigol *et al.*, 2021b) in the context of the concept of circular economy (Trushkina & Prokopyshyn, 2021; Ganea *et al.*, 2022; Kuzior *et al.*, 2022) etc.

Therefore, the concept of "development" is proposed to be interpreted as:

the process of transformation of economic systems (Bezpartochnyi *et al.*, 2022) through the transition of key components (for example, critical infrastructure) to a qualitatively new level of functioning due to adaptation to the variability and instability of external and internal institutional environment factors;

a dynamic process that leads to structural changes (economic, social, organizational, environmental, etc.) of objects and networks occurring in a multi-component spatial system.

The study of various aspects of the development of infrastructure as a multifunctional system that ensures the functioning of economic systems is given considerable attention in the works of leading scientists (Marshall, 1920; Clark, 1923; Samuelson, 1954; Lewis, 1955; Hirschman, 1958; Rosenstein-Rodan, 1961; Rostow, 1962; Singer, 1964; Jochimsen, 1966; Nurkse, 1966; Youngson, 1967; Pesenti, 1970; Aschauer, 1989; Murphy *et al.*, 1989; Simonis, 1989;

Hedtkamp, 1996; Samuelson & Nordhaus, 2009; Frischmann, 2013; Blaiklock, 2014; and others).

According to the theoretical analysis, researchers mostly understand the term “infrastructure” as: the main element of the market economy; component of the economic system and subsystem; factor of economic intensification; working conditions and material production; base for the development of industries; social market institute; a set of material and technical facilities and means; a set of institutes, institutions, organizations, technologies, norms, systems; a set of general conditions that ensure the development of entrepreneurship; economic relations in the process of activity of various objects of a production and non-production nature; the system of general conditions of market development with the aim of creating a favourable economic climate for the functioning of capital; a system of interacting agents of the sphere of circulation, providing trade and economic connections between production and consumption; a set of activities that contribute to the sale of goods on the market and the formation of new demand for goods and services; a set of activities that ensure the flow of goods from producers to consumers, etc.

Based on the generalization of the existing scientific approaches to the formulation of the term “infrastructure”, they are conditionally systematized according to the following groups: system; resource; mechanism; systemic economic category; a component of the economic system; complex of types of economic activity; part of the economy; appropriate conditions (institutional, economic, social, environmental); a component of the environment; component of the spatial system.

In the scientific literature (Srinivasan & Parlikad, 2013; Zhang *et al.*, 2016; Wróbel, 2019; Rathnayaka *et al.*, 2022; Rehak *et al.*, 2022; Shen *et al.*, 2022; Scholz *et al.*, 2022 and others) many interpretations of the concept of “critical infrastructure” are used from various positions, including national security.

Summarizing the existing scientific developments regarding the conceptual apparatus, it was established that scientists usually understand critical infrastructure as: a complex system; its key components or components; critical infrastructure facilities; network structure; physical structure; organizational structures; institutes;

institutions; institutions; set of assets; object of administrative and legal protection; object of cyber protection; security direction; one of the security tasks of the state; a component of the national infrastructure; a set of objects, technologies, state and scientific structures; object of state administration; component of information security; an element of the national security system of the state or region, etc.

Conclusions

Based on the above, we can come to the following conclusion. At the moment, the concept of critical infrastructure development is being implemented in most countries of the world, which should reflect current problems, include ways to solve them, and also meet modern global challenges, especially from the point of view of security, stability, reliability, functionality, integrity. Therefore, the protection of critical infrastructure from numerous global threats and risks becomes a strategic task at the national level and is of crucial importance for maintaining the adequate functioning of ecosystems and ensuring their sustainable, inclusive and smart development.

As a result of the study, it was established that the concept of “critical infrastructure” is identified with such definitions as: infrastructure; life support systems; critical infrastructure facilities; vital social functions; products, goods, services and related processes.

With the use of the system approach and the classification method, the interpretation of the term “critical infrastructure” proposed by various scientific schools is conventionally systematized, according to such groups as: system; elements of the system; structure (network, physical, organizational); set of assets; security direction; the key security task of the state; object of protection (administrative-legal, cybernetic); a component of the national infrastructure; object of state administration; a component of information security, etc.

In this work, it is proposed to consider critical infrastructure from the standpoint of ensuring the national security of the state and restructuring the national economy.

The development of critical infrastructure can be understood as the process of transformational changes of priority and strategically important objects, systems, networks for the economy through the transition of key components of the infrastructure to a qualitatively new level of functioning thanks to adaptation to the variability and instability of the exogenous environment, taking into account the influence of possible threats, risks and modern challenges.

The mechanism is an interconnected set of socio-economic relations, principles, methods, forms, and approaches to managing the development of critical infrastructure. The components of the mechanism include the following: means and tools; subjects and objects of management; methods, levers and tools; structure and complex of forms and methods; methods

Under management, it is appropriate to consider a continuous integrated process, which is carried out through the implementation of management functions (forecasting, planning, organization, accounting, control, analysis and regulation) of the development of critical infrastructure.

The term “management mechanism” is understood as:

the appropriate way of organizing infrastructure development management with their inherent forms, methods, tools and means;

a set of ways, forms and methods of influence of the subject of management (authorities, international financial organizations, various categories of stakeholders, etc.) on the object of management (objects of critical infrastructure) in order to achieve the set goals;

an integrated system that includes the purpose, functions, tasks and methods of management, with the help of which the achievement of the final goals is ensured (for example, the modernization of critical infrastructure in the conditions of the post-war development of the economy of Ukraine).

Based on the conceptual provisions of the selected research topic, the author’s interpretation of the concept of “critical infrastructure development management mechanism” is provided as a set of principles, tools, functions, methods, means, resources and influencing factors aimed at achieving sustainable functioning of critical infrastructure objects in various spheres of economic activity due to the use of modern innovative, green, digital, information and communication, marketing, and logistics technologies.

At the same time, this mechanism should be effectively implemented in the management system, that is, in a complex of organizational measures, operations and methods aimed at increasing the level of competitiveness of the economy.

It is worth noting that the scientific novelty of this research consists in the combination, symbiosis and integration of the categories “mechanism”, “management”, “management mechanism”, “development”, “infrastructure”, “critical infrastructure” taking into account the factors of the exogenous and endogenous environment, peculiarities, patterns, trends in the development of processes, qualitative transformations with the presence of interrelationships of organizational, digital, logistical, foreign economic, innovative and social transformations characterized by quantitative and qualitative changes. This makes it possible to achieve the set goals, to take into account all aspects of the development of critical infrastructure objects in various types of economic activity in modern business conditions.

Prospects for further research consist in the development of recommendations for the improvement of regulatory and legal regulation of the development of critical infrastructure in Ukraine, taking into account the best international experience.

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ENSURING FOOD SECURITY UNDER MARTIAL LAW

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Abstract
The article examines the problems of food security in Ukraine under martial law. In addition, toxic risks of environmental pollution as a result of the war, which affects the ecology and health of the population of Ukraine, were revealed.

Keywords: *food security, HACCP, martial law.*

Introduction

Food security is an integral component of the state agricultural policy of any country, including Ukraine. The duty to ensure food security in accordance with the requirements of the Constitution of Ukraine and other acts of current legislation rests with the state.

The economy of our country, in particular the agrarian sector of the economy, has suffered significant losses in the last eight years due to the ongoing aggression of the russian federation. From February 24, 2022, such aggression took the form of a total full-scale war, which became the reason for the introduction of a legal regime of martial law in Ukraine on the basis of the corresponding Decree of the President of Ukraine (Decree of the President of Ukraine No. 64/2022).

Food security is defined by current legislation as the protection of a person's vital interests which is expressed in the state's guarantee of unhindered economic access of a person to food products in order to support his normal life activities (Law of Ukraine No. 1877-IV, 2004).

Among the main criteria of food security of the state, the following can be distinguished (Hetman *et al.,* 2012):

– the ability of the economy, in particular the agricultural sector, to function in normal and extreme conditions;

– preservation of state control over strategic resources (natural resources, energy sources, fuel, seed stock, agricultural products (goods);

– preserving the balance of national interests (national security) and the interests of other countries (global security) in the sphere of ensuring food security;

– minimal dependence of the economy on the import of the most important types of products, in particular agricultural products;

– maintaining the living conditions of the population which guarantees unimpeded economic access to food products in order to maintain normal life activities;

– stability of the financial and banking systems, etc.

In Ukraine, in recent months, under the conditions of the legal regime of martial law, a number of normative legal acts aimed at regulating strategic relations to ensure food security were adopted. These include, in particular: the Law of Ukraine "On Amendments to Certain Legislative Acts of Ukraine on Creating Conditions for Ensuring Food Security under the Conditions of the Martial Law" dated March 24, 2022 (Law of Ukraine No. 2145-IX, 2022).

Actuality of theme

The life of the country in the conditions of war requires a quick response of state authorities, especially the adoption of laws regarding life activities in the conditions of russian aggression. In such answers, land legal relations regarding the provision of land plots for relevant needs are not left out of consideration, since active military operations on the territory of our state lead to the release of organic chemicals into the soil, sedimentary rocks and adjacent waters, and, accordingly, to a decrease in the area of land that can be use for agricultural needs.

That`s why, on March 24, 2022, the Verkhovna Rada of Ukraine adopted the law “Amendments to some legislative acts regarding the creation of conditions in Ukraine to ensure food security during the period of martial law”. Thanks to this law, 20 000 hectares of communally owned land, which were prepared for lease at land auctions, will be transferred for agricultural production; 300-400 thousand hectares of state-owned lands, which are currently in permanent use by state enterprises of the Ministry of Agriculture, the National Academy of Sciences of Ukraine and educational institutions, will create the prerequisites for agricultural production, which will make these lands available for about 1.4 million tons of food crops. Yes, food security in Ukraine needs a lot of attention now. This requires the immediate use of all available agricultural land for planting. To do this, the authorities simplified access to rights to agricultural land plots under the conditions of the martial law.

War requires rapid response actions to repel armed aggression and support the economy. The norms that regulate land relations in peacetime, when the procedures for granting land lasted for months, proved their incompetence and unadaptability to the new reality in the conditions of the martial law. The solution of many tasks of the functioning of the economy of Ukraine during the war, including the management of agriculture, directly depended on the speed of making administrative decisions regarding the provision of plots for the appropriate purposes, carrying out land management and registration of land rights.

The aim of the research is to establish the mechanisms of ensuring food security in the conditions of martial law.

Materials and Methods

In the course of the study, studies of Ukrainian and foreign scientists and specialists in food safety issues were used.

Results and Discussions

(a) Implementation of the HACCP system. Given the constant increase of contaminated areas, there is no doubt that food products can be contaminated at many stages before they are ready for consumption – during the cultivation of crops, fodder or livestock, during harvest or during its storage, transport and processing. And although for producers engaged in primary production (production and cultivation of products, including harvesting, milking, breeding of animals until the moment of slaughter, hunting of animals, fishing and harvesting of wild animals) it is not mandatory to implement the HACCP system, but it is sufficient to fulfill hygienic requirements and implement requirements that are prerequisites for HACCP programs, it is worth understanding that these actions are extremely important in today's conditions, since some dangerous factors that may appear at the stage of primary production cannot be eliminated later.

The main reason for the implementation of the HACCP system in Ukraine is effective management of the quality and safety of food products. Today, it is one of the few reputation protection tools for institutions. It has been practiced in Europe and the USA for several decades. In Ukraine, each owner independently creates and maintains a HACCP system for his restaurant establishment and bears responsibility in case of any event, including one related to chemical risks, due to insufficient inspection of raw materials received by supplier companies. The implementation of this control system requires material costs on the part of restaurateurs, but in the long run, everyone, from establishments to guests, gets significant benefits. The first ones become more competitive by producing products and dishes of the best quality and gain the trust of consumers. And guests gain confidence in the quality and safety of the dishes they buy in restaurants (Syliveistr, 2020; Skrynnyk, Kuzmin, 2022; Yurchenko *et al.*, 2022; Zaporozhan *et al.*, 2022).

As for today, there is a problem of insufficient training of personnel, lack of funds and lack of understanding of the principles of HACCP in the restaurant industry (Petrovska *et al.*, 2020).

However, a responsible approach to the implementation of the HACCP plan by the restaurant industry makes it possible to identify all dangerous factors that may pose a potential threat to the life and health of consumers, and to prevent their occurrence, thereby minimizing food safety incidents that entail legal liability. It will also provide a basis for protection against legal proceedings and lead to lower insurance costs.

(b) The role of chemical pollution. In total, more than nine million people die prematurely each year – one in six deaths – due to pollution of air, water, food, buildings, workplaces or consumer products (Landrigan *et al.,* 2018). To put this into perspective, the annual number of chemical-related deaths is far greater than during the World War II and it is the single largest form of death today that could be prevented. In addition, it causes catastrophic damage to nature, highlighting the role of chemical pollution in the potential ecological disruption of the planet (Goulson, 2018).

There are serious gaps in our understanding of the dimensions of the threat and risks associated with the spread, mixing and recombination of chemicals in the environment. Although some pollution control measures exist, they are often not implemented with the necessary speed to avoid chronic and acute consequences for human health now and in the coming decades. There is an urgent need for increased global awareness and scientific investigation of the overall scale of risk associated with the use, distribution and disposal of chemicals (Naidu *et al.*, 2021).

The human chemical signature is now omnipresent, having been detected in the upper atmosphere, on the highest mountains, in the deepest oceans, from pole to pole and in the most remote, uninhabited regions, in soil, water, air and in the human food chain (Gruber, 2018). More than 700 "dead zones" are currently known in the seas and oceans, and pollution by hazardous substances is one of the factors most strongly associated with environment destruction (Diaz & Rosenberg, 2008). These substances and their residues have been detected in the blood and tissues of all population groups, including the unborn and infants (Mathiesen et al., 2021), as well as in mother's milk (Hu *et al.,* 2021). They are found in aquatic biota, plants and wildlife, as well as in food (Naidu *et al.,* 2021). Life is a function of genetics, metabolism, nutrition and environment, and chemical toxicity can aggravate each of these functions; the combined and cumulative effects of all anthropogenic chemicals, acting together, can potentially harm human life itself.

In recent decades, the number of pieces of evidence of cognitive, reproductive and developmental disorders and premature deaths caused by chemical pollution of the human environment has been increasing (Diamanti-Kandarakis *et al.*, 2009).

According to the data of the American Academy of Pediatrics, more than 10 000 chemicals are used or found in modern foods. Contamination of the food chain creates a direct danger to humans through the consumption of contaminated food. The risk may be passed on to subsequent generations because contaminants have been found in human breast milk and have been linked to cognitive and other health disorders or by epigenetic means. Adverse effects of pollutants on the human gut microbiome are also a warning of potential long-term effects on immunity and metabolism.

(c) The impact of military activity on the environment. Today, the power of states is traditionally analyzed in military, economic and geopolitical aspects. Given that land power is likely to be the main element of national power, it can be used to create strategic military effects (Johnsen, 2019). Under pressure caused by the expected increase in military activity on a global scale, sustainable solutions to military chemical contamination have become an urgent need, because the role of the environment and natural resources has determined the future power of nations and has gradually become a dominant factor influencing national and international politics as chemical pollution is a threat to humanity, and environmental protection and sustainability, including land conservation, is a critical defense and security issue.

As with many other types of industrial activities, organic pollutants at facilities which have a military influence can pose significant risks to the environment and human health. Given the expected increase in defense investment worldwide, there is a need to inform society about the risks of organic pollutant emissions created as a result of military activities and to identify approaches to minimize the risks.

Military activities have environmental effects on terrestrial ecosystems through physical or chemical effects. With regard to organic pollutants, these effects can be classified into three activity groups:

– the creation of infrastructure and military bases which include the construction areas of service buildings and permanent structures necessary for support, location and operation;

– regular procedures of military trainings which provide for the execution of operations and separate military actions for the conduct of trainings in peacetime in certain places;

– active armed conflicts which involve a combination of active military operations which may include airstrikes, naval or land force strategies, as well as the use of chemical weapons.

Military infrastructure includes areas of construction of service buildings, that is, objects that are directly owned and operated by the army or one of its units, and in which the means of supply are organized. During their operation, a large amount of harmful waste is generated, such as corrosive substances, solvents, paints, fuel and oils. Some pesticides and biocides are also used by specialized units of the armed forces to destroy organisms that cause disease and threaten public health, and to control pests that destroy buildings and structures vital to public safety. Another use of pesticides by the militaries involves the procession of military materials such as camouflage netting and geotextiles to reduce the incidence of insect bites (Fernandez-Lopez *et al.*, 2022). Even aerial application of herbicides such as Agent Orange, which became widespread during the Vietnam War is known (Ginevan *et al.*, 2009). All of these activities can contribute to organic pollutant contamination (Britch et al., 2020). Another environmental impact may be related to the construction of ammunition storage facilities where explosives were previously manufactured and processed. In such places, the production of explosives mainly took place during the Second World War, when, for example, 2,4,6-trinitrotoluene (2,4,6-Trotyl) was produced there (Eisentraeger *et al.*, 2007). At the end of the war, unfired weapons remained in ammunition dumps, similar structures from the Cold War, the First and Second World Wars were discovered in Europe (Gorecki *et al.*, 2017).

Organic pollutants that enter the soil as a result of military activities are divided into the following groups: potentially toxic compounds (PTC), energetic compounds (EC), chemical warfare agents (CWA) and military chemical compounds (MCC). Their concentration in soil in military areas can be unacceptably high and, along with high toxicity and persistence, this can lead to environmental risks (Broomandi et al., 2020).

In today's conflict between russia, which launched a full-scale invasion of Ukraine on February 24, 2022, and Ukraine, new threats to the environment have emerged. Ukraine is a country with tunnels and mines that were flooded. These mines, which have been confirmed to be radioactive, are affecting the water supply of cities through the spread of chemical contamination. Scientists reported that the danger to such cities could be "deeper and more dangerous than Chernobyl". Currently, Ukraine is also experiencing an environmental crisis related not only to mines, but also to pollution due to industrial emissions and organic pollution caused by ammunition and shelling (russia-Ukraine War, 2022).

The North Atlantic Treaty Organization (NATO) leads on international level the development of environmental mechanisms and policies as guiding principles for the armed forces. NATO emphasizes the responsibility of citizens to participate in sustainable improvement, and the defense sector is not an exception (Goodman & Kertysova, 2022). In addition, this organization recognizes that military activities must correspond the environmental policy, except in extreme circumstances where the sovereignty of its members is threatened. NATO and its member countries, such as the United Kingdom, the United States, Denmark, Greece, Holland, Canada and the Czech Republic, as well as non-NATO countries such as Australia and Sweden, have special environmental units in their armed forces that envisage the results of environmental management in their activities (Oglanis & Loizidou, 2017). The US Department of Defense was the first who created an organization for such oversight back in 1970 in the form of the Environmental Management System (EMS). Later, other countries began to establish military EMS (Ferro, 2012). For example, the Spanish Ministry of Defense aims to reduce soil degradation and pollution on military land. The policy followed by the Department of Soil Decontamination and Remediation can be summarized by establishing the most appropriate prevention and management measures to reduce the potential risks of soil contamination. A plan for the prevention and restoration of contaminated soil at military facilities was also published.

Conclusions

All this characterizes the mechanism of ensuring food security of Ukraine in the conditions of martial law and a comprehensive vision of the threat of chemical pollution. It can be argued that environmental pollution, which is currently being applied to the environment throughout the territory of Ukraine, will continue to affect the ecology and health of the population of Ukraine for many years to come.

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STATE REGULATION OF NATIONAL SECURITY OF UKRAINE IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT OF THE REGIONS

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Abstract
The study aims to substantiate the directions and methods of state regulation necessary to ensure the sustainable development of regions in the face of external threats. The research methodology is based on determining the factors of the safe development of regions, the levers of influence on them and the development of a system of regulatory measures by the regional authorities. The impact of various external threats on the socioeconomic development of Ukraine and its regions was analysed to realise the goal. Based on benchmarking comparisons, the need for changes in the structure of economic complexes of the regions is substantiated. The levers of influence on the factors of sustainable development of regions are proposed. A systemic approach to state regulation of the impact on safe development will contribute to reducing the adverse effects of external threats on the sustainable development of regions.

Keywords: *national security; sustainable development; resilience of regions; state regulation; influence tools; management efficiency; partnership.*

Introduction

In the era of globalisation, it is extremely difficult to ensure territorial seclusion of economic activity and social processes. In this case, globalisation creates both opportunities and threats. Only a competitive economy can find your “niche” in international distribution and use possibilities. For weak states is growing the likelihood of transforming into hopeless territories and hope for the survival of the population only through the support of the world community (Held *at al.,* 1999).

According to the United Nations, Ukraine, in the first years of independence, was considered one of the 20 most developed countries in the world. Indeed, the natural resource potential of Ukraine per capita exceeds the corresponding indicator for the USA by 1.5-2 times, and for Japan, by 12-15 times (Heyets, 2003).

However, the acquisition of independence was accompanied by many problems related to the rupture of cooperative relationships and the need for progressive changes in the structure of the economic complex. After all, the economy of Ukraine was formed only as a component of the economic complex of the former USSR. Therefore, despite the hope of rapid growth of population well-being and joining the circle of countries with the highest sustainable development results, Ukraine is among the poorer countries.

The economy’s structure in which agriculture, industry and services are allocated is one of the signs of the country’s economic development level. A decrease in the share of agriculture and an increase in the percentage of services characterizes the economy of developed countries. For example, in the European Union, the rate of agriculture is only 1,8% of the gross value added (GVA), the share of industry – is 25,1% of GVA, the most critical sector of the economy is the service sector, which reaches 72,9% of GVA (Eurostat, 2020).

In Ukraine, at the beginning of the new millennium, particularly in 2001, the share of agriculture in GVA was 16.3%. At the same time, the percentage of agriculture in the gross regional product (GRP) in some regions (Chernihiv, Kirovograd, Volyn regions) exceeded 70,0% and reached 79,0% in the Ternopil region, 80,0% – in Cherkasy region (calculated from Osaulenko, 2013).

According to experts, Ukraine could have restored the level of economic development of 1990 only in 2020, but by 2030 a significant lag from economically developed countries would have been preserved (Besiedin & Serhiienko, 2012).

But the actual achievements of our country at the beginning of the second decade of the new century were far from the desired. According to one of the main criteria for the economic development of the country – a gross domestic product per person (in USD at PPP of 2005), Ukraine had lower results: 8,56 times than Norway; Almost six times than the Netherlands (5,97 times), Austria (5,95 times), Ireland (5,94 times), Denmark (5,79 times), Sweden (5,78 times), Germany (5,67 times), Belgium (5.,55 times); Almost five times than Finland (5,34 times) and France (5,04 times). More than three times Ukraine's GDP per person fell behind the achievements of Italy, Slovenia, the Czech Republic, Portugal, and Poland. There was also a lag from the former republics of the Soviet Union: 3,12 times – from Lithuania, 2,76 times – from Latvia, and 3,19 times – from Estonia.

The average monthly salary in Ukraine (in US dollars) is less: than in Norway by 17,6 times; in Denmark by 14,9 times; in Ireland by 13,8 times; in Belgium by 12,17 times; in Sweden by 11,8 times; the Netherlands by 11,5 times; Finland by 11,2 times; Austria by 10,96 times; France by 10,0 times; Germany by 9, 96 times. Wages in Ukraine are also lower than in some former republics of the USSR: 3,0 times lower than in Estonia; 2,3 times lower than in Latvia; and 2,1 times lower than in Lithuania (calculated from Osaulenko, 2014).

Since 2014, russia's military aggression has dealt a crushing blow to Ukraine's economy. In the difficult conditions of the struggle for the independence and integrity of the state, Ukraine needs not only to stop the destruction of the economy but also to create conditions for economic growth. According to the Law of Ukraine on National Security, adopted in 2018, the fundamental national interests of Ukraine include ensuring the sustainable development of the national economy, society and the state to increase the level and quality of life of the population (Verkhovna Rada of Ukraine, 2022).

So far, Ukraine is bearing hefty losses. According to the calculations of Ukrainian experts, the damage caused due to the annexation of Crimea exceeds 1 trillion. UAH. Military actions in the east of Ukraine led to the loss of 20% of the country's economic potential (Kasperovich, 2018).

The size of losses from violence and their dynamics allow using to estimate data from The Institute for Economics and Peace (IEP). This non-profit, independent centre publishes reports on the results of the measurement of the Global Peace Index (GPI).

Additionally, the reports estimate the economic cost of violence, including per capita. The economic cost of violence is estimated as a combination of direct and indirect costs from the country's militarisation, the impact of internal and external conflicts, and social security and protection costs.

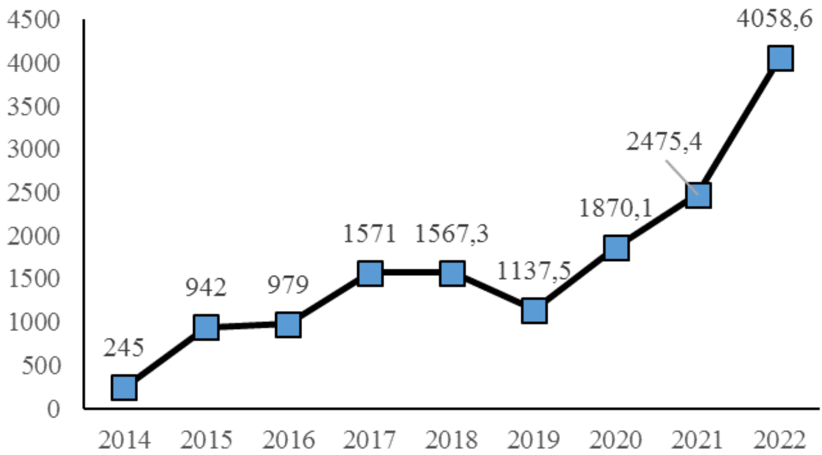

Figure 8.1 Dynamics of the economic cost of violence per person of the population in Ukraine, USD

Source: IEP (2022)

According to the IEP, it is clear that Russia was preparing for aggression in advance. After all, in 2014, according to the level of economic losses from violence, Ukraine, with an indicator of 245 USD per person and 3,3% of GDP, ranked only 123rd place. At the same time, russia, which had ranked 23rd, had spent 1685 USD per person and 9,5% of GDP. During the hybrid war, economic losses from violence per person increased almost 20 times in Ukraine. At the same time, losses as a percentage of GDP increased 6 times. However, the militarisation of russia led to an increase in economic losses per person by 3,8 times, to 6423,1 USD, despite an increase in losses of only 1,5% of GDP (The Institute for Economics and Peace, 2022).

As a result, despite all assurances of peaceful intentions, on February 24, 2022, Russia launched a full-scale war against Ukraine. According to the assessment of the World Bank, together with the

Government of Ukraine and the European Commission, only by June 1, 2022, direct losses related to the destruction of physical assets will reach 97 billion US dollars. Considering the damage, which shows changes in the economy due to the intersection of losses in different sectors, the damage is estimated at 252 billion US dollars. To restore destroyed assets (considering their modernisation), it will be necessary to spend 349 billion US dollars, which is 1.6 times higher than the GDP of the country in 2021 (World Bank, Government of Ukraine, European Commission, 2022).

But despite the incredible losses, the economy of Ukraine needs to ensure the achievement of sustainable development goals defined by the relevant strategy from 2020. In addition, there is a need to implement the task of introducing a national stability system in accordance with the decision of the National Security and Défense Council of Ukraine and the corresponding Presidential Decree No. 479/2021 of September 27, 2021 (The President of Ukraine, 2021).

The national stability system provides for the formation of financial and economic stability, ensuring the continuity of the central business processes. Only financial and economic stability is the key to resource provision of the security and defence sector, food, energy, and environmental security.

Achievements in the development of the national economy significantly depend on the results of developing its components, which territorial or branch characteristics can distinguish.

According to the administrative-territorial feature, Ukraine is divided into regions, which coincide with administrative regions. The regions of Ukraine exceed some European countries in terms of territory and population. The regions are located in different climatic zones and differ significantly in terms of natural resource potential, the structure of economic complexes, the diverse population composition by nationalities, the pre-war level of socio-economic development and the damage caused to them.

The success of recovery and sustainable development of regions significantly depends on the efficiency of state administration at the regional level.

Multifaceted problems of sustainable development are reflected in the scientific works of O. Bilorus, Z. Buryk, V. Boreyko, V Heyets, T. Ivanova, E. Zabarna, V. Mamonova, I. Rozputenko. They paid immediate attention to the problems of ensuring international competitiveness in the conditions of globalisation, world experience in overcoming poverty and stimulating the development of the economy, regional issues, and global aspects of sustainable development. In recent years, research on assessment and ways to ensure the sustainability of territories' sustainable development has intensified. However, for Ukraine, it is currently necessary to solve the problem of reviving all aspects of the region's development after the war's end to ensure rapid positive changes in providing the sustainable development of the territories.

A systemic approach to state regulation of the impact on safe development will contribute to reducing the adverse effects of external threats on the sustainable development of regions.

The study aims to substantiate the directions and methods of state regulation of national security, which are necessary to ensure the sustainable development of regions even in the face of external threats.

To achieve the goal, the following tasks have been defined: analysis of the impact of external threats on the socio-economic development of Ukraine, its regions and spheres of activity; a review of the literature on the experience of various countries in restoring the economy after the war, increasing its resistance to shocks of a global scale, ensuring rapid positive shifts in sustainable development; adaptation of the experience of the leading countries of the world to the conditions of our country; identification of factors of sustainable development of regions and levers of influence on them; substantiation of directions for increasing the efficiency of state management of regional development.

Materials and Methods

Various data for the period from 2000 to 2021 served as the information base of the study. In particular, were used: official materials of the State Statistics Service of Ukraine and the Statistical Bureau of the European Union, reports and analytical information from domestic and international organisations, electronic resources and the results of the author's research.

The research methodology is based on determining the factors of the safe development of regions, the levers of influence on them and the development of a system of regulatory measures by the regional authorities.

To achieve the set goal and solve the research tasks, general scientific methods were used theoretical level, in particular logical summarization of individual facts and results regarding the impact of external threats on the state of socio-economic development of Ukraine and its regions, benchmarking comparisons to justify the need for changes in the structure of the economic complexes of the regions, as well as system analysis to ensure balanced development of territories.

Results and Discussions

The results of the socioeconomic development of countries and their regions are formed under the influence of internal and external disturbances. Internal upheavals are associated with unnatural disasters and economic and management crises. The acquisition of independence of Ukraine was accompanied by the emergence of an economic crisis due to the breakdown of economic ties and the deformed structure of the economy, as well as the need to eliminate the consequences of the technological disaster at the Chornobyl nuclear power plant (1986). The deep economic crisis led to the deterioration of all economic indicators, hyperinflation, and unemployment. Thus, in 1999, GDP was only 40,0% of the 1990 level. Even agriculture was affected. The number of cattle in 2000 reached only 38,0% of its number in 1990, and pigs – 39,0%. The consumption of food products important for human health has decreased: meat and meat products by two times, milk, and dairy products by 1,9 times, eggs by 1,56 times, fish and fish products by 2,1 times (Osaulenko, 2008*)*.

In the second millennium, the growth of Ukraine's GDP was observed. But it was not stable due to the influence of external factors (Table 8.1).

The given data indicate that the global economic crisis of 2008 led to a drop in Ukraine's GDP in 2009 to 81,0% of the 2007 figure. The recovery began in 2010, and in 2013 the GDP indicator exceeded the level of 2007 by 35,0%. But in 2014, the GDP started to fall due to military aggression by russia. In 2015, the GDP level was only 82,0% of the 2007 figure and only 60,0% of the 2013 figure. In general, the country only 2017 recovered the level of the 2007 indicator.

Table 8.1

Gross domestic product in Ukraine, 2005-2021

Year	Gross domestic product per capita (current prices) (EUR)	Gross domestic product (current prices) (EUR million)	Gross domestic product (current prices) (National currency, million)
2005	1519,4	71570,2	457325,0
2006	1905,7	89163,4	565018,0
2007	2334,5	108574,6	751106,0
2008	2778,8	128544,2	990819,0
2009	1892,2	87141,3	947042,0
2010	2319,3	106388,7	1120585,0
2011	2661,3	121638,0	1349178,0
2012	3115,9	142066,0	1459096,0
2013	3154,2	143482,4	1522657,0
2014	2348,2	100975,2	1586915,0
2015	1915,6	82073,9	1988544,0
2016	1975,8	84312,6	2385367,0
2017	2338,7	99360,5	2981227,0
2018	2620,4	110764,8	3560302,0
2019	3268,6	137372,9	3977198,0
2020	3285,0	137132,8	4222026,0
2021	4083,8	168980,0	5459574,0

Source: Eurostat (2023)

The regions of Ukraine differ significantly in terms of the level of socio-economic development and their reaction to the impact of external crisis phenomena. Among the regions of Ukraine in 2020, except for the city of Kyiv, only Dnipropetrovsk, Kyiv, and Poltava regions had a level of gross regional product per capita significantly higher than the average for Ukraine. In the Kyiv region, this indicator is higher than the average by almost 34,3%, in the Poltava region – 35,1%, and in the Dnipropetrovsk region – 24,8%. At the same time, the level of the indicator of the Luhansk region reached only 20,1% of the average for Ukraine and 14,9% of the indicator of the Poltava region. The indicators of Donetsk (49,6%), Zakarpattya (49,0%) and Chernivtsi (49,5%) oblasts are slightly less than half of the average for Ukraine (Table 8.2).

Table 8.2

Gross regional product per person (at actual prices), UAH

Region	2005	2008	2011	2014	2017	2020
Ukraine	**9372**	**20495**	**28488**	**36914**	**70171**	**101138**
AR Crimea	6460	13898	19467	-	-	-
Oblasts						
Vinnytsya	5966	12061	17768	27249	58296	88380
Volyn	6285	10340	16993	23218	49937	75193
Dnipropetrovsk	11909	30918	42068	53749	97043	126209
Donetsk	12490	26028	36446	27771	39299	50124
Zhytomyr	5554	11545	17184	23678	49700	76017
Zakarpattya	5373	10626	14455	19170	34197	49538
Zaporizhzhya	10683	23232	27567	37251	75196	99738
Ivano-Frankivsk	6916	12940	19386	27232	46282	66245
Kyiv	8673	21593	34420	46058	89904	135817
Kirovohrad	6394	13515	19918	29233	55128	81166
Luhansk	8131	18338	25067	24514	13873	20297
Lviv	6657	13902	20490	28731	58183	94317
Mykolayiv	7801	16175	23402	30357	60486	86750
Odesa	8619	19638	25748	31268	62643	92823
Poltava	11574	22476	35246	48040	105994	136608
Rivne	6269	12217	16735	24762	42004	62485
Sumy	6497	13622	19800	26493	51367	75815
Ternopil	4603	9688	15055	20288	38563	60565
Kharkiv	9025	21294	27966	35828	69409	97428
Kherson	5713	11944	16990	21725	45486	66973
Khmelnytskiy	5764	11932	17260	24662	49858	77153
Cherkasy	6681	14581	21082	30628	59612	91817
Chernivtsi	4654	9771	13228	16552	31495	50110
Chernihiv	6474	13213	19357	26530	55139	85435
Cities						
Kyiv	28780	61592	79729	124163	238687	342247
Sevastopol	7452	16592	24564	-	-	-

Source: (Osaulenko, 2012), (Verner,2022b), (Zhuk, 2016)

The global economic crisis of 2008-2009 had the most significant impact on industrialised regions. The GRP indicator per person in 2009 compared to 2008 decreased by 12,7% in Zaporizhzhya Oblast, 12,3% in Donetsk Oblast, and 11,4% in Dnipropetrovsk Oblast. At the same time, there was a significant increase in the indicator in some regions: in the Volyn region by 14,1%, in the Ternopil region – by 5,7%. In other regions, there were fluctuations within 1,0% (Zhuk, 2016).

Hybrid military aggression by Russia in 2014 led to the annexation of Crimea and the partial seizure of the Donetsk and Luhansk regions. By its decision, the aggressor country illegally annexed territories to the Russian Federation, appropriated enterprises located on the territory of Crimea, 80,0% of the oil and gas deposits of the Black Sea shelf of Ukraine, 10,0% of the port infrastructure along with 4 million tons of grain cargo. In the occupied part of Donbas, Ukraine lost the assets of most Ukrainian mines, railways, and banks. Total losses for Ukraine reach 15,0% of GDP, 23,0% of commodity exports and almost 24,0% of industry (Kasperovich, 2018).

As a result, in 2014, compared to 2011, the GRP per capita in Donetsk region decreased by 23,8%. At the same time, most oblasts ensured a significant increase in this indicator, in particular, it increased by 48,0% in Rivne Oblast, 53,4% in Vinnytsya, 46,8% in Kirovohrad Oblast, and 45,3% in Cherkasy Oblast (Table 8.2).

The COVID-19 pandemic virus has become a shocking phenomenon for the world economy. Ukraine also felt its consequences. The most affected by it were tourism and related industries: transport, accommodation facilities, and catering establishments. Thus, the number of persons in collective accommodation in Ukraine decreased from 4604,9 thousand in 2019 to 2218,6 thousand in 2020. The number of tourists served by tour operators and travel agents decreased from 6132097 to 2360278 people. By region, the most significant loss of tourists was observed in Odesa, Mykolayiv, and Chernivtsi regions (their number dropped by more than 3,5 times). In Zaporizhzhya, Kharkiv and Chernihiv regions, the losses were the most minor (1,7 times decrease) (Verner, 2022a).

Russia's full-scale war against Ukraine, which began in February 2022, was another shock for Ukraine. Its consequence is the flow of refugees, and destroyed residential complexes, enterprises, infrastructure, and cultural values. However, thanks to the international community's support, Ukraine will liberate the occupied territories and rebuild all regions. However, it is worth developing revitalisation plans in advance and ensuring the corresponding improvement of public administration at the regional level.

To find ways to solve this problem, it is necessary to study world experience and adapt it to the conditions of our country. Yes, Germany's experience restructuring the economy and its post-crisis recovery will be helpful in Ukraine.

Considering the extraordinary destruction and economic losses due to the war with Russia, it is advisable to use Japan's experience in solving economic problems after the end of the Second World War. Characteristic features of that period are the terrible situation with providing food products, housing, unemployment, destroyed industrial enterprises, and inconveniences associated with the occupation regime. Features of Japan's natural resource potential are scarce natural resources, a small territory, and a large population.

The phenomenon of the success of the Japanese economy lies in the purposefulness of development and the ability to adapt to sudden changes in the external environment to use the opportunities that appear.

First of all, in 1950, Japan chose the option of getting out of the crisis state by developing foreign trade and setting the goal of achieving economic independence, which ensured political independence. The structure of production gradually changed. The status of key industries changed from the textile industry to the heavy and chemical industry, and then to mechanical engineering. In 1960, the task of modernising the economy was set, for the implementation of which the "Income Doubling Plan" was developed at the initiative of Prime Minister Ikeda. He envisaged an even more significant intensification of foreign trade relations, for which the heavy and chemical industry development was stimulated. Implementing plans to increase the population's real incomes by 1970 required corresponding changes in steel exports and production. It was necessary to increase exports from 3,4 billion USD to 10 billion USD, and steel production from 18 to 50 million tons. Actual achievements far exceeded the required tasks. In 1970, exports reached 20 billion dollars, and steel production reached 92 million tons. This led to the recognition by all states of Japan as a modern economically developed state (Heyets, 2003).

Changes in economic and industrial policy have always helped to solve the complex problems of the development of the Japanese economy. For example, the lack of energy resources made it necessary to import oil. But the oil crisis and the sharp increase in oil prices forced regulatory measures. Instead of raising prices - limiting the production of energy-intensive products, structural restructuring of the economy. The central place in it is now occupied not by the heavy and chemical industry but by mechanical engineering with a high share of added value: instrument building, automobile production, and the rapidly developing information industry.

To ensure positive changes in the sustainable development of Ukraine and its regions, bringing socio-economic results closer to the level of developed countries, it is necessary to attach particular importance to an active approach to the formation of an idealised image of the region's economy and the determination of ways to approach the desired results.

Setting goals and ways to achieve them is the essence of planning, and at the beginning of market transformations, a contemptuous attitude was formed. The euphoric premonition of complete freedom and deprivation of regulatory planning tasks dominated. But at the same time, enterprises have lost their orientations and are forced to master the methods of studying the external environment and adapting to its changing conditions. The state, in turn, lost one of the main levers of influence on business entities. The result of the inadequacy of both individual business entities and state management bodies to the new conditions was a decline in production, a decrease in the level of well-being of the population, and a deterioration of Ukraine's position in the world community.

To solve the problems of reviving the economy of Ukraine and ensuring its sustainable development, it is necessary to adapt the mechanism of state regulation to the changing conditions of the external environment and the risk of new shock states to find ways to direct the efforts of regions, enterprises and organisations to achieve national goals. Therefore, special attention needs to be paid to determining the role of planning in market conditions and the means of its application at different levels of management.

Fierce debates about the relationship between market and planned management mechanisms have been conducted for many decades. Proponents of providing complete freedom of the market (Adam Smith, D. Ricardo, John Stuart Mill and Naso Sr., Assar Lindbeck) argued that it performs coordinating functions like a giant computing machine (Stiglitz & Rosengard, 2015; Rozputenko & Lesser, 2004).

Countries that developed at a rapid pace in the last century achieved economic growth thanks to the active intervention of the state in economic processes. As noted back in the 50's of the last centuries, Japan concluded that the basic principles of system planning of the Soviet Union could be used "as an instrument of national regulation in the conditions of a free market economy" (Rozputenko & Lesser, 2004).

This is confirmed by the successful implementation of almost 12 national plans in the second half of the last century, the last of which was designed for the period from 1996 to 2000 and was entitled "Socio-economic plan for structural reforms – a strong economy and a problem-free life of the people". (Rozputenko & Lesser, 2004).

For various stages of economic development, the country chose the optimal ratio of the plan and the market, mobilising the efforts of individual components of the national economy to fulfil national tasks.

In Sweden, using the conceptual foundations of a planned economy made it possible to form a model of the socialist market, which ensured the rapid pace of economic development, the growth of well-being, and the satisfaction of social needs.

Thus, although in different countries, the plans differ in name, content and terms for which they are calculated, the generally recognised provision remains that effective economic policy can be carried out only when planning is combined with market self-regulation.

In market transformations, it is essential to carry out sufficiently strict regulation of transformational processes. The effectiveness of such an approach is confirmed by the experience of China, which has taken a leading position in the world in producing some types of agricultural and industrial products and has ensured a steady growth of GDP and the level of welfare of the population.

Japan and China formed investment policies that provided for the provision of benefits and credits to promising industries while restraining investment activity in traditional economic sectors. In China, foreign investments that could negatively affect the environment and the state's defence capability were prohibited (Serzhanov, 2018; Holoborodko, 2013).

To successfully regulate the transformational processes in the country, it is necessary to determine the directions of restructuring and priority measures for state regulation.

The direction of reconstruction should be determined by a consolidated decision of representatives of the authorities, business and the public. They depend on the pre-war state, the degree of destruction, and the need for balanced territorial development. After all, as a result of the military aggression that began in 2014, in the Ukrainian-controlled part of the Donbas, in the following years, a dangerous stratification of cities and districts according to economic results and incomes of the population arose. Thus, the discrepancy in the volume of industrial production per person in cities reached 91,7 times, and in districts – 64,5 times. The difference in the level of wages was 2,1 times in towns and 1,5 times in districts (Donetsk Regional State Administration, 2020), (Donetsk Regional State Administration, 2016).

The presence of disproportions in the structure of the economic complexes of the regions and the critical level of disagreement in the socio-economic development of the regions of Ukraine necessitate the need to pay significant attention to the formation and development of internal regional markets as components of the country's general internal market.

From the point of view of national security, it is necessary to take care of the maximum satisfaction of the population's needs in food products at the expense of its raw material base, even in industrialised regions. The structure of the agricultural complex must be balanced. During its construction, one must consider the need to provide the population with food products according to rational consumption norms, meet the raw material needs of food industry processing enterprises, and preserve soil fertility.

In Ukraine, according to the Ministry of Health's recommendation, the reasonable consumption rate of meat and meat products is 80 kg per year, and milk and milk products – are 380 litres. 52 kg and 341 litres are considered the minimum norms of the consumer basket under the conditions of a socioeconomic crisis (Paskhaver, 2014).

In 2020, the need for these products was met slightly more than under the minimum norms under the crisis and under rational criteria only by 74,0% in meat products and 59,0% in dairy products. At the same time, the production of both types of products significantly exceeds the need even according to rational consumption norms in the Vinnytsia and Cherkasy regions, only in meat products, the Kyiv region produces more than the need, and in the dairy – Poltava region. But for both types of products, the satisfaction of needs is low in Zakarpattya, Mykolayiv, Odesa, Rivne, Sumy, Kharkiv, Kherson, Chernivtsi, and Chernihiv regions (calculated from Verner, 2022b).

Therefore, the food security of the regions needs attention. The agriculture of Ukraine is characterised by low efficiency in the use of labour resources. The high employment of the population evidences low labour productivity in agricultural production. Thus, in 2005, the rural population was 32,3%, and 19,3% of the total population was employed in agriculture. That is, 60,0% of the rural population is engaged in agricultural production. Since 2007, the situation began to improve somewhat – the number of people employed in agriculture decreased to 16,6%, and the percentage of the rural population to 31,9. However, in 2015, the share of the rural population fell slightly (31,0%), but the number of people employed in agriculture increased even more – 21,6%. In 2020, the situation did not change significantly – the share of the rural population was 30,5%, and those employed in agriculture – was 21,25%, i.e. more than 69,0% of the rural population (Osaulenko, 2008; Verner, 2021).

At the beginning of the millennium, in Western Europe and the USA, the rural population was 20,0-25,0% of its total population, and only 3,0-7,0% of the working people were employed in agriculture (Zlupko, 2006).

The resource intensity and quality of agricultural products depend on the technical equipment of production. In Ukraine, there was a low level of specialised equipment, wear and tear on farm equipment and a heavy load on each harvesting unit. In the early years of the new millennium, each harvester served 119 hectares, while in the USA, only 25 hectares were done, in France – 12 hectares, and in Germany – 5 hectares (Mykolaychuk, M. & Mykolaychuk, N., 2013*)*. In the southern regions of Ukraine, this load reached 380 hectares (Shevchenko, 2008).

Table 8.3

Comparative characteristics of gross value added and employment in economics of Ukraine and other countries, 2019

Country	Employment structure in economy's sectors, %			Gross value added in economy's sectors, %		
	agriculture	industry	services	agriculture	industry	services
France	2,5	20,4	77,0	1,5	18,0	80,5
Germany	1,2	27,2	71,6	0,8	27,4	71,8
Italy	3,9	25,9	70,2	1,9	22,0	76,1
Latvia	7,3	23,7	69,0	4,2	19,7	76,1
Poland	9,1	32,1	58,7	2,4	29,5	68,1
Romania	21,2	30,1	48,7	4,4	28,3	67,3
Ukraine	13,8	25,0	61,2	10,4	26,3	63,3
United Kingdom	1,0	18,1	80,8	0,6	18,6	80,8

Source: (Eurostat, 2023), (The World Bank, 2020)

The number of agricultural machineries of all types in Ukraine continued to decrease. Thus, in the period from 2011 to 2015, the number of tractors per 1000 hectares of arable land decreased from 8 to 7 units, ploughs – from 2 to 1,8 units; seed drills – from 6,3 to 6,2 units per 1000 hectares of planted area; grain harvesters – from 4 to 3,5 units per 1000 hectares of grain sowing area. Over the past 20 years, the load on equipment has doubled. In addition, in terms of their characteristics, domestic machines lag behind their global counterparts in terms of productivity, environmental friendliness, material consumption, labour costs for operation and maintenance (Mykhailov, 2017).

Research by Ukrainian specialists shows that the introduction of new technologies in the processes of soil treatment and sowing will allow reducing the main costs several times, namely: operating costs by more than two times, fuel – by seven times, labour – by ten times (Kostromskyi, 2012). The defective equipment of farms with agricultural machinery and its significant wear leads to the fact that due to the malfunction of the machinery, more than 25,0% of it cannot be used. Accordingly, the cultivated areas, the quality of technological operations, and the yield of crops decrease. This may lead to the loss of Ukraine's food independence. The consequences of this for a rural state can be more destructive than from energy dependence (Kostromskyi, 2012).

Based on the ratio between the shares of industry and agriculture in GVA, regions are divided into agrarian-industrial (Chernihiv, Cherkasy, Kherson, Zhytomyr, Chernivtsi, Vinnytsia, Zakarpattya, Ternopil, Kirovohrad, Volyn oblasts) and industrial-agrarian (Donetsk, Dnipropetrovsk, Luhansk, Zaporizhzhya, Kharkiv, Poltava, Mykolayiv, Ivano-Frankivsk, Lviv, Odesa, Sumy, Rivne, Kyiv, Khmelnytskyi and AR Crimea). The relationship between industries that produce goods and provide services is also considered an essential characteristic of the territorial-industry structure. According to this indicator, the Kharkiv, Cherkasy, Kirovohrad, and Chernivtsi regions are roughly balanced. Dnipropetrovsk, Rivne, Poltava, Luhansk, Zaporizhzhya, Donetsk, and Kyiv oblasts mainly specialise in the production of goods (industrial, agricultural, construction, etc.), while Odesa and Lviv oblasts give preference to the provision of services (Ministry of Communities and Territories Development of Ukraine, 2020).

In the process of restoration and development of the economic complexes of the regions, it is necessary to form their progressive structure. At the same time, the industrialisation of agriculture should ensure the satisfaction of the population's needs for plant and animal products, the needs of the processing industry for raw materials, and export opportunities. However, the volume of agricultural products should make up only 4,0% of the total value of products and services in the future.

The main task of regions with a larger share of agriculture in the economy's structure is the rapid increase in the volume of industrial production and the sphere of services. At the same time, the industrial complexes of the regions require structural changes, and the priority directions for the development of industry and the service sector need to be substantiated. The structure of the economic complex of industrially developed regions also needs further improvement because compared to the highly developed countries of the world, they have a low share of the service sector, which provides a more significant increase in GVA than industry.

In the process of building economic complexes of the regions, care should be taken to improve the technological structure of production. After all, Ukraine's production and consumption structure corresponds to a low technological order. Almost 95,0% of technologies belong to the III and IV technological systems, the characteristic features of which are the use of main railway transport, inorganic chemistry, electric power, coal, and the development of universal mechanical engineering. Production that corresponds to the V technological system: complex computer equipment, aviation industry, software, the latest types of weapons, robotic construction, etc., occupies only 3,0-5,0% of the structure of the national economy. At the same time, world leaders are forming new industries and markets based on innovative products and the use of technologies of the VI technological system (Shynkaruk, 2015).

The structure of industrial production in economically developed countries is changing in the direction of a decrease in the share of extractive industries, the development of the manufacturing industry (especially mechanical engineering), and the production of consumer products. Based on this, the development of the internal market of goods and services must be accompanied by a structural restructuring of the economy of Ukraine, it is necessary to develop the industrial complex of Ukraine at an anticipatory pace, especially the processing industries and the service sector, in which the business and consumer sectors are distinguished.

In developed countries, positive economic consequences are ensured mainly at the expense of the business sector, primarily credit and financial services, telecommunications, and scientific research. But it is impossible to expect that Ukraine will reach the level of development of the business sector in the next 10-15 years because spending on the development of science in Ukraine from 2010 to 2017 decreased from 0,75% of GDP to 0,45% of GDP. Whereas in

Germany, Denmark, Austria, and Sweden, 3,02 to 3,4% of GDP is allocated to funding scientific research (Repko & Kasperovych, 2020).

Therefore, it is worth focusing attention on the development of the consumer sector, in particular, tourist services, which are one of the primary sources of income for many countries of the world. Tourism belongs to the economy’s profitable sectors and is the leader in terms of return on capital investments. After all, capital turnover in this industry is several times higher than the average level in other sectors of the economy. At the same time, the costs of creating one workplace in tourism infrastructure are much lower than in industry.

The development of the tourism sector has a positive effect on the consumption of products of the agro-industrial complex, promotes the development of sports and health facilities, road construction and transport, the restoration of historical, cultural and artistic monuments, the better use of natural and recreational resources, the development of intellectual and physical abilities of people by satisfying various needs (cognitive, sports and health, medical, aesthetic, etc.) The attractiveness of a country for tourists depends on its ability to provide an enjoyable and comfortable vacation.

Natural resources are the main component of the country’s tourism potential. Regarding this component, Ukraine is not inferior to countries with developed tourism. The regions of Ukraine are located in different climatic zones. They could satisfy the needs for recreation on the Black or Azov Sea and the Dnipro River and get acquainted with Europe’s most immense Oleshki Desert. The Carpathians provide an opportunity to “escape from the heat” in the summer, while in the winter, you can enjoy your vacation in Bukovel, etc. The second component of the potential is cultural attractions, museums, familiarisation with folk crafts, etc. Regions also differ in their cultural traditions. But it is necessary to preserve the cultural monuments and cultural features of the regions.

The activation of tourist flows in the regions will be facilitated by the development of promising areas of tourist activity: cruise, festival, business, railway, medical and recreational, adventure, educational, rural, wine, etc. Since the end of the last century, the demand for cruise travel has been growing, which is among the top ten trends in the world tourism market, and Ukraine was among the leaders of cruise shipping in the nineties of the last century. After all, thanks to the infrastructure of the Black Sea region of Ukraine, it was possible to organise cruise trips in the basin of the Black and Mediterranean seas, on the Danube-Black Sea route, on the Dnieper (Herasymenko, 2013).

Residents of North America prefer cruise tourism, and in recent years the number of tourists from Europe has been increasing rapidly. Cruise travel will help boost inbound tourism, which is quite profitable. In 2010, European cruises employed 307526 people and generated an income of 35,2 billion euros (with direct production costs of 14,5 billion euros). According to Peter Wild, the head of the company "P.Wild International", the average expenses of one tourist from Europe when coming ashore in the host city are about 100 euros per day. Until recently, the Odesa port passenger terminal was able to serve up to 4 million people a year (Herasymenko, 2013). So, the potential revenue from cruise tourism for port cities is very significant.

The regions of Ukraine have great potential for the development of festival tourism, which allows not only to earn significant funds but also to familiarise tourists with the peculiarities of culture, local traditions, and folk crafts. Various festivals and carnivals are now held in many countries of the world. According to the Association of Carnival Cities of Europe, 348 celebrations and festivals on the planet are among the most famous (Hrytsku Andrew, Hrytsku, 2013).

After the financial crisis of 2008-2009 in Ukraine, almost all regions intensified the work of holding festivals and fairs, which made it possible to familiarise the population of other regions and foreign tourists with folk customs, traditions, rituals, and products of folk crafts. For example, more economically developed areas with favourable natural and climatic conditions held various festivals in the Kherson region. For instance, in Bilozerka district, the folklore festival “Dnipro-Buzki vechornytsya” was held, in Henichesk – the regional festival of national minorities “Taurian Family”, in the Hola Prystan district held the All-Ukrainian festival “Kupalsky zori”, watermelon festival, fishing festival; the International Economic Business Forum, the Tavrian Games, the sailing regatta “Autumn Sails”, and the “Tomato Festival” were held in the Kakhovsky district; in Skadovsk – children’s festival “Black Sea Games”, competition of young pop artists “Future of Ukraine”, the festival of ecology and culture “Dnipro – River of Friendship”.

These events contributed to increasing the tourist attractiveness of the region, gradually turning them into festivals of an international scale.

The medical and health tourism market is promising because, in Ukraine, it is possible to provide a wide range of medical and health services due to favourable natural conditions, springs with medical water, salt mines, and salt and mud lakes. Experts note that there was a sufficient number of resort and recreation facilities in Ukraine, but the efficiency of their use was relatively low because the quality of services provided by them does not fully meet the requirements of consumers (Kraievska *at al.*, 2012).

Ukraine has an opportunity to develop adventure tourism, which is gaining popularity among high-income people. Its feature is active recreation with elements of risk. Since sports tourism is often associated with extreme situations, adventure tourism can include mountain tourism, rock climbing, equestrian tourism, water tourism, diving, paragliding, and speleotourism. There is a significant natural potential for the development of each of these types of tourism in Ukraine: many rivers (including mountainous areas), sea spaces, and mountainous regions (equipped for winter recreation and skiing). The conditions for developing speleotourism are exceptionally favourable because Ukraine is one of the world leaders in the number and variety of caves (1100). Tourists can use them for diving and climbing skills (Herashchenko & Tovstopiatko, 2013).

The development of rural tourism helps the districts’ inhabitants better understand the uniqueness of their heritage and forms a sense of pride and responsibility for it. It contributes to the creation of new jobs, raising the standard of living of the population, a revival of local cultural values, traditions, and customs, development of infrastructure, and folk art, increasing demand for agricultural products and locally produced goods, protection and restoration of cultural monuments, revitalisation of cultural life.

The comfort of rest depends on the availability of places for tourists. Ukraine has a sufficient number of hotels and similar means of accommodation, the utilisation ratio of which was 0,25 even in the pre-war year 2013 (Osaulenko, 2014).

Ukraine has unique opportunities for its establishment as a maritime state and the development of water transportation due to its favourable geographical location, natural conditions, and robust production base.

The southern part of the territory of our country is washed by the waters of the practically non-freezing Black and Azov seas, from which it has access to the Mediterranean Sea. On the Black Sea, the most important seaports are in Odesa, Izmail, Chornomorsk (formerly Illichivsk), Kherson, Mykolaiv; Sevastopol, Yalta, Feodosia, and Kerch remained in the annexed Crimea. On the Sea of Azov, the port cities are Mariupol and Berdyansk.

There are navigable rivers in Ukraine which exceed 2,4 thousand km. Among the largest water arteries are the Dnipro (1121 km long on the territory of Ukraine) with its tributaries Pripyat and Desna, Dniester – 925 km, Southern Bug – 806 km (Osaulenko, 2008).

However, to use the opportunities of its natural resource potential, it is necessary to liberate its territories from the occupiers and rebuild the destroyed ones.

The need to solve many problems requires the development of a system of regulatory measures that will ensure a balanced and safe development of the regions.

First of all, when optimising the structure of the region's agricultural sector, it is necessary to consider not only the need to meet food needs but also the prevention of negative impacts on the environment and the development of other spheres of activity. Thus, one of the problems of the development of the southern regions is the emergence of contradictions between the tourism and recreation sphere and the agricultural sector. After all, agriculture uses natural resources and significantly affects the state of the environment, recreational resources, and the population's health.

For example, rice is considered one of the leading food products for almost half of humanity. This plant is attractive because it can be grown on infertile, saline lands. However, it is necessary to equip particular flooded areas for it. Research by specialists shows the quick payback of rice irrigation systems and the high profitability of this crop, which exceeds the profitability of grain crops by 8-10 times (Mykolaichuk, 2021).

The negative consequences of the development of straw sowing are the deterioration of soil quality due to the use of large doses of mineral fertilisers and the reduction of humus content. Flooding allows you to wash away saline soils, but at the same time, the mineralisation of groundwater increases by 5-10 times. During the discharge of drainage water from rice systems, salts and other components of the soil environment are also removed. Up to 25-30 tons of salts are leached from each hectare per year (Mykolaichuk, 2021).

In addition, rice seeding zones are mainly located on the territory of recreational resources, which leads to pollution of the water area of the Black and Azov seas with discharge waters. This requires the improvement of rice cultivation technology and the development of a system of regulatory measures. The experience of the rice-growing countries of the world, in particular Japan, China, and the USA, shows the possibility of removing contradictions due to the location of rice crop rotations in recreational zones due to the use of intensive technologies and the establishment of strict requirements for landowners and the technical condition of rice irrigation system (Mykolaichuk, 2021).

Given the need to provide the world's population with food products, Ukrainian researchers note that no country in the world can become economically developed and ensure a long life expectancy, the health of the nation if the village does not "prosper" and the peasant will be poor and loses the will to live and work in rural areas (Davis *at al.*, 2002*)*.

It should also be considered that people want to live in an ecologically clean environment, breathe clean air, and use environmentally clean products.

The development of rural areas significantly affects not only the regions' food security but also the state's global competitiveness. For example, in 2013, when assessing countries' global competitiveness, the "Effective Management" Foundation, with the support of the World Economic Forum, also evaluated their regions. The lowest level of competitiveness was in the regions of Ukraine with agricultural specialisation: Zhytomyr, Kirovohrad, Ternopil, Kherson and Chernihiv regions (Foundation "Effective Governance", 2013).

Rural areas are unable to provide employment for local residents. Therefore, 54,9% of the rural population of Ukraine works in urban-type settlements, cities or abroad (Borshchevskyi, 2012). This leads to the depopulation of villages, an increase in the number of small settlements with fewer than 49 people, and the destruction of social infrastructure. More than 65,0% of rural settlements do not have preschools, and 55,0% do not have schools. Moreover, the situation in different regions differs significantly regarding the density of rural settlements. Thus, in the Lviv, Ivano-Frankivsk, Ternopil, and Khmelnytskiy regions, there are more than six villages per 100 square kilometres, and in the Kherson, Odesa, and Zaporizhzhya regions – only 2-3 villages each (Kraevska, 2015). It is difficult for residents of rural areas to get quality education and necessary medical services. Therefore, personnel potential and its practical use are of great importance for developing the agricultural sector.

Currently, the development of non-agricultural types of activities in rural areas is becoming a general trend worldwide, which prevents the "extinction of villages" due to the lack of employment opportunities for the local population and forced migration. The state agricultural policy is also changing significantly to the new rural paradigm.

Western agrarian economists prove that agriculture can compete with other branches of the economy. The development of entrepreneurial activity allows farmers to independently support agricultural business at the expense of income from other types of activities, making it possible to combine the advantages of living in the countryside and eating fresh, ecologically clean products with receiving the entire range of modern services. This is confirmed by foreign experience, which shows that at the beginning of the 21st century, households in many countries in rural areas received a significant share of income from non-agricultural activities, in particular in Africa – 42,0%, South America – 40,0%, Asia – 32,0% (Davis *at al.*, 2002).

It is impossible to ensure the economic development of rural areas without the necessary personnel potential. To implement the tasks of forming the human capital of the rural regions, it is required to provide these areas with medical personnel and highly qualified teachers, and specialists who can solve the strategic tasks of the development of the regions.

Among the levers of influence on the formation of human capital in rural areas, it is possible to note the shape of a state order for training specialists with mandatory work experience of at least three years in a particular territory. It should be taken into account that it is difficult for graduates of rural schools to compete with graduates of schools in large cities to obtain the right to receive education with budget funds. Therefore, it is noteworthy that the crediting of graduates of rural schools to get the speciality necessary for the development of the territory initiated in the Kherson region. If the terms of the contract are fulfilled, it is possible not to return the loan.

Professional personnel training for small agricultural productions, which mainly use the labour of family members, deserves special attention. According to statistical data, such households make up the vast majority (65,0%). These farms are characterised by conservatism and the absence of a complex system of organisational, economic and production relations. They need to acquire theoretical knowledge and practical skills in the show, storage, and sale of certain types of products. Therefore, the proposal regarding the formation of a system of 1-2 year special courses with the provision of the qualification “Producer” or “Manager” deserves attention (Yeremenko, 2015).

Naturally, the successful development of rural areas is possible only under the formation of human capital capable of developing and implementing strategic development plans. The components of human capital are knowledge, skills, health, life expectancy, and work motivation. The role of the regional government in the formation of human capital consists in determining the need for specialists of various specialities, stimulating the acquisition of education in certain specialities, and working in a speciality in certain rural areas.

It is quite evident that the state of Ukraine’s economy depends significantly on the efficiency of the economic activity of the regions. But, unlike enterprises, where production processes and profit generation are subject to control and the management can use a variety of regulatory measures, the levers of influence on the components of the economic complex of the region are limited by regional management bodies.

The success of managing economic processes in the region depends on trust in the authorities establishing a partnership between all interested groups: representatives of the authorities, businesses, scientists, and the public. At the same time, the formation of a positive image of the region, the creation of conditions for residents to feel care for their fate, and pride for their “Little Motherland” is of great importance.

Given the general desire to accomplish the almost impossible, despite all troubles and obstacles, to achieve the audacious goal of ensuring the sustainable development of the region by world standards, the main task of regional management becomes the formation of development goals, justification of ways to achieve them, and stimulation of the activities of business entities with available means, aimed at the implementation of strategic tasks of the region.

A stimulating role can be played by detailed comparative information about the main results of the development of regions, especially their financial aspects, desired results.

The main goal of managing financial resources and results at the regional level is to ensure the region’s self-sufficiency in financing sustainable development. The complexity of its implementation is due to the limited direct influence on business entities that generate financial results.

In Ukraine, due to the riskiness of long-term lending, it will not be enough to use the current investment opportunities of banks. Therefore, it is worth creating favourable conditions for investing in the implementation of strategically important projects by preferential taxation of banks. Additional “locomotives” of economic growth can become financial and industrial groups (FIG). The creation of a FIG can be carried out in different ways: based on a voluntary association with or without registration of mutual obligations, acquisition by one of the group participants (enterprise or bank) of shares of other participants, administrative decisions of the Government or local authorities (Rozputenko, 2001; Davis *at al.,* 2002).

In the development of the economy of many countries of the world, clusters play a significant role, which helps to unite the efforts of entrepreneurs, scientists, authorities, and the banking sector in ensuring the competitiveness of production and regional and national economies.

An essential prerequisite for developing the domestic market and optimising its structure is the provision of resources for the production of priority products. Therefore, state regulation should be aimed at a coordinated solution to the problems of increasing exports and ensuring domestic needs in various types of products. From the point of view of national security, it is necessary to stimulate the implementation of such processes that will ensure sustainable positive changes in the development of the internal market of goods and services, obtaining a synergistic effect. For example, machine-building enterprises must be provided raw materials supplied by their metallurgical industry. Ukraine was one of the top ten metal producers, which in 2015 accounted for 80,0% of world production volumes. However, regarding these products per capita consumption, Ukraine significantly lagged behind many countries. In the pre-war year 2013, consumption was 123,4 kg/person. However, it was only 56,6% of the world's average consumption, 44,7% – in EU-28 countries, 29,5% – in Turkey, 26,8% – in Germany, 23,2% – in China, 11,7% – in South Korea (Ministry of Communities and Territories Development of Ukraine, 2020).

The low level of consumption is due to insufficient production volumes and the raw material orientation of exports without considering the need to meet the needs of the domestic market primarily. Therefore, the development of the metallurgical branch should be regarded as one of the main factors in developing the entire industry and ensuring the sustainable development of the country's economy. And state regulation should contribute to introducing the latest technologies and increasing the efficiency of metallurgical production by reducing the resource intensity of products, emissions of harmful substances, improving productivity and labour safety, immediate satisfaction of the needs of the domestic market, the creation of clusters in which metallurgical production will become a component of the chain between the extractive industry and industrial enterprises that supply modern equipment for various spheres of activity; export of high-tech products. At the same time, the export of raw materials should become economically unprofitable.

In the world economy, the chemical industry plays an important role, the products of which are necessary for the development of the economy of Ukraine and should be classified as strategically essential resources. After all, the chemical industry not only supplies raw materials and semi-finished products for many sectors of the economy but also significantly affects their competitiveness and promotes the activation of innovative processes. Therefore, over the last decade, annual production volumes in the world economy have increased by 2,3 times, and in China – by 8,1 times. The strategic task of the development of the chemical industry in this country is self-sufficiency in chemical products and the formation of a base for export growth (Vishnevskiy, 2016).

In Ukraine, the import of chemicals and chemical products in 2015 exceeded the export by 2,3 times, and in 2021 – by 3,4 times. At the same time, the commodity structure of export has a raw material focus. In addition, the monopolisation of basic sub-sectors, and the use of offshore schemes, according to which Ukrainian enterprises turn into centres of costs and losses, negatively affect the agricultural sector, which is forced to import products (Verner, 2022b; Vishnevskiy, 2016). Therefore, it is urgently necessary to solve the problems of the industry's modernisation and create prerequisites for its innovative development.

In many countries, the mechanism of cluster development is used to support the chemical industry by creating special economic zones based on clusters. It is one of the main factors in developing the chemical industry of China, Germany, and Poland (Vishnevskiy, 2016).

In current conditions, the socio-economic achievements of various countries increasingly depend on the available human capital, the primary value of which lies in the ability to create and spread innovations. At the same time, to ensure the region's development, more than the number of people and their health and specific professional training are essential. That is, at the regional level, it is necessary to form "personnel potential", which, in contrast to human capital, determines the ability of the working population not to solve complex tasks in general but specifically to the purposeful implementation of the strategic goals of the region.

State regulation should encourage the population to learn and entrepreneurs to spend money on training employees. The solution to the first problem will be facilitated by the formation of a particular public opinion on the promotion of such qualities of people as good physical shape, comprehensive development, punctuality, honesty, hard work, rich imagination, speed of decision-making, balance and, at the same time, readiness to take risks.

It is possible to stimulate employers to invest in human capital development by establishing partnership cooperation between government structures and businesses, external control by public councils, and certification of management personnel of enterprises and organisations. Not having the right to interfere directly in the economic activities of enterprises and organisations, the regional government can turn the community into a powerful driving force for effective development. It is essential to involve the human and information factor to give impetus to the development of the competition in using one's own creative potential to improve life to show the real possibilities of achieving high results in sustainable development.

At the state level, economic independence lies in the possibility of exercising control over the country's resources, equal participation in international trade, and the use of competitive advantages of the national economy. Accordingly, at the regional level, economic independence is embodied in the ability to control the use of regional resources, realise competitive advantages, and attract capital for developing the regional economy.

The task of ensuring economic security must be solved systematically because a crisis situation in one region can pose a significant threat to the development of the entire country's economy. Therefore, despite ensuring a certain independence of the regional economy, it is necessary to take care of economic interaction with other regions for the sake of the country's general security.

Conclusions

The increase in the number and strengthening of the effect of external crisis phenomena makes it necessary to strengthen state regulation for the security of the region's development. The main challenges that hindered the sustainable development of Ukraine in the new millennium were the global economic crisis, military aggression by russia and the COVID-19 pandemic. The global financial crisis significantly impacted the development of industrially developed regions of Ukraine with metallurgical production. The pandemic mainly affected the development of tourism in all regions. The population and economy of Ukraine suffer the most from russia's military aggression, which has turned from a hybrid to a full-scale war.

The military actions of 2022 led not only to the destruction but also to the destruction of settlements, infrastructure facilities, economic complexes, and cultural monuments, causing significant environmental damage. However, the war united a society confident in its victory and striving to implement development according to the best world standards. This process must be managed, and its success depends on the partnership interaction of the government, business and the public, the availability of management personnel capable of leading the development of strategic plans and finding levers of influence on the factors of their implementation.

To ensure the self-sufficiency of regions in sustainable development, structural restructuring of their economic complexes is necessary. In Ukraine, the share of agriculture is too large, which is characteristic of countries with low socio-economic development. However, agriculture is the basis of food security not only in Ukraine but also in many countries of the world that rely on agricultural products from Ukraine. Therefore, agriculture should continue to develop in all regions. Still, the structure of agricultural production needs to be optimised given, providing various products according to rational consumption standards, preserving soil fertility, and reducing the negative impact on the environment. It is necessary to increase the efficiency of agriculture due to the use of intensive technologies, modern equipment and human resources. From the point of view of the security of the region's development, it is necessary to pay considerable attention to the development of rural areas, providing their residents with work and services.

Correspondence to the structure of economic complexes of developed countries should be achieved by anticipatory development of industry and the service sector. Among the factors influencing the safe development of regions, the technical renewal of industrial production and structural changes in it are essential. The priority should be developing processing enterprises and producing science-intensive products of the V and VI technological systems.

Considerable attention should be paid to the structure of foreign trade.

One of the main tasks of the authorities at the regional level is to stimulate investments in the implementation of strategically important projects for the regions.

The internal market's development contributes to the country's and its regions' safe development. In Ukraine, preference is given to exporting raw materials and importing products from them. Therefore, it is essential to make it more profitable to meet the needs of the domestic market than to export. This especially applies to metallurgical production and the chemical industry.

A significant role in the development of the service sector is played by tourism, which is connected with the use of services and products by more than 50 branches of the economy. Tourism development contributes to the population's employment, national economy diversification, and cultural potential preservation and development. Ukraine has sufficient natural resource potential for the growth of this industry. To ensure the sustainability of tourism in Ukraine, it is necessary to develop domestic tourism and appropriate transportation.

One of the great factors in the revival and sustainable development of the regions of Ukraine is the political support of the EU countries in curbing the further expansion of military aggression by russia. However, the support of Ukraine guarantees the safe development of the EU countries themselves because, in case of unwillingness to jointly defend the legal principles of international relations in the globalised world, the situation with Ukraine may repeat itself with each of the European countries.

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CONCLUSION

Socio-economic systems are formed by a set of interconnected elements (population, resources, phenomena, relations, processes, etc.), the interaction between which leads to the emergence of a qualitatively new integrity. Depending on the environment and management levels, a socio-economic system can be an association of countries, states, administrative-territorial units, industries, markets, institutions, enterprises and economic entities. In order to define an object as independent socio-economic system, certain systemic features are required. Each socio-economic system has its own system parameters that determine the possibility of managing it. The difference between socio-economic systems and others is their artificiality, complexity, temporality and openness, which requires a conscious approach to the management mechanism.

The main globalization challenges include: further exhaustion of limited economic resources, deepening of the environmental crisis, financial market crisis, aggravation of the crisis of global economic regulation, demographic imbalance and migration processes, ensuring energy and food security, growing inequality and health risks, national security, etc. Under the influence of globalization challenges, the management of socio-economic system is carried out through targeted action on certain object in order to change its state or behaviour due to changing circumstances, which is carried out to achieve certain goals. The peculiarity of modern management of socio-economic systems is the possibility of full and partial, remote and direct management, structural and unstructured management, self-management and combined management.

The results of the authors' research in the scientific monograph are devoted to solving problems of confronting globalization challenges, national security of countries and individual sectors of the national economy, financial management of socio-economic systems, the effectiveness of the functioning of socio-economic systems through marketing and logistics, regulation of migration processes and improve labour potential management, introduce innovations and information technologies, address the environmental problems of food security, sustainable regional development, ensure national and international security.

The research results presented in the scientific monograph reflect the theoretical, methodological and practical aspects of managing socio-economic systems through the formation of mechanisms to improve the competitiveness and activities of economic entities, security models and development of public-private partnerships.

The research found that e-commerce helps to reduce operating costs, increases investment returns, improves business efficiency and profitability, ensures the efficiency of business processes, and improves the quality of service and customer loyalty. An important tool for determining the strength of competition restrictions is the calculation of market shares and measurement of concentration. The necessity of developing a strategic plan for the development of the company's international activities is substantiated.

The research show that the development of the global risk insurance market should be carried out through deposit insurance, geopolitical risk insurance, directors and officers liability insurance, and cyber insurance. The author's approaches to overcoming current globalization challenges are also based on the need for public funding of a wide range of programmes aimed at supporting business competitiveness, ensuring the living standards of citizens, and carrying out comprehensive reforms aimed at updating the economic system as a whole. In research substantiates the strategy of ensuring bank security, which is aimed at reducing the impact of destabilising factors on the security status, taking into account the intensity of their action at each stage of the life cycle of a financial institution.

The research of the management of socio-economic systems in the terms of globalization challenges using marketing and logistics tools shows that it is necessary to create and develop a common railway infrastructure for the European region, ensure the efficiency of international connections, eliminate administrative and technical barriers, and introduce digital technologies. The development of the transport sector in individual countries should be ensured through alternatives to conducting its activities, including the expansion of the company's operations in a foreign country with a more favourable geographical and tax situation, and the employment of third-country nationals. In order to ensure efficiency in logistics, the authors suggests inter-company cooperation and development of strategies for horizontal and vertical partnerships. The authors also points out the need for marketing research to optimise the marketing efforts of entrepreneurial business and competitiveness management.

The research show that the negative effects of migration processes on labour potential are primarily related to its quantitative aspects and are based primarily on the loss of human potential of the country and, as a result, the decline of certain sectors of the economy that have lost labour, as well as the devaluation of traditional family values and the decline of national identity culture in general. There is a need to develop and implement a strategy for the formation of labour potential and its development. An important element in the migration process is socialisation at the company level. The study suggests the need to update the concept and strategy for improving the efficiency of the vocational education system aimed at increasing the competitiveness of the national labour potential and economy, globalisation of standards and practices in economic and non-economic spheres of life.

The research found that innovations and digital technologies help to reduce the negative impact of globalization challenges and increase the efficiency of management of socio-economic systems. Thus, the digitalisation of business processes of trade enterprises ensures an increase in the efficiency of sales of goods, improvement of service, optimisation of logistics operations and costs, expansion of the geography of goods promotion, reduction of price pressure, growth of sales revenue, and rational use of enterprise resources. The use of information technologies has led to an increase in the automation of the accounting process at enterprises, increasing the impact of the computerised accounting system on the accuracy and completeness of the information generated in the reporting. The use of modern software products has made it possible to build a structural model of the relationship between the perception of the quality of medical care, its components and loyalty, mediated by patient satisfaction.

In the scientific monograph the authors point out the need to ensure food and environmental security. For this purpose, it is proposed to develop organic agricultural enterprises, establish sustainable agricultural cooperation and joint sales of organic products, and form a national system of certification and quality control of agricultural products. It is established that countries such as Poland, Lithuania and Romania have provided diversified logistics channels for the export of Ukrainian agricultural products to their ports on the Baltic and Black Seas. Adopting the best practices of Sweden and Estonia will help to ensure the right to access environmental information in Ukraine.

When studying the regional peculiarities of managing socio-economic systems, it should be noted that the use of cooperative forms of management will contribute to the development of effective business models in the terms of globalization challenges. The use of territorial marketing tools will ensure the effective functioning and development of territorial communities. The concept of sustainable development of amalgamated territorial communities should be implemented through environmental protection, innovative development, and improved safety and comfort of the population. Various paradigms for the implementation of management compositions through the creation of clusters have been proposed for regional economic systems. Implementation of public-private partnerships in the healthcare sector should be carried out through modernisation of tax and transfer policies, increasing the share of productive employment and reducing poverty in the country, enhancing the effectiveness of social protection, technical and technological reorganisation of production.

In order to ensure the security of socio-economic systems, the authors propose mechanisms for the protection and development of critical infrastructure, overcoming the threats of chemical pollution to ensure food and environmental safety. Strengthening the state regulation of regional development security should be carried out through partnerships between the government, business and the public, and the availability of management personnel capable of leading the development of strategic plans and finding levers of influence on the factors of their implementation. To ensure self-sufficiency of regions in sustainable development, it is necessary to restructure their economic complexes.

In general, the authors of the scientific monograph are convinced that under conditions of globalization challenges, each socio-economic system requires a specific mechanism or model of management that will ensure the efficiency of the functioning of the object and ensure its sustainable development.

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