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Багатофакторна модель оцінки інвестиційної привабливості підприємства

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Анотація. Важливість оцінки інвестиційної привабливості безпосередньо для інвесторів полягає в тому, що аналіз підприємства та його інвестиційної привабливості дозволяють мінімізувати ризики капіталовкладень. У сучасній літературі вирізняють різноманітні методики аналізу й оцінки інвестиційної привабливості підприємства, проте єдиної загальноприйнятої універсальної системи оцінки не існує. Недоліком більшості методик є оцінка лише фінансових показників, таких як: рентабельність, ліквідність, оборотність активів тощо, не враховуючи фактори інвестиційної привабливості країни та регіону, а також показники привабливості та динаміку розвитку галузі функціонування підприємства. Для комплексної, об'єктивної оцінки необхідно починати з оцінювання макропараметрів, після чого переходити до аналізу показників, які безпосередньо стосуються діяльності підприємства. Новизною статті є розробка багатофакторної моделі оцінки інвестиційної привабливості організації будь-якої форми власності, що враховує особливості держави, регіону та галузі діяльності підприємства, а також системи економічних і не економічних показників щодо безпосередньої діяльності організації. Дослідження таких показників як: стабільність політичної ситуації в країні, загальнодержавний рівень трудової міграції, стабільність державної валюти, рівень освіти та безпеки в регіоні, легкість ведення бізнесу, рівень офіційної зарплати, а також показники фінансового стану підприємства, рівень ділової репутації та імідж його керівництва тощо, роблять методику повною та багатопараметричною. Також запропонований набір показників методики створює універсальний метод оцінювання інвестиційної привабливості підприємства, що може бути застосований незалежно від форми власності організації, її розміру та сфери діяльності. Для більшої об'єктивності в роботі запропонований рейтинговий метод оцінки інвестиційної привабливості підприємств, а бальна система оцінювання показників забезпечує легкість інтерпретації результатів

Ключові слова: інвестиції, інвестиційний клімат, інвестиційна привабливість, показники оцінки інвестиційної привабливості

Multifactor Model for Assessing the Investment Attractiveness of the Enterprise

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Abstract. When it comes directly to investors, the importance of assessing investment attractiveness lies in the fact that the analysis of the enterprise and its investment attractiveness allows minimising the investment risks. The modern literature distinguishes various methods of analysing and assessing the investment attractiveness of an enterprise, but there is no single generally accepted universal assessment system. The disadvantage of most methods is the assessment of solely financial indicators, such as profitability, liquidity, asset turnover, etc., without consideration of the investment attractiveness factors of the country and region, as well as indicators of attractiveness and dynamics of development of the industry where the enterprise in question operates. For a comprehensive, objective assessment, it is necessary to start with macroparameters, and then proceed to the analysis of indicators that directly relate to the company's activities. The originality of this study is the development of a multifactor model for assessing the investment attractiveness of an organisation of any form of ownership, considering the specific features of the state, region, and industry of the enterprise, as well as a system of economic and non-economic indicators for the direct activities of the organisation. The methodology becomes complete and multi-parameter through the study of indicators such as stability of the political situation in the country, national level of labour migration, stability of national currency, level of education and security in the region, ease of doing business, level of official salary, as well as financial position of the enterprise and the reputation of its management, etc. In addition, the proposed set of indicators creates a universal method for assessing the investment attractiveness of an enterprise, which can be applied regardless of the form of ownership of the organisation, its size and scope of activity. For greater objectivity of this study, the authors propose a rating method for assessing the investment attractiveness of enterprises, and a point system for evaluating indicators simplifies the interpretation of the results

Keywords: investment, investment climate, investment attractiveness, investment attractiveness indicators

Introduction

In modern market conditions, most business entities are described by a high degree of competition. Under such circumstances, to maintain their positions, Ukrainian enterprises need to develop, expand sales markets, improve a product or service, master new technologies, etc. This necessitates the attraction of investment that gives the organisation competitive advantages and the opportunity to take a leading position in the market.

In the Ukrainian scientific literature, numerous studies cover the issues of analysing and evaluating the investment attractiveness of an enterprise. For example, in his study, I.O. Karkich considered the investment attractiveness of the regions of Ukraine [1]; T.S. Ovcharenko investigated methodological approaches to determining the investment attractiveness of industries [2]; S.M. Khalatur analysed the attractiveness of the agricultural sector considering risk factors [3], and K.H. Kolyada, I.A. Nechaeva and T.V. Pulina proposed an original methodology for assessing the investment attractiveness of IT companies using stock analysis indicators and an integral indicator of investment attractiveness [4], etc.

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The relevance of this study lies in the fact that a high indicator of investment attractiveness of an enterprise contributes to attracting capital investments to it, which allows ensuring the effective operation and development of the organisation, creates an opportunity to expand sales markets, improve a product or service, master new technologies, etc. Modern methods do not make it possible to comprehensively assess the investment attractiveness of an enterprise, since they focus mainly on indicators of the financial position of the organisation.

The originality of this study lies in the improvement of the methodology for assessing the investment attractiveness of an enterprise, which is based on criteria and indicators that consider not only the financial indicators of the organisation, but also the features of the operation and development of the country, region, and industry.

The purpose of this study is to improve the available methods for assessing the investment attractiveness of an organisation.

In the course of the study, the following *tasks* were performed:

– the essence of the terms "investment" and "investment attractiveness" is defined;

– the main criteria and indicators for assessing the investment attractiveness of an enterprise are investigated;

– methods for assessing the investment attractiveness of a country, region, industry, or enterprise are considered;

– an improved methodology for assessing the investment attractiveness of an enterprise is proposed.

Methodology

The information basis of this paper included studies of Ukrainian and foreign specialists who investigated the problems and issues of investment attractiveness; electronic sources on investment management, regional economy and marketing; regulatory documents: orders of the Ministry of Justice of Ukraine, laws of Ukraine, orders of the Cabinet of Ministers of Ukraine, etc.

The tasks set in this paper were solved using the following general scientific and special methods: the method of system analysis (upon researching various methods for assessing investment attractiveness, as well as upon establishing structural connections between evaluation criteria), the method of theoretical generalisation and abstraction (upon formulating conclusions and summarising the obtained scientific results). Based on the dialectical approach, the study comprehensively covered the provisions on investment activity, as well as scientific results on assessing the investment attractiveness of business and other types of activities. The authors used tabular and graphical techniques to visually present and display the results of this study, as well as the theoretical provisions of the problem under study.

The study also employed empirical methods of research and analysis (comparison, measurement), as well as the method of expert assessments. For example, the paper compared the approaches of different authors to the definition of the term "investment"; compared the approaches of A. Gutorov and I.A. Blank to the definition of the term "investment attractiveness of an enterprise"; compared the various specialists' methods and factors of comprehensive assessment of the investment attractiveness of organisations, etc. The method of expert assessments enabled the authors of this study to investigate and identify the main factors of macro-, meso- and microlevel of investment attractiveness of the enterprise, and study the weight of each of the indicators. Consequently, the proposed indicators were ranked according to their importance and the degree of influence on the investment attractiveness of the organisation.

Results and Discussion

The essence and characteristics of the investment attractiveness of the enterprise

There is no single definition of the term "investment" in the economic literature. Various approaches to the interpretation of the term are presented in the Table 1:

Table 1. Comparison of modern approaches to the definition of the term "investment"

No.	Source	Interpretation
1	Law of Ukraine "On Investment Operations" [5]	All types of property and intellectual values invested in objects of entrepreneurial and other types of activities, as a result of which profit (income) is generated and/or a social and environmental effects are achieved
2	Tax Code of Ukraine [6]	Business transactions involving the acquisition of fixed assets, intangible assets, corporate rights and/or securities in exchange for funds or property

Table 1, Continued

No.	Source	Interpretation
3	Financial and Economic Dictionary [7, p. 64]	Long-term investments to create new and modernise the available enterprises, develop the latest technologies and new equipment, increase production and make a profit
4	Terminological dictionary on preventing and countering money laundering [8, p. 299]	Long-term investment of capital in any enterprise for making a profit
5	I.O. Blank [9, p. 442]	Investment of capital in all its forms in various objects (instruments) of its eco-nomic activity for making a profit, as well as achieving an economic or non-economic effect. That is, any other useful effect, the implementation of which is based on market principles and is associated with factors of time, risk, and liquidity
6	I. A. Nechaeva [10, p. 105-106]	Investment of tangible and intangible resources in non-current assets, the implementation of which is based on market principles and is associated with time and risk factors to obtai a future economic effect and increase public welfare

Source: compiled by the authors according to [5-10]

The authors of this study propose the following definition of the term "investment" – a long-term investment in objects of entrepreneurial and other types of activity to make a profit and achieve an economic or social effect.

For investors, the priority upon investing is the realisation of their economic interests, that is, making a profit. Direct assessment of investment attractiveness is performed by investors upon decision-making on the feasibility of investment or the choice of alternative objects.

To reliably assess the investment attractiveness of an organisation, it is necessary to use a systematic approach: analysis of the investment attractiveness of the country – analysis of the investment attractiveness of the region and/or industry – assessment of the investment attractiveness of the enterprise in question. Thus, the investment attractiveness of an organisation is determined in four stages: at the level of the country, region, industry, and individual company. Using this sequence, investors can choose the most promising enterprise for the implementation of an investment project and receive the planned profit on the invested capital.

Investment attractiveness of a territory (country, region, city) is a set of factors and conditions that contribute to or hinder attracting investment at a particular time to a particular territory [1, p. 89]. There are many different methods for assessing the investment attractiveness of a country. One of the most common is the World Bank's Investment Climate Survey methodology, which examines indicators of the legal and judicial environment, corruption, corporate governance, etc. (Table 2) [11, p. 23-24]:

Table 2. World Bank's Investment Climate Survey Methodology

No.	Category	Indicators
1	Legal and judicial environment	Fairness, impartiality, and legality of judges' sentences; effectiveness of legal support of court decisions; level of protection of private property; predictability, adequacy of business legislation; protection of intellectual property rights; term of resolution of contract disputes; level of crime and security of the public, business
2	Corruption	The level of corruption in the judicial system; the level of ensuring anti-corruption measures; the level of administrative corruption (on the part of officials who demand additional payments and bribes); the level of corruption in private business and raiding enterprises

Table 2, Continued

No.	Category	Indicators
3	Financial sector	Difficulties in securing long-term loans; level of interest rates
4	Economic stability	The level of devaluation of the hryvnia; the level of taxes and compliance with their payment; the level of inflation
5	International trade and capital movement	Ease of movement of funds in the country and abroad; difficulties in obtaining and calculating in foreign currency; amount of documentation, time, and costs for free export with institutional support; difficulties with customs procedures; import tariffs; barriers to export, import
6	Corporate governance	Transparency and accessibility of information to the public; ease of contacting and receiving feedback from management; availability of laws and regulations on corporate governance; social responsibility of enterprises; completeness of reporting for shareholders
7	Public management and administration	Stability, transparency of public policy; professionalism and competence of government officials; the role and functions of government with the intervention of state-owned enterprises in the market; ease of access to employees to solve problems; timeliness and quality of public services; cost of communications and IT
8	Business deregulation	Unfair market competition of firms supported by officials; regulation of business operations and the number of audits and inspections; ease of closing the business; ease of registering the firm and obtaining construction and other licences; availability of skilled labour at low wage costs; availability of difficulties, restrictions in hiring or firing employees
9	Political risks and territory reputation	Reputation of the country; stability of the political system and the level of rotation of officials; uniformity of income distribution; level of military security; risks of expropriation, nationalisation

Source: compiled by the authors based on [11, p. 23-24]

The success of an investment project depends on the conditions of a particular territory and its specific characteristics. The State Agency for Investment and National Project Management, based on its own development, conducts a rating assessment of the investment climate and investment attractiveness of the regions of Ukraine (Table 3) [12; 13; 14, p. 340-346].

Table 3. Methodology for assessing the investment attractiveness of the regions of Ukraine of the State Agency for Investment and National Project Management

No.	Indicator	Value	Weight, %
1	Supply of natural resources to the region and quality of the regional environment	Availability of the main types of natural resources in the region; the level of environmental pollution; the possibility of processing industrial waste	10.7
2	Labour resources	The number of economically active population; the level of employment and unemployment; the volume of supply of skilled labour	13.1
3	Regional infrastructure	Level of development of transport, energy, telecommunications, housing, and financial infrastructures	16.4
4	Regional internal market	Scale of retail and paid services sectors; disposable income and purchasing power of the region's population	15.2

Table 3, Continued

No.	Indicator	Value	Weight, %
5	Production potential of the regional economy	Aggregate results and features of economic activity of enter-prises already operating in the region: volume and dynamics of production, size of assets, their quality and efficiency of their use	16
6	Institutional environment and socio-political stability	Expert assessment of the effectiveness of regional legislation governing interaction between the government and investors; expert assessment of the favourability of regional tax legislation (availability of tax benefits and the possibility of obtaining them); the level of social and criminal tension in the region	14.3
7	Financial stability of the regional budget and regional enterprises	State of public finances in the region (amount of tax revenues, budget balance, regional public debt), as well as assessment of the financial situation of regional enterprises (profitability (un-profitability) of firms, state of accounts payable and receivables of organisations, availability of investment resources)	14.3
Total			100

Source: compiled by the authors based on [14, p. 340-346]

As noted above, for a comprehensive and complete assessment of the investment attractiveness of an enterprise, it is necessary to analyse the industry where the company in question operates. This need is explained by the impact of industry specifics on the financial and investment cycles of the organisation, sources of financing and resource potential.

Investment attractiveness of individual sectors of the economy is a complex feature of individual economy sectors from the standpoint of the efficiency of choosing enterprises of the given industry for investment. At present, there is no single methodology for assessing the investment attractiveness of individual economy sectors, and therefore investment scientists suggest analysing various groups of indicators that depend primarily on the purpose of investment. For example, T.S. Ovcharenko and A.A. Stepanova distinguish the following criteria for assessing the investment attractiveness of the industry:

- degree of national support;
- social significance of the industry;
- efficiency of production activities;
- investment efficiency;
- significance in the economy of the country and region;
- resilience to economic downturn;
- profitability of the industry [2, p. 686].

A special feature of S.M. Khalatur's study is the consideration of risk factors (Fig. 1) [3, p. 60]:

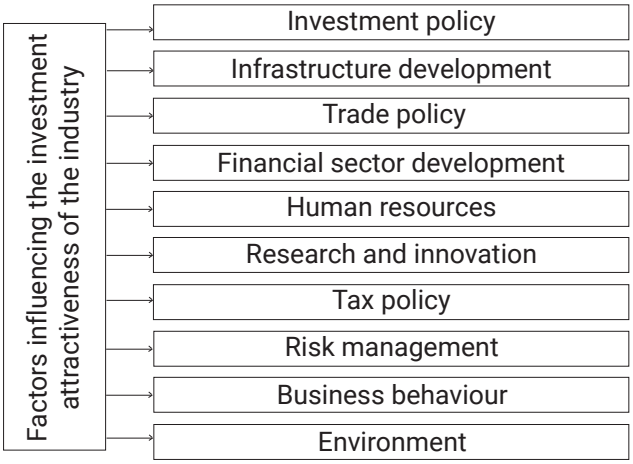

Figure 1. Factors influencing the investment attractiveness of the industry
Source: compiled by the authors based on [3, p. 60]

There is no single interpretation of the investment attractiveness of an enterprise. According to A. Hutorov, the investment attractiveness of an organisation as a potential investment object is determined by investors in the process of:

– determination of the feasibility of capital investments (new construction, expansion, technical re-equipment, etc.);

– choice in purchasing alternative properties;

– purchases of shares of individual enterprises [15].

I.O. Blank considers investment attractiveness from the standpoint of the financial condition of the enterprise as an integral characteristic of individual firms – objects of possible investment in terms of development prospects, asset utilisation efficiency, their liquidity, solvency, and financial stability [16]. Thus, investment attractiveness is a complex indicator that describes the feasibility of investing in a separate object from the investor's standpoint [17, p. 228]. This is an indicator that characterises the financial and economic condition of the enterprise, the efficiency of management activities, innovation potential and development prospects. It is an integral characteristic of the internal and external state of the organisation as a potential investment object.

Methodological approaches to assessing the investment attractiveness of an organisation

One of the most common methods for assessing the investment attractiveness of an enterprise is the integrated assessment methodology developed by the Agency for Preventing and Countering Bankruptcy of Enterprises, according to which indicators are divided into six groups (Fig. 2) [18]:

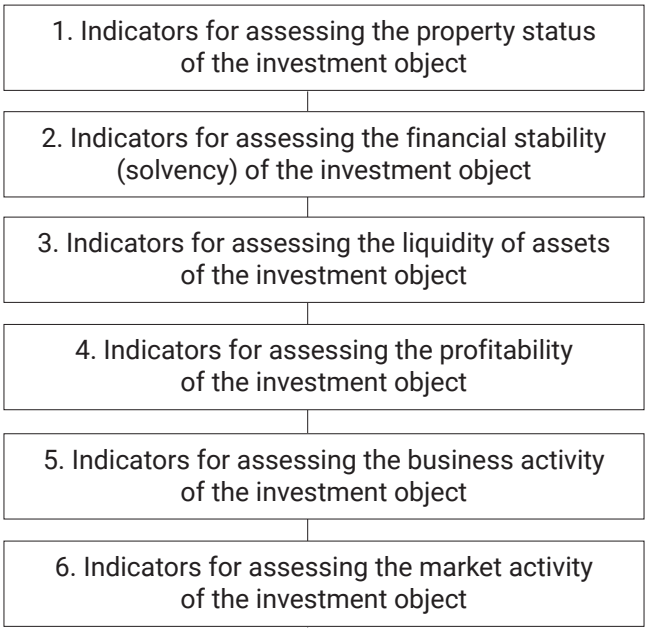

Figure 2. Main groups of indicators of the methodology for integral assessment of investment attractiveness of enterprises

Source: compiled by the authors based on [18]

The advantage of this methodology is the ability to investigate the financial position of the organisation. However, it has substantial drawbacks: it is quite cumbersome, contains over 40 indicators, and calculating an integral indicator involves using specialised INTEGRAL software. In addition, the above-mentioned approach does not factor in the industry specifics of the business object and other indicators of the external environment. The next method is based on the definition of an integral indicator and developed specifically for IT enterprises (i.e., it considers the specifics of the enterprise's activities). According to this method, the investment attractiveness of an enterprise is calculated in four stages (Fig. 3) [4, p. 42].

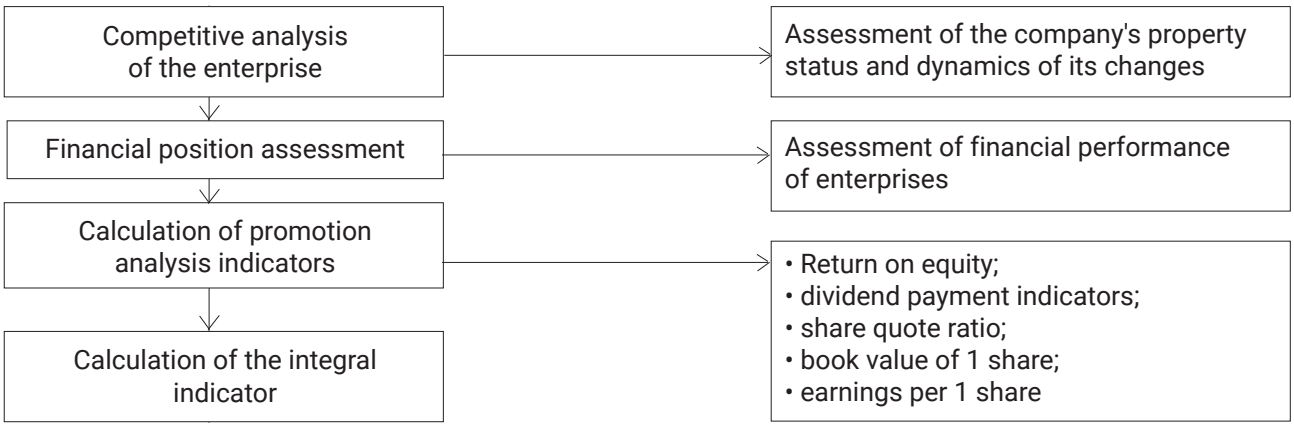

Figure 3. Methodology for assessing the investment attractiveness of IT companies
Source: compiled by the authors based on [4, p. 43]

The methodology given in [19] is based on the analysis of the financial condition of the enterprise and examines the corresponding indicators for the last 3-5 years, which demonstrates the position of the organisation in real time. In addition, if necessary, a comparative analysis is carried out before and after the implementation of the investment project (Fig. 4).

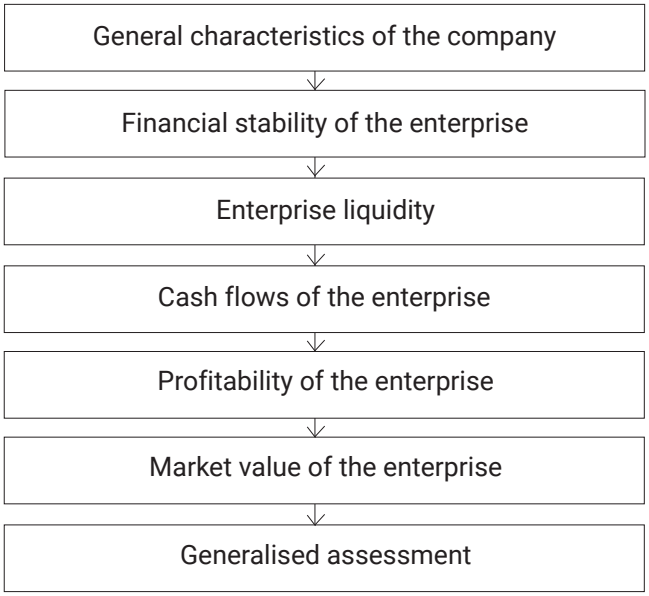

Figure 4. Stages of conducting an assessment of the investment attractiveness of an enterprise
Source: compiled by the authors based on [19, p. 60-61]

The disadvantage of most methods for assessing the investment attractiveness of organisations is the fact that the authors do not consider the factors of investment attractiveness of the country and region, indicators of attractiveness and dynamics of development of the industry where the enterprise in question operates.

Analysis of the financial condition of the enterprise, for all its importance and significance, does not allow obtaining a complete comprehensive assessment of the investment attractiveness of the enterprise. In this regard, the results of the analysis and assessment of the financial position of the enterprise, the assessment of quantitative indicators should be supplemented by an assessment of its qualitative, non-financial indicators, such as:

- economic and geographical location;
- industry affiliation;
- ownership status;
- knowledge-based capital of the enterprise;

– business standing and management reputation;
– public trust (reputation of the enterprise, expert opinion, etc.);
– personnel attractiveness, employees' qualification level;
– attractiveness of products for the consumer, etc.

The system of such indicators is analysed in a comprehensive method for assessing the investment attractiveness of enterprises, the author of which is M.P. Butko [21]. However, the modern literature contains several varieties of the complex method. This is explained by the fact that researchers consider it appropriate to investigate different indicator categories. Table 4 compares the factors of three methods of integrated assessment of the investment attractiveness of an organisation [20, p. 118; 21, p. 32; 22, p. 10-11]:

Table 4. Comparison of methods for comprehensive assessment of investment attractiveness of an enterprise

		R.V. Skaliuk, O.I. Loik	M.P. Butko	Yu.S. Zhukova
No.		**Factors**	**Factors**	**Factors**
1	Micro level	Production and technological activities of the enterprise	Attractiveness of enterprise products	Production activity of the enterprise
2		Financial position of the company	Financial position of the company	Financial position of the company
3		Enterprise investment security level	Personnel attractiveness of the enterprise	Investment activity of the enterprise
4		Institutional factors (legal form, quality of management, etc.)	Privatisation attractiveness of the enterprise	
5		Business reputation of the enterprise	Social attractiveness of the enterprise	
6		Information factors	Territorial attractiveness of the enterprise	
7	Meso- and macrolevel	Social factors	Environmental attractiveness of the company	
8		Economic and political situation in the country		
9		Industry competition		
10		Infrastructure factors		
11		Technological factors		
12		Market factors		

Source: compiled by the authors based on [20, p. 118; 21, p. 32; 22, p. 10-11]

For a more objective assessment of the investment attractiveness of enterprises, the methods are presented using parametric analysis methods or a rating method based on various types of information support for investment attractiveness analysis (Table 5) [23; p. 141].

Table 5. Comparative characteristics of parametric analysis and rating assessment of investment attractiveness of an enterprise

Method characteristics	Parametric analysis	Rating
Content	Comparison of different enterprises in the same industry by certain criteria and performance indicators	Comparing several organisations to rank them according to certain criteria
Feasibility of application	If it is necessary to identify the level of investment attractiveness of the enterprise and develop an investment strategy based on this. When the research customer is a separate legal entity and obtaining information involves substantial resource costs	The research client is a government or international organisation

Table 5, Continued

Method characteristics	Parametric analysis	Rating
Methods of obtaining information	– Interviewing; – from informal sources	– Interviewing; – from the consolidated financial statements of comparison objects; – from official requests sent to the objects of analysis and allowing to collect fragmentary management information
Execution sequence	– Identifying analysis objects; – determining the nature of interaction between analysis objects; – determination of general trends in the state and development of objects of analysis in the investment market; – conducting a parametric analysis of investment attractiveness based on certain activity parameters selected depending on the level at which the analysis is performed	– Selection of indicators for evaluating investment objects; – determining the "weight" of an indicator in the final evaluation of an object; – accounting for the dynamics of indicators and consideration of their trends in the final point assessment using a correction factor; – calculation of the final score based on the evaluation results, which is displayed as the sum of the results of multiplying the points of individual rating indicators by their "weight"; – ordering the final rating table
Analysis results	– Identification of the enterprise weaknesses and strengths based on all selected parameters; – formulation of certain conclusions on the investment attractiveness of the enterprise; – setting investment priorities; – making appropriate management decisions (invest in the enterprise, refrain from investing currently or wait until certain operating conditions change, refuse to invest, etc.)	The final rating table provides the rating user (for example, a potential investor) with a comprehensive picture of the interaction of investment attractiveness factors of the analysed enterprises

Source: compiled by the authors based on [23; p. 141]

Thus, the method of parametric analysis is mostly non-formalised and qualitative in nature. The rating method has gained wide popularity due to its ease of use and ease of interpretation of results, since the pivot table demonstrates what factors determine the place of the object of analysis in the rating. At an enterprise in needs of an objective assessment of its investment attractiveness, it is necessary to analyse and consider the system of both quantitative and qualitative parameters. All these criteria are subject to evaluation in the rating method. It is complex and multiparametric. Therewith, when applying any method, it is advisable to perform a comparative assessment of the investment attractiveness of an organisation for enterprises belonging to the same national economy sector.

Features of the multifactor methodology for assessing the investment attractiveness of an enterprise

Based on the above-mentioned methods and based on personal considerations, the authors of this paper propose the following method for assessing the investment attractiveness of an enterprise (Table 6):

Table 6. Multifactor methodology for assessing the investment attractiveness of an enterprise

No.		Indicator	Maximum score
1	Meso- and macrolevel	Stability of the national currency	5
2		Stability of the political situation in the country	5
3		Level of efficiency of the judicial system	5
4		Level of the anti-corruption efforts	5
5		National level of labour migration	5
6		Average official salary in the region	5
7		Regional security level	5
8		Level of education in the region	5
9		Ecological situation of the region	5
10		Security and ease of doing business in the region	5
11		Tax system, availability of benefits and subsidies for industry enterprises	5
12	Micro level	Liquidity and solvency of the enterprise	10
13		Profitability, feasibility of the enterprise	10
14		Financial solvency and stability of the enterprise	10
15		Market value indicators	10
16		Business standing and management reputation	5
Total			100

The set of indicators in this methodology creates a universal method for assessing the investment attractiveness of an enterprise, which can be applied regardless of the form of ownership of the organisation, its size and scope of activity.

Indicators are divided into two groups:

- meso- and macrolevel indicators;
- microlevel indicators.

Sources of information include official responses from local self-government bodies, data from the State Statistics Service, information in reputable media, public information in databases, as well as documents from public organisations and deputies of local councils, etc. In addition, some indicators can be evaluated using an expert or sociological survey.

The maximum number of points that a company can receive for a single indicator ranges from 5 to 10 points. For the rating assessment of the investment attractiveness of an enterprise, the following scale is used (Table 7):

Table 7. Scale for assessing the investment attractiveness of an enterprise

Numeric value	Degree of attractiveness
100-90	Very high
89-70	High
69-55	Medium
54-50	Low
49-35	Very low
34-0	Extremely low

Conclusions

It is essential for investors to choose an enterprise that has the best development prospects and can ensure the highest investment efficiency as an investment object. For an in-depth study of the object in question and making a rational decision on the feasibility of investment, potential investors need to conduct a comprehensive

assessment of the investment attractiveness of the enterprise. Upon assessment, one should pay attention to external and internal factors.

The multifactor methodology for assessing the investment attractiveness of enterprises proposed by the authors of this study factors in a system of indicators that analyses indicators at the macro-, meso- and microlevels. The methodology becomes objective and complete through the investigation of such indicators as the stability of the political situation in the country, the level of anti-corruption efforts, stability of the national currency, environmental situation in the region, ease of doing business, benefits and subsidies, as well as financial position of the enterprise, the business standing and management reputation, etc., while the rating system provides ease of interpretation of results.

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Теоретико-методологічні підходи до оцінювання ефективності бізнес-процесів туристичного підприємства

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Анотація. Актуальність дослідження обумовлена необхідністю адекватного оцінювання ефективності діяльності підприємств індустрії туризму та протікання окремих бізнес-процесів на цих підприємствах за умов постійно зростаючого впливу туристичної індустрії на економічну та соціальну сфери суспільства. Метою дослідження є побудова концептуальної моделі оцінювання ефективності бізнес-процесів туристичних підприємств. Методологічну основу дослідження склали методи абстрагування, аналогій, аналізу й синтезу; нормативні й позитивні підходи до вивчення економічних процесів; процесний і системний підходи; метод моделювання. У статті розглядаються теоретико-методологічні підходи до оцінювання ефективності бізнес-процесів туристичного підприємства за сучасних умов розвитку ринку туристичних послуг. Визначено основні поняття бізнес-процесів, сформульовано мету та критерії оцінювання їх ефективності. Охарактеризовано головні чинники, які впливають на ефективність бізнес-процесів підприємств сфери туризму. Запропоновано основні групи показників для оцінювання ефективності бізнес-процесів туристичного підприємства. Така система показників допомагає комплексно моніторити ситуацію на туристичному підприємстві, оскільки враховує всі ключові сфери діяльності підприємства та виявляє пріоритетні бізнес-процеси, які вимагають змін. Специфіка оцінювання рівня ефективності бізнес-процесів підприємств сфери туризму залежить від цілої низки чинників, які не є постійними, у зв'язку з чим зазвичай вивчають основні тенденції розвитку туристичного підприємства та взаємозв'язку його економічних показників. Вивчено підходи до процедури оцінювання ефективності бізнес-процесів, а також до формування системи показників для оцінювання зазначеної ефективності на туристичному підприємстві. Визначено основні принципи формування системи оцінювання ефективності бізнес-процесів для туристичних підприємств. Описано низку технологій оцінювання ефективності бізнес-процесів. Представлено модель оцінювання ефективності бізнес-процесів у туризмі. Відзначається, що головну і визначальну роль в оцінюванні діяльності туристичного підприємства відіграють цільові показники ефективності. На основі виявлених особливостей туристичної діяльності розглядаються проблеми, які можуть виникати у процесі оцінювання ефективності бізнес-процесів та пропонуються дієві способи їх усунення. Обґрунтовано перспективи подальших наукових досліджень у даному напрямі, які полягають у поглибленому вивченні питань підвищення ефективності діяльності туристичних компаній за рахунок впровадження в їх діяльність інноваційних технологій (нейромаркетингу, віртуальної та доповненої реальності, а також «зелених» технологій)

Ключові слова: бізнес-процес, ефективність, оцінювання ефективності, туризм, туристичне підприємство

Theoretical and Methodological Approaches to Evaluating the Efficiency of Business Processes in Travel Enterprises

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Abstract. The relevance of this paper is conditioned upon the necessity of an adequate evaluation of the efficiency of travel industry enterprises and the course of individual business processes at these enterprises in the context of the ever-growing influence of the tourism industry on the economic and social spheres of society. The purpose of this study is to build a conceptual model for evaluating the efficiency of business processes of travel enterprises. The methodological framework of this study comprises methods of abstraction, analogies, analysis, and synthesis; normative and positive approaches to the study of economic processes; process and system approaches; modelling method. The study considers theoretical and methodological approaches to evaluating the efficiency of business processes of a travel enterprise in modern conditions of development of the travel services market. The main concepts of business processes are defined, the purpose and criteria for evaluating their efficiency are formulated. The main factors affecting the efficiency of business processes of tourism enterprises are described. The authors propose the main groups of indicators for evaluating the efficiency of business processes of a travel enterprise. Such a system of indicators helps to comprehensively monitor the situation at a travel enterprise, since it considers all key areas of activity of the enterprise and identifies priority business processes that require changes. The specifics of evaluating the efficiency of business processes of travel enterprises depend on certain factors that are not constant, and therefore the studies usually cover the main trends in the development of a travel enterprise and the interrelation of its economic indicators. The study investigates the approaches to the procedure for evaluating the efficiency of business processes, as well as to the development of a system of indicators for evaluating the specified efficiency at a travel enterprise. The authors have identified the fundamental basic principles of developing a system for evaluating the efficiency of business processes for travel enterprises. Several technologies for evaluating the efficiency of business processes are described. The paper presents an original model for evaluating the efficiency of business processes in the travel industry. It is noted that the main and determining role in evaluating the activities of a travel enterprise is played by key performance indicators. Based on the identified features of travel activities, problems that may arise upon evaluating the efficiency of business processes are considered and effective ways to eliminate them are proposed. The study substantiates the prospects for further research in this area, which lie in an in-depth study of improving the efficiency of travel companies by introducing innovative technologies (neuromarketing, virtual and augmented reality, as well as "green" technologies)

Keywords: business process, efficiency, efficiency assessment, travel, travel enterprise

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Introduction

Tourism in Ukraine is considered as one of the priority sectors of the national economy and a substantial factor in regional development. In many regions of Ukraine, the effective functioning of the travel sector is associated with the solution of the critical socio-economic tasks, namely: increasing employment and improving the quality of life of the population, increasing the investment attractiveness of the region, diversifying the regional economy, improving the environmental situation, optimising the process of nature management, etc. [1]. In the light of the current economic situation, the issue of travel industry development as an element of the territorial economic system to effectively fulfil the travel potential of the territory is becoming increasingly relevant [2].

The impact of the travel industry on the economy is described by a multiplicative effect. In the context of the ever-growing influence of the travel industry on the economic and social spheres of society, there is a need for an adequate evaluation of the efficiency of the travel industry, as well as individual travel businesses. An objective assessment of the dynamics of achieving high indicators of economic efficiency of travel enterprises and individual processes within their borders is beginning to become particularly important. Analysis of processes and the impact of their efficiency on the enterprise performance in general serves as the basis for designing an enterprise development strategy. Increased competition in the travel services market, advanced growth rates and increased requirements for the organisation of the management process encourage managers to reconsider methods for evaluating the performance efficiency [3; 4].

The functioning and development of the travel business is based on its internal resources and reserves, and therefore it is necessary to focus special attention on evaluating, in-depth analysis, and monitoring the efficiency of business processes. The architecture of the business process model of a travel enterprise requires its constant updating in dynamically changing market conditions, and therefore it is necessary to design an optimal system of indicators for evaluating the efficiency of business processes. Such a system is designed to help the tourism company identify "critical points" in a timely manner and apply "reengineering" of inefficient business processes.

Methodology

It is advisable to formalise the results of monitoring business processes implemented by structural divisions of a travel enterprise in the form of a system of indicators. Consequently, the methodological framework of this study comprises methods of abstraction, analogies, analysis and synthesis (used to detail the term "business process"); normative and positive approaches to the study of economic processes (to identify the factors impacting the efficiency of business processes of a travel enterprise); process and system approaches (to identify individual business processes and systematise performance indicators of business processes of a travel enterprise); modelling method (to design a model of performance indicators of a travel enterprise). Therewith, one of the main tools for developing an effective management system at the enterprise is the process approach, the essence of which is to distinguish individual processes in the practice of management and production activities with their subsequent management. To define such processes, it is customary to use the economic term "business process".

The theoretical and methodological framework of the study of issues related to evaluating the efficiency of business processes included the papers of both foreign and Ukrainian authors, such as: I. Bilalov, D. Suleimanova [1], D. Valko [2], L. Kozerod [3], Y. Taraskin [4], K. Chuprov [5]. The following researchers were engaged in evaluating the efficiency of business processes of tourism enterprises: P. Vukadinović et al. [6], Ph. Alford [7], K. Yesipova [8], S. Melnychenko [9]. However, the analysis of Ukrainian and foreign literature has demonstrated that modern economic science still does not pay due attention to solving the problems of evaluating the efficiency of business processes of travel enterprises. Furthermore, upon evaluating the efficiency of business processes, difficulties may arise due to a lack of knowledge or resources, as well as the lack of opportunities to create a universal methodology for evaluating the efficiency of business processes. To solve them, it is mainly necessary to attract specialists or additional resources, but this entails an increase in financial costs, which also constitutes a problem for the organisation. Due to the fact that the methodology for evaluating the efficiency of business processes for travel enterprises is understudied, the justification of the theoretical and methodological foundations of comprehensive assessment and determination of ways to improve the efficiency of travel business organisations in conditions of economic turbulence is an extremely urgent problem for economic science, as well as for economic practice. All this leads to an objective need for scientific development of new approaches to solving the problems of evaluating the efficiency of business processes of travel enterprises, which provide for the following aspects:

– coverage of the essence of the efficiency of business processes of travel enterprises;

– classification of criteria for evaluating the efficiency of business processes of travel enterprises;

– determination of ways to measure the efficiency of business processes of travel enterprises.

Results and Discussion

Development of a system for monitoring the efficiency of business processes at a travel enterprise

In the context of the ever-growing influence of the travel industry on the economic and social spheres of society, there is a need for an adequate evaluation of the efficiency of the travel industry, travel enterprises, as well as individual business processes that occur at these enterprises [10]. A business process is a set of actions that turn input resources into output products or services that have a certain value to consumers.

The efficiency of business processes is evaluated to identify unprofitable business processes, as well as the problem areas, ways to improve business processes, increase profits and reduce costs, increase the efficiency of a travel enterprise, support decision-making upon investing, and restructure the organisation [11].

An effective model of management of a travel enterprise should consider the specifics of economic activity in this area, the features of the travel offer and an unconventional set of business processes compared to industrial enterprises [8]. The development of a system of indicators for monitoring business processes implemented by the main divisions of a travel enterprise should be based on identifying, firstly, the types of activities of the enterprise, secondly, the services (travel products) sold by the enterprise, and thirdly, the resources used for this purpose. When designing a system of evaluation indicators, the "exit" of one business process should be considered as the "entry" to the next business process. However, in present-day conditions, the activity of a travel enterprise is very diverse, so it is impossible to project one situation onto another, which creates additional difficulties in forming indicators for monitoring business processes implemented by structural divisions.

It is advisable to develop a system of indicators that allow obtaining a quantitative assessment of business processes in the process of monitoring them as a two-level system. The first level of indicators is intended for the top management of a travel enterprise, the second – for the heads of its structural divisions. The number of indicators at both levels should be small, but sufficient to objectively evaluate the situation at the enterprise. Indicators at both the first and second levels should be linked to the existing system of material incentives at the travel enterprise, including the bonus system. The implementation of any business process is aimed at achieving the strategic purpose of the travel enterprise – maximising the market value of the business. In a market economy, this purpose can be achieved through the introduction of innovative technologies for serving tourists and providing innovative services that best meet the consumer's requirements. That is why, it is advisable to associate monitoring of business processes with the calculation and evaluation of indicators in dynamics that are somehow related to the parameters of travel services rendered.

The monitoring system assumes that for each business process, a purpose and goals are set that should be achieved at the end of the business process, as well as planned resource costs and planned results. Therewith, the implementation of the business process should ensure both its efficiency and its effectiveness. Efficiency means that the correlation between results and costs is not lower than planned, and effectiveness implies that the business process ensures the best match between the goals set and the results obtained.

When forming a business process monitoring system at a travel enterprise, it is necessary to inform managers at all levels of recommendations on the use of monitoring results. Managers need to know what indicators and to what extent they are responsible for. Having such information, the heads of structural divisions can develop a system of measures, implementing which, one can adjust a particular indicator. This enables an efficient influence on the implementation of business processes in the structural division. Then the developed system of indicators will encourage employees of the travel enterprise to obtain high final results. This implies that achieving the planned indicators within a particular business process helps increase revenue and profit, reduce unproductive costs, and increase the net cash flow of the enterprise.

Assessment of the level of efficiency of business processes of tourism business organisations, which depends on numerous variable factors, is not constant, and therefore, when solving this problem, the studies usually investigate the main trends in the development of the organisation and the interrelation of its economic indicators. The problem of evaluating the efficiency of business processes of travel business organisations cannot be considered separately from social, economic, and organisational factors. The authors of this study believe that the efficiency of business processes of a travel enterprise depends on the following factors:

– quality of goal setting, that is, compliance of the planned goals with the requirements of the external environment, the capabilities of the enterprise, and the

interests of customers in the travel services market;

– strength and focus of motivations that encourage employees to achieve their goals;

– adequacy of the selected strategies to the set goals;

– the volume and quality of financial resources involved in the development of travel services (travel products).

The first three factors describe the strategic aspect of the effectiveness of organising a travel business, and the last one – the tactical one.

System of indicators for evaluating the efficiency of business processes of a travel enterprise

The system of performance indicators should help present the company's activities in the form of a system of interrelated business processes, aimed at maximising the satisfaction of the requirements of all stakeholders. It contains a set of indicators that allow evaluating the organisation's activities in totality, as well as considering the degree of satisfaction of all end groups of consumers of business processes interested in the efficient operation of the organisation. Thus, a well-selected set of indicators allows describing the functioning of any complex system.

An indicator is a qualitatively defined variable with constitutes a set of possible quantitative values correlates, and relating to which an algorithm for calculating these values based on initial data is formulated. The indicator is also a quantitative feature of a certain property of the displayed object. Such a characteristic contains a single quantitative value and a set of qualitative features necessary for its unambiguous identification. Quantitative indicators are quantities that can be measured directly. The qualitative characteristics of the process are less noticeable, and their measurement in most cases is performed indirectly using numerous substitute indicators. A subjective assessment characterises qualitative indicators. In the practices of organisations, quantitative indicators are most frequently used because qualitative indicators are considered insufficiently accurate and, accordingly, less important. However, W. Deming argued that managing an organisation solely based on factual figures, without paying close attention to qualitative indicators that are absent or cannot be measured, means catching the "deadly management disease" [12].

There are many classifications of business process metrics. Below are some of them that somehow relate to the travel business.

Thus, K. Chuprov identified 4 groups of indicators on which the system for evaluating the efficiency of business process management is based:

– performance indicators for certain processes;

– quality indicators of manufactured products;

– indicators of customer satisfaction with the company's performance;

– current and effective financial performance indicators of the enterprise [5].

The following classification uses units of measurement as a classification feature. In this case, all business process indicators can be represented as the following groups (Fig. 1):

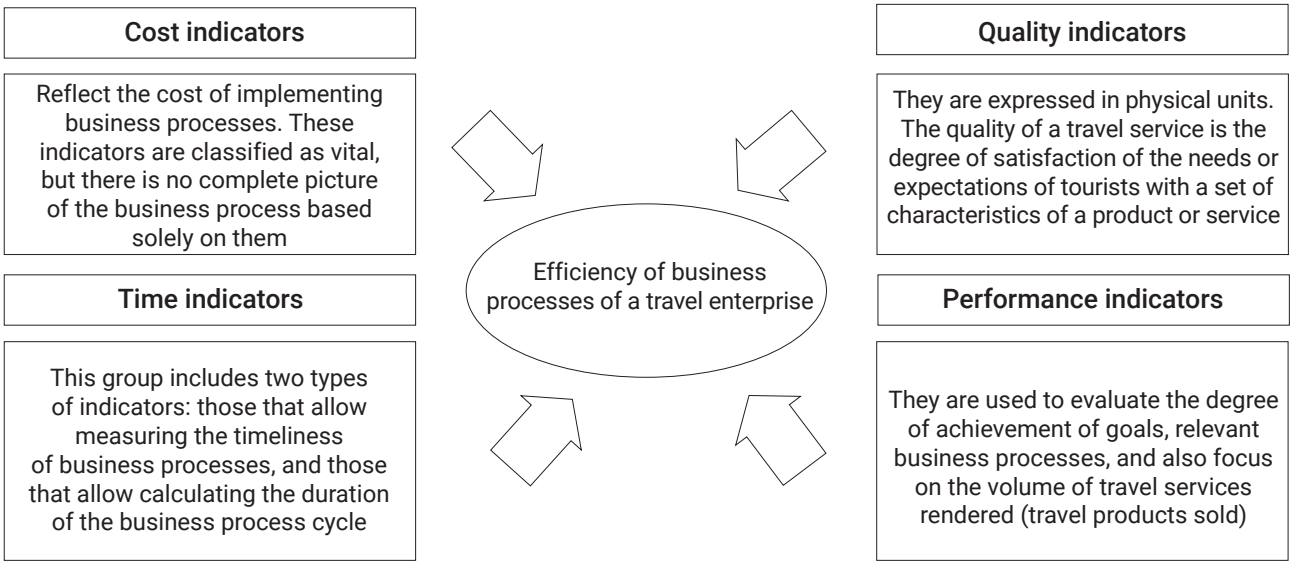

Figure 1. Performance indicators of business processes of a travel enterprise
Source: compiled by the authors based on [4]

A business process, like any other process, has certain characteristics that can be used to manage its progress. The technology of evaluating the efficiency of business processes according to [1] constitutes a set of the following stages:

1) defining goals for evaluating the effectiveness of business processes;

2) selection of methods for evaluating performance and developing a system of indicators. For an objective understanding of the passage of all stages of the business process, it is necessary to establish a system of criteria and indicators based on which it will be possible to judge the state of the business process;

3) collecting data for performance evaluation;

4) calculation of business process performance indicators;

5) analysis of the obtained data and preparation for use.

According to L. Kozerod [3], the aggregate indicator of the effectiveness of business processes should factor in the efficiency of the process in terms of cost, in terms of time, and in terms of quality. In this regard, the technology for evaluating the effectiveness of business processes in a travel enterprise can be represented using a model of nine related stages (Fig. 2):

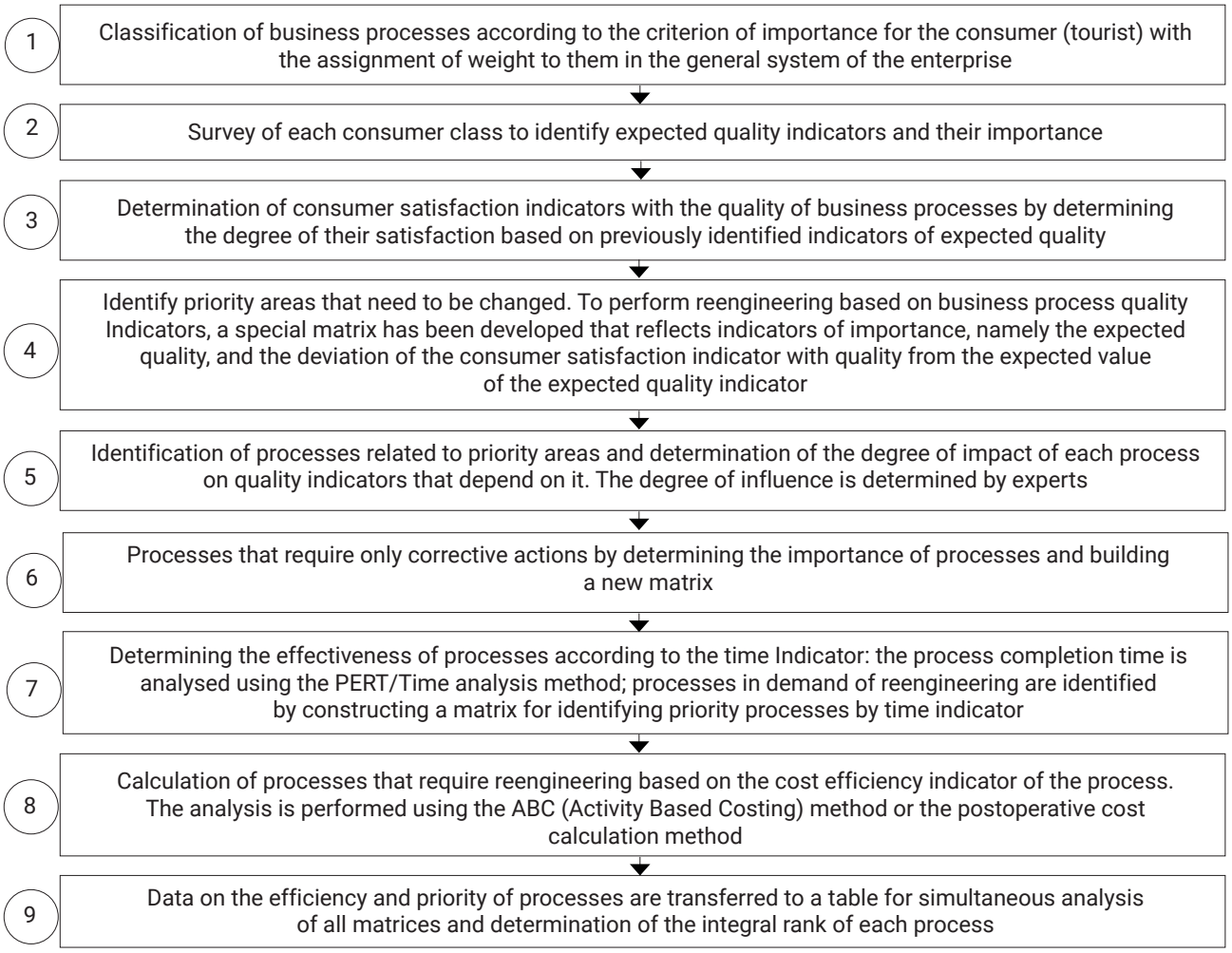

Figure 2. Stages of evaluating the effectiveness of business processes at a travel enterprise
Source: compiled by the authors based on [3]

Such a system of indicators helps to comprehensively evaluate the situation at a travel enterprise, since it considers all key areas of activity of the enterprise and identifies priority business processes that require changes.

Another system for evaluating the effectiveness of business processes is proposed in the studies of D. Antipov [13]. The researcher presented a model of performance indicators of an organisation (in the context of a process-based approach to management), which combines a set of various indicators of enterprise processes. In full, this model constitutes a universal tool for evaluating the performance of an enterprise by type of business processes for further strategic planning

based on the data obtained. Based on this, a model for evaluating the efficiency of business processes in travel industry is proposed to be presented using a diagram (Fig. 3):

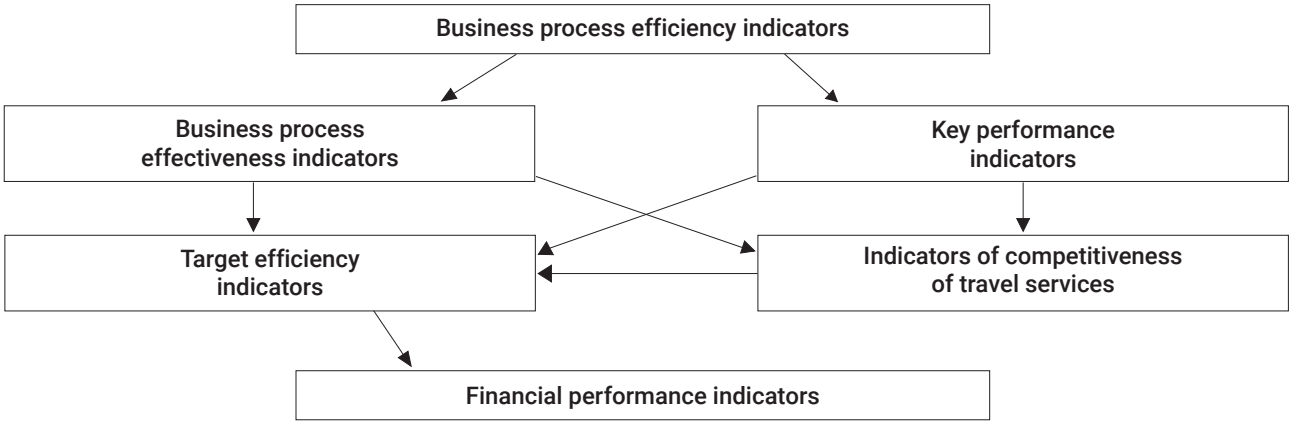

Figure 3. Model of performance indicators of a travel enterprise
Source: compiled by the authors based on [13]

When developing this model, the authors followed the rules of the hierarchy of indicators of a travel enterprise. Financial performance indicators of an enterprise can be formed after receiving indicators of other levels. They describe the overall efficiency of all business processes of a travel enterprise. However, the main and determining role in evaluating the activities of a travel enterprise is played by target efficiency indicators. Target efficiency indicators describe how efficiently an enterprise achieves its target result – profit. Accordingly, the key task of any business process of a travel enterprise is to maximise its efficiency in achieving the target result. To achieve maximum efficiency, one should consider that to develop a single standard or methodology that would be universal for all types of organisations, the field of efficiency evaluation is currently understudied. Furthermore, the business processes of travel enterprises have industry-specific characteristics, and special indicators are used to evaluate their efficiency. Therefore, the best solution is to create general rules for evaluating the efficiency of business processes in the tourism sector, which would regulate this process, define general evaluation principles, requirements for evaluation results [14].

The goals and objectives of evaluating the efficiency of travel business processes should be correctly formulated and communicated to all company employees. Employees should have a complete understanding of how the evaluation is conducted, why, what results will be achieved, how it will improve the company's performance, and why it is impossible to do without it. Otherwise, employees begin to perceive this process as aggravating additional responsibilities, without seeing the benefits it brings to the organisation.

Since evaluating the efficiency of business processes of a travel enterprise is a relatively new and understudied scientific area, specialists working in this field often face certain difficulties, which directly impacts the activities of the entire enterprise. Dynamically changing conditions and uncertainty of the economic environment in the travel services market lead to the need for constant recalculation of business process efficiency indicators. Keeping the data up-to-date in this case increases the company's time material and labour costs. This problem was especially acute during the COVID-19 pandemic, when travel enterprises suffered massive losses due to uncertainty and instability in the market. Fixing this problem is very difficult, as it seems difficult to control the external environment of the enterprise. One can only adapt to it correctly, so companies should invest in training and elevating the skills of their employees. These investments will be justified by strengthening the company's position in the market and, consequently, improving the financial situation.

If evaluating the efficiency of business processes takes a long time, it will also only lead to additional resource costs, without bringing timely and relevant results. A travel company should efficiently plan the entire evaluation process and constantly improve it according to the changes in the company and beyond.

Conclusions

In recent years, the travel industry has received considerable development and has become a massive socio-economic phenomenon on an international scale. The rapid development of the travel industry is facilitated by the expansion of political, economic, scientific, and

cultural ties between states, and therefore the need to improve the efficiency of business processes of organisations that provide services to the travel business is acute. The versatility of the issue of improving the efficiency of business processes of travel enterprises necessitates the improvement of the entire economic mechanism, management of production and economic processes, which requires a detailed study of the theory and practice of improving the efficiency of business processes of travel business organisations.

Evaluating the level of efficiency of business processes of tourism enterprises depends on numerous variables. Therefore, when solving this problem, one should investigate the main trends in the development of the organisation and the interrelationships of its economic indicators. A well-developed system of indicators helps to comprehensively evaluate the situation at a travel enterprise, since it considers key areas of activity of the enterprise and identifies priority business processes that require changes. Therewith, the authors of this study believe that the main and determining role in evaluating the activities of a travel enterprise is played by target efficiency indicators.

The authors see the prospect of further research in an in-depth study of improving the efficiency of travel companies by introducing innovative technologies into their activities. In particular, this refers to the use of neuromarketing technologies, virtual and augmented reality technologies, as well as "green" technologies.

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Цифрова економіка як середовище прояву конкурентних переваг України

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Анотація. У статті розглянуто важливість активного впровадження та розвитку цифрової економіки для України. Проведено аналіз понятійного та категоріального апарату, який є наявний у наукових публікаціях щодо проблем якісного цифрового розвитку економіки країни; було виявлено поліваріантність наукового трактування дефініції «цифрова економіка» та визначено основну спільну ознаку у визначенні такого типу економіки, яка відображається у широкому застосуванні як інформаційних, так і комунікаційних технологій. У процесі аналізу були застосовані загально-наукові та спеціальні методи, а саме: аналітичний метод використовувався під час огляду нормативних та правових джерел; метод класифікації надав можливість диференціювати головні компоненти цифрової економіки, а за допомогою методу опису було надано їм детальну описову характеристику; монографічний метод застосовувався під час вивчення літературних джерел з питань розвитку сучасної цифрової економіки на національному ринку; системний та аналітичний метод використовувався щодо обробки наявної та вибір релевантної інформації. Перевагу надано Індексу цифрової економіки та суспільства (DESI), який визначає рівень цифровізації економіки країни, розглянуто поняття Індустрію 4.0 і реальність впровадження його в Україні. Проаналізовано ринок ІТ-послуг в Україні, який демонструє позитивну динаміку в рості виручки, особливо від експорту. Представлено основні стратегічні пріоритети для України, згідно зі стадіями розвитку цифрової економіки, а саме: зародження нової цифрової економіки, перехід до цифрової економіки, повне перетворення сучасної економіки в цифрову. Вивчено тенденції, які фіксуються на ринку ІТ в останні роки. Доведено швидкий динамічний розвиток галузі ІТ, досліджено головні економічні показники розвитку. Оцінено стан і рівень галузі ІТ в України щодо інших краї, гравців ІТ-ринку. Для досягнення високих показників у сфері цифрової економіки необхідне комплексне вирішення таких проблем як: модернізація системи освіти, розбудова нової ІТ-екосистеми та посилення роботи над створенням нових українських технологічних парків

Ключові слова: Індустрія 4.0, Індекс цифрової економіки та суспільства, людський капітал, ринок ІТ-послуг

Digital Economy: An Environment for Ukraine's Competitive Advantages

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Abstract. This study considers the importance of active implementation and development of the digital economy for Ukraine. The authors of this paper analysed the terminology available in other papers regarding the problems of high-quality digitalisation of the Ukrainian economy; identified the multivariance of the scientific interpretation of the term "digital economy" and determined the main common feature in the definitions of this type of economy, which manifests itself in the wide use of information and communication technology. The analysis involved general scientific and special methods, namely: the analytical method was used in the review of regulatory and legal sources; the classification method provided an opportunity to differentiate the main components of the digital economy, and the description method facilitated their detailed descriptive characteristic; the monographic method was employed to study the literature sources on the development of the modern digital economy in the national market; the system and analytical method was used to process available and select relevant information. Preference is given to the Digital Economy and Society Index (DESI), which determines the level of digitalisation of the country's economy. The authors of this paper also considered the concept of Industry 4.0 and the reality of its implementation in Ukraine. The study analyses the IT services market in Ukraine, which demonstrates positive dynamics in revenue growth, especially from exports. The paper also presents the main strategic priorities for Ukraine, according to the stages of the digital economy development, namely: the birth of a new digital economy, the digital economy transition, the complete digitalisation of the modern economy. The authors investigated the trends that have been noted in the IT market in recent years. The rapid, dynamic development of the IT industry is proved, and the main economic indicators of development are studied. The study assessed the state and level of the IT industry in Ukraine relative to other regions that are IT-market players. To achieve high performance in the digital economy, it is necessary to comprehensively solve such problems as modernisation of the education system, development of a new IT ecosystem and intensification of work on the creation of new Ukrainian technology parks

Keywords: Industry 4.0, Digital Economy and Society Index, Human Capital, IT services market

Introduction

In the entire history of its existence, humanity has experienced more than one technological revolution. Usually, on a global scale, any revolution is based primarily on scientific discoveries, innovations, and technological advance. It is believed that the following revolutions had the greatest impact on the development of humankind: agrarian, industrial, and post-industrial. Transformation and further development transpired through the intellectual transformation of human capital. For example, water and steam mechanisms were used in production during the industrial revolution, and electricity was used during the post-industrial revolution.

Since the 1970s, electronic technologies, production automation, electronics, and innovations have come to the fore on a global scale. An entirely new term "digital economy" emerges. Today, when humanity has managed to accumulate knowledge regarding digital technologies recently, is approaching a new leap: the industry is ready

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to move to mechanised and automated systems to improve and increase productivity, states can and have the ability to provide services online and services may introduce the use of robots. New digital technologies currently ensure the world's the development and transformation of relations arising between the main participants in economic activity, especially in such industries as banking, education, healthcare, media, economic security, trade, transport, construction, energy, etc.

In modern conditions of globalisation, the priority vector is the development of a high-quality information society of the country, namely through the digital economy development. The digital economy is one of the technologies already used by numerous countries around the world to improve the effectiveness of their national economies and the rational development of new modern information technologies to increase profitability. It serves as the basis for the development of society and a platform for innovative information technologies. The digital economy is a prerequisite for the development of the digital market in Ukraine and integration into the Single European Market. Thus, the key issue lies in the current level of the economy digitalisation in Ukraine and the search for ways to improve it.

Features of the digital economy in modern conditions of globalisation are at the centre of studies of such Ukrainian and foreign researchers: V.V. Alpakova [1], A.P. Dobrynin, S.M. Veretuk [2], S.V. Koliadenko, D. Lyon, V.I. Liashenko, K.A. Semiachkov, but quite numerous questions about the digital economy, its concept and development vectors remain understudied. The importance of developing the digital economy in Ukraine also lacks coverage.

The purpose of this study is to investigate the current state of the digital economy in Ukraine, opportunities and ways for development.

Methodology

The methodological framework of this study comprises the general economic principles of a comprehensive analysis of the priority of digital economy development in Ukraine. The identification of the main problems and obstacles of research, as well as the available solutions, were developed based on a systematic approach to the study of scientific papers of both Ukrainian and foreign researchers, the study of aspects of the digital economy development, as well as regulations and author's original developments. Thus, the methodology of this study is based on the analysis and research of Ukrainian and foreign literature on the subject under study.

The study of the issues of the digital economy involved a dialectical approach to the analysis of the current position and processes of the digital economy development in Ukraine and the world. In addition, the analysis and research involved the following general scientific and special methods: the analytical method was employed to review the regulatory and legal sources; the classification method allowed differentiating between the main components of the digital economy, and the description method facilitated their detailed descriptive characterisation; the monographic method was used during the study of literature sources and resources on the state and development of the digital economy; system-analytical method was employed for information processing. The comparison method was used to process data obtained by the authors of this study in the analysis of the Digital Economy and Society Index.

Results and Discussion

In the classical sense, the digital economy constitutes an activity where digital data (numerical, text) and information become the main means of production. The term “digital economy” was coined in 1995 by Don Tapscott. The digital economy is often referred to as the new economy, the web economy, since it is an economy based on the use of information and telecommunications technology. Such an economy is understood as the production, sale, and supply of products by involving computer networks [3].

V.V. Apalkova argues that the digital economy is the crucial engine of innovative development and competitiveness of the national economy [1, p. 12]. According to S.M. Veretuk, the digital economy constitutes the main component of the economy, where knowledge of subjects and intangible production are a priority. The digital economy is an entirely new economic structure that allows selling competitive and high-quality products with high added value, as well as contributes to the employment creation, the search for effective solutions to social, cultural, and, environmental issues. Highly developed countries of the world pay the greatest attention to the sustainable and integrated development of all elements of the digital economy, the information society and the knowledge economy [2, p. 54].

The widespread use of network digital technologies lately has led to the identification of the main four stages in the development of the digital economy (Table 1).

Table 1. Evolution of the digital economy

Period	Development stage	Main features
1990-2000	Stage I	A special infrastructure is being established to provide access to information via the Internet; Websites are used only to read information, not for promotion
2000-2010	Stage II	Users become active participants in the development and promotion of information and data
2010-2020	Stage III	The era of social networks, apps for instant information sharing
2020-Present	Stage IV	Building a neural network, where communication can be carried out between things, animals, and people using the principles of neurocommunication; Widespread use of artificial intelligence

Source: compiled by the authors

The stages of the digital revolution development occur simultaneously with the industrial revolution because the digital revolution is a tool for the transition from the third to the fourth industrial revolution (Industry 4.0), it had a substantial impact on the creation of GDP in all countries [4, p. 21].

The Digital Economy and Society Index (DESI) is used to determine the digitalisation level of the national economy. DESI includes such indicators as communications, digital public services, human capital, digital technology integration, and Internet usage. This document records and tracks the progress of EU Member States in the digital economy and its competitiveness.

According to DESI, in 2019, all EU Member States improved their positions in the digital economy. Finland, Sweden, the Netherlands, and Denmark scored the highest points in the DESI 2019 rating (almost 70 points) and are among the world leaders in digitalisation. These countries are followed by the United Kingdom, Luxembourg, Ireland, Estonia, and Belgium (Fig. 1).

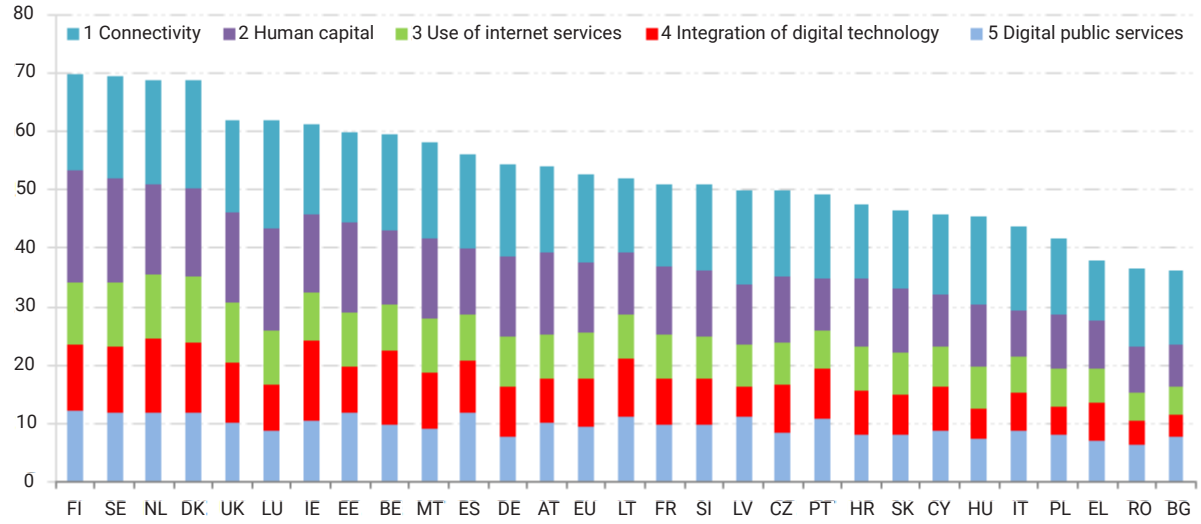

Figure 1. Digital Economy and Society Index (DESI)
Source: developed by the authors based on [5]

First, it is necessary to analyse the communication indicator in the context of the DESI indicators. The best results were recorded in the Netherlands, Luxembourg, and Denmark. The worst – in Greece, Croatia, and Italy. This can be confirmed by the following facts [5]:

1. 98% of the EU population is provided with fixed broadband internet access (at least 30 Mbps);

2. 91% of the EU population is covered by a 4G mobile network.

As for human capital, countries such as Finland, the Netherlands, and Sweden demonstrate the best

results, while Romania, Bulgaria, Greece, and Italy display the worst results. Unfortunately, 43% of Europeans do not even have basic skills in the field of digital technologies at all. However, a positive trend is also observed because the number of EU citizens who do not use the Internet decreased in the overwhelming majority of EU Member States in 2018 by 13% compared to 2017, statistics are presented in Figure 2. The most noticeable changes occurred in Cyprus – by 5%, where the share of people aged 16-74 has never used the Internet, and in Slovenia and Romania – by 4% [5].

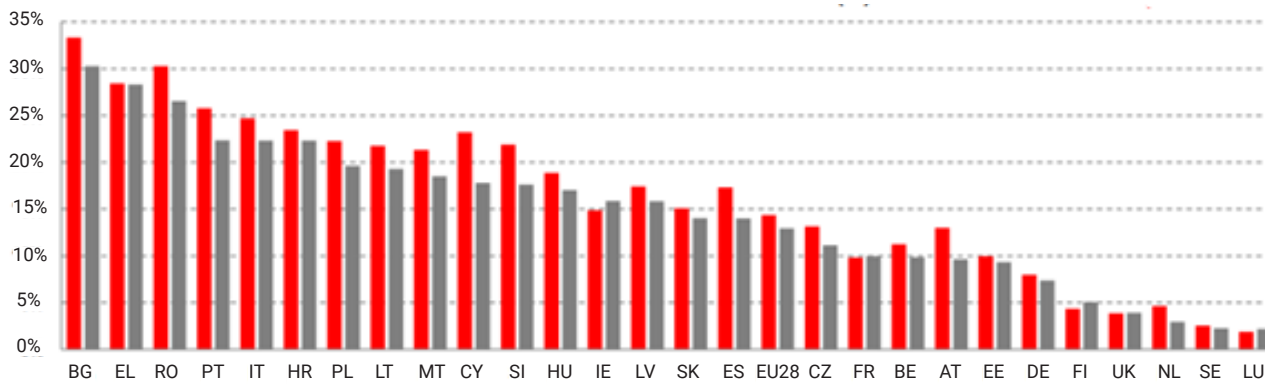

Figure 2. Percentage of the population that does not use the Internet
Source: developed by the authors based on [6]

The number of graduates in science, technology, engineering, and mathematics also increased (19.1 graduates per 1,000 people aged 20-29 in 2015 compared to 18.4 in 2013). In 2016, there were 8.2 million information technology specialists in the EU, which is 7.3 million more than 3 years earlier. Denmark, Sweden, and the Netherlands had the highest number of graduates in science and technology in 2016, while Romania, Italy, and Bulgaria had the lowest number. As for digital integration technologies, they are most frequently used in Denmark, Finland, and Ireland, and least frequently – in Romania, Poland, and Bulgaria. The most popular is the use of software for electronic information circulation (only 26% in 2013, in 2019 – 44%), conducting electronic payments and interacting with customers and partners using digital technologies (from 15% of enterprises in 2013 to 35% in 2019). As for digital public service availability indicators, Finland, Estonia, and Denmark occupy the best position, while Greece, Hungary, and Romania occupy the worst position [5].

Today, when Ukraine is at the 3rd technological stage, the priority task is to create conditions for the development of the digital economy. In Ukraine, the issue of digitalisation of industry and the national economy is being raised at the government level.

At the beginning of 2018, the Government of Ukraine approved the Concept of Qualitative Development of the Digital Economy of the Country, as well as Society for 2018-2020, developed and approved an Action Plan for the introduction and implementation of the Concept. The main purpose is to implement the available initiatives of the Digital Agenda of Ukraine 2020, and therefore the Concept constitutes a digital strategy that should be implemented to quickly eliminate barriers and obstacles arising upon active digital transformation of Ukraine in certain promising areas of development.

The Action Plan identifies the following measures:

1. High-quality regulatory and methodological, as well as organisational support for development;
2. Development and investment in priority areas of the digital economy of Ukraine;
3. Trainings to improve the digital skills of Ukrainian citizens;
4. Modernisation of the country's digital infrastructure.

Importantly, the developed Concept of the Digital Economy in Ukraine outlines the foundation for the digital economy development, forms the main principles of national policy that should be observed during digitalisation processes, encourages initiatives to establish and develop the country's digital infrastructures for high-quality and rapid overcoming of the identified "digital gap", helps elevate the digital skills of citizens, develops incentives for the creation of new innovative, high-tech industries and products, outlines critical areas for the nationwide implementation of digital transformation projects [7].

Industry 4.0 was initiated and put into effect by the federal government of Germany as a priority strategic plan for the development of the national economy with the main purpose of implementing information and communication tools, technologies in the modern

industry of the country through the connection of production components (equipment, personnel, products, etc.) to the world global network of information and data exchange [8].

Industry 4.0 occurs only during the transition from conventional automated production and the use of information and communication technology in production (the third industrial revolution) to combining resources, information flows, objects, and people into a network [9]. The digital economy policy constitutes a coordinated plan of action, state initiatives for prompt and flexible mobilisation of national resources for qualitative acceleration of technological changes, and for taking leadership positions in global competition [10].

The term "Industry 4.0" has existed in Ukraine since 2014, but even today it is not popular [10]. Industry 4.0 is based on information tools and technologies. In Ukraine, information technology (IT) is one of the priority areas of the economy. For the first half of 2018 of the Ukrainian IT-association, the IT industry brought the national economy 1.5 billion US dollars' worth of export revenue, which is 29% more than last year's figures. The number of people employed in the industry increased by 30 thousand people [7].

In general, the IT services market in Ukraine demonstrates positive dynamics – consistently high growth rates: according to official NBU data, in the first half of 2018 alone, the IT industry managed to bring 1.5 billion US dollars of export revenue to the Ukrainian economy. This is 29% more than last year's figures. The number of IT specialists was more than 150 thousand people with an average salary of 1.8-2 thousand US dollars per month (Fig. 3).

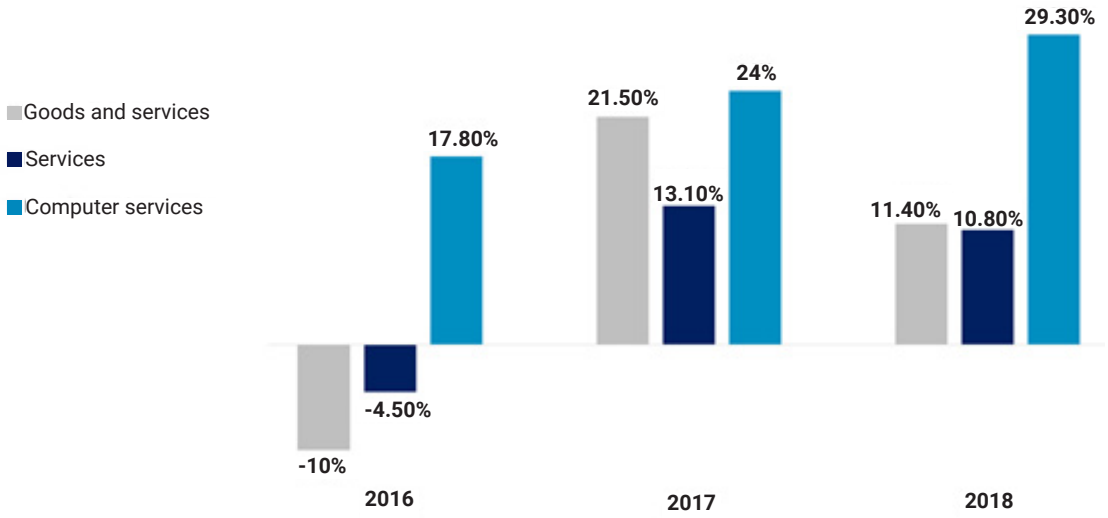

Figure 3. Dynamics of Ukrainian exports according to the NBU for 2016-2018

Source: [7]

According to leading experts of Pricewaterhouse-Coopers (PwC), the main elements of IT services in Ukraine today are as follows [11]:

- IT consulting and digitisation of data;
- IT support and outsourcing – services for maintaining, hosting, upgrading, and configuring IT products developed by third parties.
- Custom Application Development (CAD) – provision of services during the full or certain part of the new software development cycle, which provides additional value to the company through the development of an IT product (the right to intellectual property belongs to customers).
- Business process R&D outsourcing – a variety of services with relatively high added value, presented as a mixture of IT consulting and CAD, but with pre-defined boundaries and pre-determined constant repetitions of the software development cycle [11].

In 2019, there were 1,142 enterprises in the field of information and telecommunications, of which 21 were medium-sized and 1,121 were small [12]. The geographical structure of the IT market in Ukraine demonstrates the priority features of regional policy – Kyiv (44.3%), Kharkiv (15.4%), Lviv (12.0%), Dnipro (7.2%), Odesa (5.3%), Vinnytsia (2.2%), Zaporizhzhia (1.7%). 2.5% of respondents work remotely [13].

Annual growth rates have stopped. In 2019, the number of specialists in the top 25 companies according to dou.ua increased by 13% compared to 2018, and this is 5 points less than the 2018 growth rate compared

to 2017. As for the overall growth rate of the top 50, the annual figures are better – almost +15% in 2019. Comparison of quantitative data indicates that the number of specialists in the top 25 in 2019 increased by 5,750 people (6,983 in 2018). And in general, in the top 50 – by 8,671 in 2019 against 8,710 in 2018 (Fig. 4).

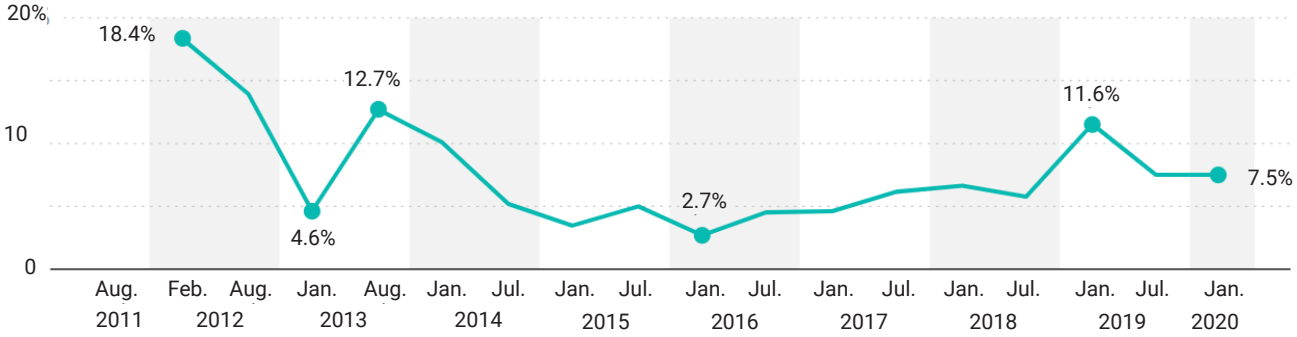

Figure 4. Relative growth rates in the IT industry

Source: [13]

In 2019, the number of specialists in 5 of the most successful IT companies in Ukraine increased by 13% (3,072 specialists).

The leader of the rating is EPAM, which is constantly increasing the number of employees (July 2019 – 7 thousand employees, January 2020 – 8 thousand employees). EPAM explains this activity by the constant increase in the share of complex end-to-end projects and cooperation with already available partners [14]. EPAM continues to develop its field of study, and establishes cooperation with higher educational institutions, opens special laboratories. The second place is occupied by SoftServe, which grew by 363 specialists between July 2019 – January 2020. GlobalLogic (+237 specialists), the company's priority areas are projects in the telecom, media, medicine, automotive industry (Fig. 5).

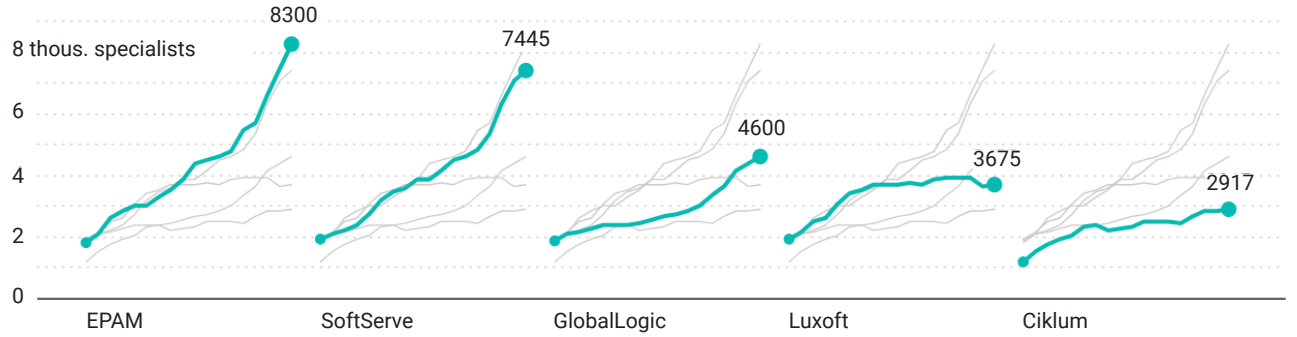

Figure 5. Growth dynamics of the 5 most successful IT companies for August 2011 – January 2020

Source: [14]

Conclusions

The digital economy constitutes the foundation of economic success and innovation. Competitive advantages in further integration into the EU are ensured by an increase in the quality and level of originality of Ukrainian goods and services. Therewith, the need for high-technological research, fundamental developments, the upbringing of a certain "digital" culture, and the implementation of the ideas of "smart cities" in Ukraine is ensured. In Ukraine, there is no general assessment of the economy digitalisation, and therefore a problem occurs regarding the understanding of the overall picture of the digital infrastructure used. The main reason is that Ukrainians do not have a digital field. To achieve high performance, Ukraine, and players in the information and digital technology market need a comprehensive solution to such problems as simplification of employment of foreigners, development of human resources, modernisation of the education system, removal of obsolete regulatory barriers, development of an entirely new IT ecosystem and strengthening work on the creation of new Ukrainian technology parks.

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Управління персоналом як інструмент формування конкурентної позиції закладів вищої освіти

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Анотація. На сьогодні ринок освітніх послуг є досить перенасиченим і вимагає більш детального зовнішнього та внутрішнього аналізу діяльності університетів задля розуміння принципів залучення абітурієнтів. Більшість майбутніх здобувачів освіти під час вибору університету для вступу мають певні критерії відбору і одним з головних є якість навчання. Саме тому такий фактор формування конкурентної позиції як рівень підготовки науково-педагогічного складу потребує більш детального розгляду з точки зору управління персоналом. Рівень підготовки науково-педагогічного складу містить у собі не лише набір певних кваліфікацій, а ще й вмотивованість і зацікавленість у проведенні якісних занять. Через специфіку роботи, викладачі найбільш схильні до емоційного вигорання, саме тому керівництву слід завжди мати на увазі ідеї, спрямовані на запобігання вигорання в колективі. Мета роботи – розглянути управління персоналом як інструмент формування конкурентної позиції закладів вищої освіти, розкрити проблему вигорання викладачів та надати рекомендації щодо запобігання цього стану з метою підвищення рівня підготовки науково-педагогічного складу. У ході дослідження були виконанні наступні завдання: розглянуто поняття конкурентної позиції та її особливості; виявлено основні чинники впливу на конкурентну позицію закладів вищої освіти (ЗВО); встановлено необхідність якісного управління персоналом для підвищення рівня підготовки науково-педагогічного складу; розглянуто проблему вигорання як ключову в роботі персоналу закладів вищої освіти; доведено ефективність концепції well-being і необхідність її застосування як складової частини процесу управління персоналом задля покращення конкурентної позиції ЗВО. Наукова новизна роботи полягає в аналізі окремих факторів формування конкурентної позиції – якість освіти та рівень підготовки науково-педагогічного складу, вияв-ленні важливості управління персоналом для підвищення результативності даних факторів, а також розробці рекомендацій щодо впровадження концепції well-being і діагностики вигорання серед викладачів із метою посилення конкурентної позиції університетів

Ключові слова: конкурентна позиція, управління персоналом, вигорання, фактори формування конкурентної позиції, ринок освітніх послуг, концепція well-being

Personnel Management as a Tool for Developing a Competitive Position of Higher Education Institutions

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Abstract. Nowadays, the market of educational services is quite saturated and requires a more in-depth external and internal analysis of university activities to understand the principles of attracting applicants. Most future applicants for education have certain selection criteria when choosing a university for admission, and one of the main criteria is the quality of education. That is why such a factor of developing a competitive position as the level of training of academic staff requires a more thorough consideration from the standpoint of personnel management. The level of training of academic staff includes not only a set of certain qualifications, but also motivation and interest in conducting high-quality classes. Due to the specific features of their work, teachers are most susceptible to emotional burnout, which is why management should always have ideas aimed at preventing burnout among the staff. The purpose of this study is to consider personnel management as a tool for developing the competitive position of higher education institutions, to cover the issue of teacher burnout and provide recommendations for preventing this condition to improve the level of training of academic staff. The study completed the following tasks: considered the concept of competitive position and its features; identified the main factors influencing the competitive position of higher educational institutions (HEI); established the need for high-quality personnel management to improve the level of training of academic staff; considered the burnout as a key issue in the work of the staff of higher educational institutions; proved the effectiveness of the well-being concept and the necessity of integrating it into the personnel management procedure to improve the competitive position of HEI. The scientific originality of this study lies in the analysis of individual factors of competitive position development – the quality of education and the level of training of academic staff, identifying the importance of personnel management to improve the effectiveness of these factors, as well as developing recommendations for implementing the well-being concept and diagnosing burnout among teachers to strengthen the competitive position of universities

Keywords: competitive position, personnel management, burnout, factors of competitive position development, educational services market, well-being concept

Introduction

At present, the aspect of developing the competitive position of higher education institutions in the market of educational services is a topical issue for Ukrainian researchers. In their publications, which were used as the basis for this study, L.V. Lebedeva, A. Korchynska and M.T. Telovata have already raised the issue of competitiveness of Ukrainian universities and the problems they face upon developing competitive advantages.

Currently, there is quite fierce competition in the market of educational services, primarily in the higher school system, which will inevitably increase due to a shortage in the number of applicants. Thus, in Ukraine, the number of students in HEIs is gradually decreasing. For 2015-2019, the total number of applicants for education decreased by 423,105 people [1]. There may be several reasons for this. For instance, demographic decline, disinterest of young people in obtaining higher

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education, or preference for foreign universities. The number of HEIs was 659 as of 2017, which is 154 institutions less than in 2010 (813 HEIs). That is, this indicator has substantially decreased and indicates manifestations of a fiercer competition among universities for the right to exist [2, p. 66].

Active research of the educational services market, analysis, and evaluation of their personal position in it, and working out the shortcomings of the educational institution to increase the competitiveness are now necessary for HEIs. Thus, according to the authors of this study, the competitive success of universities in the global market of educational services comprises the following factors: training, retraining, and advanced training of personnel; research; high potential for generating new knowledge; availability of various sources of funding, strengthening international cooperation; quality of the educational process.

Modern HEIs should focus on the factors of developing a competitive position. One of the vital factors is the quality of education and the level of training of academic staff. According to applicants, these indicators are crucial when choosing a future place of study. This conclusion can be reached after an in-depth analysis of the Ukrainian and global market of educational services because according to the results of an international study, about 61% of applicants primarily focus on the conditions and quality of education, and not on the prestige of the university [3, p. 92]. Studies conducted based on surveys of Ukrainian students also indicated that more than half of them – 53.4% – chose a higher education institution based on the quality of education [4].

Meanwhile, according to a World survey conducted by the American Gallup Institute, the quality of educational services in the HEIs of Ukraine is low (only 49% consider it satisfactory), compared to other countries of the world: Finland – 81%, Canada – 73%, the USA – 68%, Germany and France – 66% [5, p. 41]. The quality of education is directly dependent on the level of training of academic staff. However, the latter is described not only by the qualification abilities of the staff, but also considers the extent to which each of the employees is satisfied with their life and work (physically and psychologically). This factor will affect their interest in work, expanding their knowledge and reproducing the educational programme at a high level.

It is the improvement of the personnel management procedure that can affect the competitive position of the HEI by introducing positive changes and shifting the focus towards well-being management. That is, using the well-being concept in working with the team and preventing emotional burnout among teachers. After all, according to O. Babkova's research on the manifestation of emotional burnout, which was conducted using the V.V. Boyko's questionnaire among teachers of educational institutions of Zaporizka Oblast, the following indicators were found: 32.43% of respondents already have emotional burnout, 52.7% – currently experience its manifestations and tendency to develop [6, p. 28].

Methodology

The theoretical and methodological framework of this study included the scientific developments of Ukrainian and foreign specialists on the development of a competitive position of higher education institutions and well-being management. During the solution of the problem under study, the authors analysed and justified the results of surveys of first-year students of the Taras Shevchenko National University of Kyiv within the framework of the UNIDOS-13*, university students, teachers of educational institutions of the Zaporizka Oblast (in the study by A.A. Babkov) and research by L.V. Lebedeva, A. Korchynska, A.A. Pikulova, and M.T. Telovata. These materials were chosen because of their relevance relating to the current year and to consider the competitive advantages of HEI in the opinion of educational consumers (i.e., students) and analyse the emotional state of Ukrainian teachers to provide appropriate recommendations on the development of a competitive position of HEI in Ukraine through personnel management as one of the leading tools.

In the course of this study, the authors employed general and special scientific methods, which allowed them to formulate the main research problems and justify recommendations for their solution. In particular, using the method of theoretical generalisation, the theoretical foundations of personnel management are developed using the concept of well-being as an objective process of developing the competitive position of HEIs, and the areas of the organisation's activities in personnel management are outlined.

The monographic method served as the basis for describing the trends in the development of the well-being concept in the world, identifying the features of this process in the context of implementing the principles of developing a socially oriented management system.

The method of scientific abstraction allowed summarising the results and formulating recommendations and conclusions through in-depth knowledge of the factors influencing the emotional state of teachers and the current results of surveys for the presence of burnout. Tabular and graphical techniques provided

a visual interpretation of the research results. The method of system analysis allowed substantiating the conceptual foundations of systemic shifts in personnel management as a tool for developing the competitive position of HEIs.

Results and Discussion

A necessary condition for competitive analysis of an organisation is to determine its competitive position. A competitive position is a comparative feature of the position that an organisation occupies regarding competitors. To determine a competitive position, it is necessary to choose the factors of its development that should correspond to the industry and corporate profile.

Factors of developing a competitive position constitute a set of factors of market and resource orientation that can affect the long-term competitiveness of an organisation and, accordingly, its strategic success. Specific factors will be the development of a competitive position for HEIs (Fig. 1) [7, p. 288].

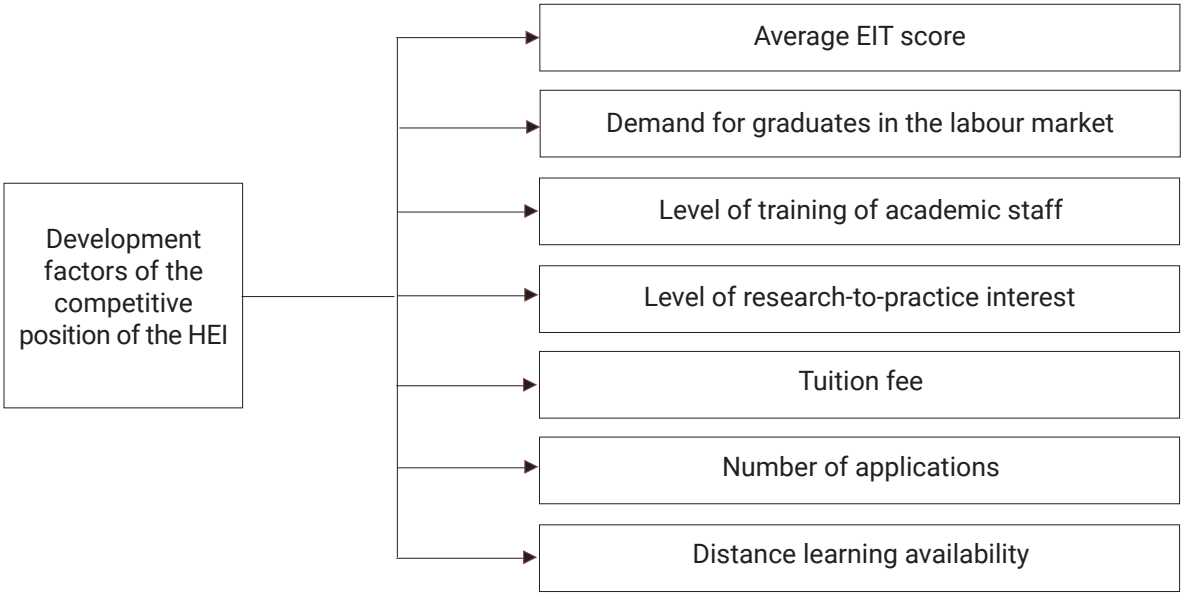

Figure 1. Development factors of the competitive position of the HEI

Source: [7, p. 288]

This list is not exhaustive and should be supplemented depending on changes taking place in the educational services market. Considering the fact that studying at a higher education institution is one of the crucial stages in the development and socialisation of a person, it is essential to understand what motives guide applicants upon enrolling to HEI. Proper analysis of the needs of consumers (applicants, future applicants for higher education, and business employers) will help create a strong competitive position.

Given that the choice of an applicant is influenced by a wide scope of economic, social, and psychological factors, as well as the complexity of the management system of a higher education institution, at the first stage it is advisable to identify significant motivating factors for enrolees to the university. The interrelation and interdependence of factors influencing the applicant's choice of HEI and possible controlling influences aimed at increasing the demand for educational services is presented in Figure 2 [8, p. 23].

The UNíDOS-13* University study, through a survey of first-year higher education applicants from Taras Shevchenko National University of Kyiv, identified significant reasons for their enrolment to HEI (Fig. 3) [4, p. 6]. The key factors upon choosing a higher education institution are as follows: prestige and status – 71.7%; the presence of the speciality in which the applicant wanted to study – 61.3%; the opportunity to get a high-quality education – 53.4%. More than half of students primarily rely on a high-quality education upon choosing a HEI.

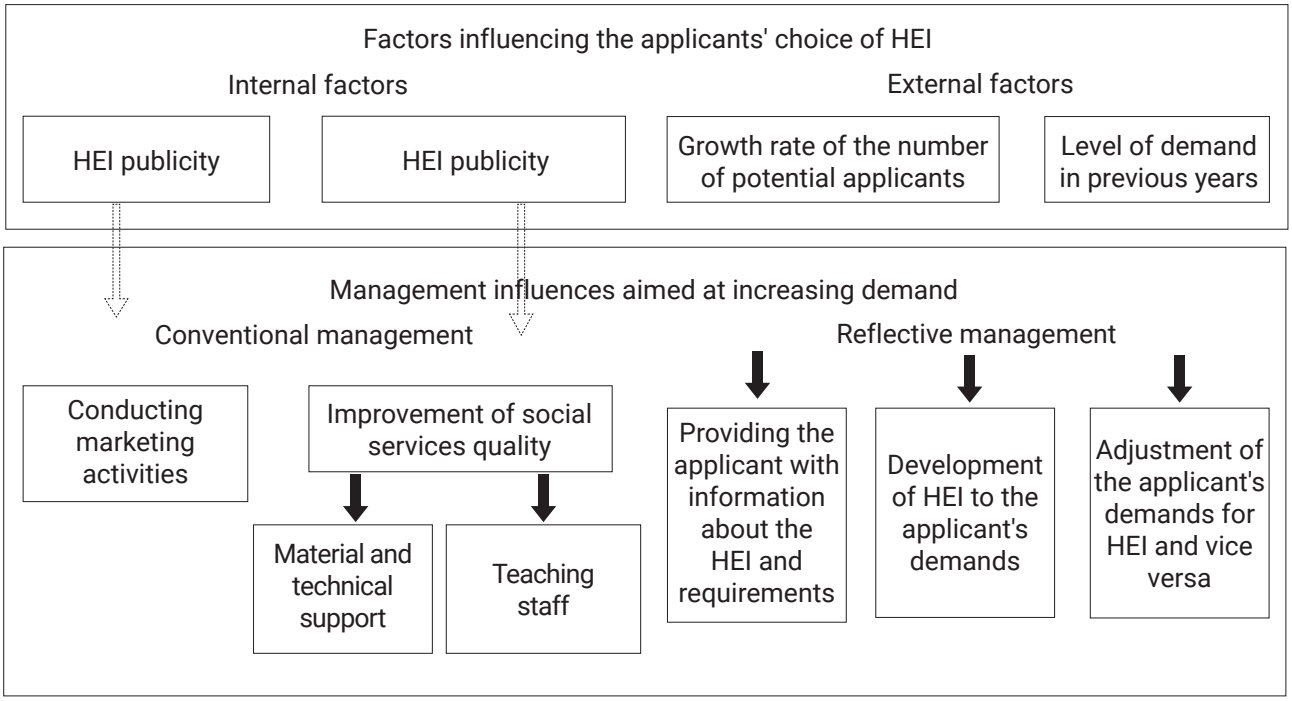

Figure 2. Interdependence of factors of influence on the applicant's choice and possible management influences

Source: [8, p. 23]

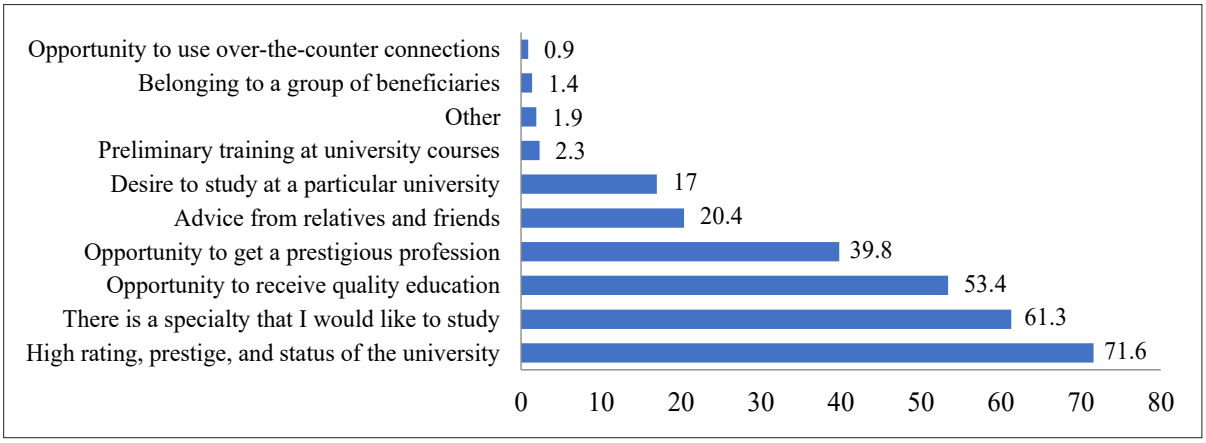

Figure 3. Motives for applicants' enrolment to HEIs

Source: [4, p. 6]

The study by V.A. Zernov notes that "the success of the efforts of education management aimed at its modernisation depends entirely on the nature and quality of teachers' activities. It is impossible to solve the problem of transition to a new quality of education without thinking about the quality of the personnel potential of higher education institutions" [9, p. 320].

Human capital is intelligence, health, knowledge, high-quality and productive work and quality of life, this is the main factor in the establishment and development of an innovative economy as the highest stage of its development. Notably, employees can considerably influence the financial results of the organisation.

Consequently, O. Grishnova [10, p. 53] identifies the following components: education capital, health capital, and cultural capital (1):

$$HC = Ec + Hc + Cc \quad (1)$$

where *HC* is the human capital; *Ec* is the education capital, which represents contributions to the person's intellectual development, that is, investments in upbringing, education, and professional growth; *Hc* is the health capital, which represents investments in a person that are made to maintain and improve their health and performance; *Cc* is the cultural capital, which represents contributions to the socio-psychological state

of an individual, that is, investments in ethical and spiritual education.

Ukrainian Western military districts are described by an emphasis on such a component as "education capital", which is undoubtedly the main one. But modern events, considering the pandemic and the crisis, have proven that the "health capital" and "cultural capital" are undervalued and require additional attention and reinterpretation. Physical and psychological health is the key to high-quality education and ensuring a stable competitive position of the HEI.

Considering personnel management as a tool for ensuring the competitiveness of an organisation and identifying the main areas of its activities in this field (Fig. 4), it is necessary to focus on maintaining a comfortable socio-psychological climate and influencing the motivation of behaviour [11, p. 168].

All this is combined by the well-being concept, which is popular among organisations that want to increase productivity and improve the personnel management. This concept includes 5 broad categories that are significant for most people: professional well-being; social well-being; financial well-being; physiological well-being; and environmental well-being.

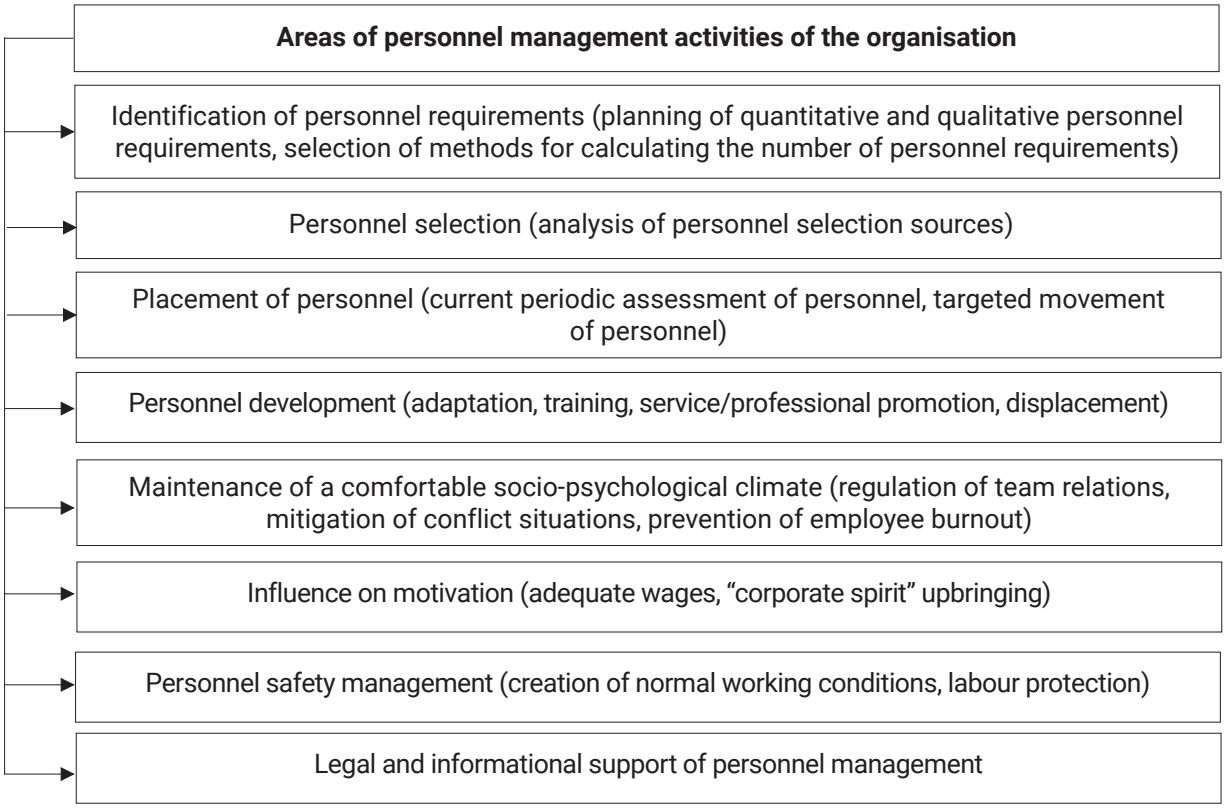

Figure 4. Main personnel management activities of the organisation
Source: [11, p. 168]

Positive results of implementing well-being programmes in personnel management according to the data specified in the study by O.A. Pikulova [12]:

– organisations, provided a high level of well-being, have better indicators and results in business: there is a doubling of employee engagement, a 70% – decrease in the number of stressed employees, 6 days fewer sick leaves, and a higher company income;

– for 86% of employers, well-being is the factor that most affects the involvement. 74% consider welfare programmes to be an essential aspect of developing an employer value proposition;

– in organisations with a high level of employee well-being, customer satisfaction is higher by 10%, share prices are higher by 12%, and sales per employee are higher by 27,000 US dollars per year.

– every dollar invested in well-being programmes saves 7 US dollars on medical expenses;

– well-being programmes can increase engagement by 8 times, productivity – by 3 times, creativity – by 3.5 times, "healthy" companies bring 3 times more profit, and if the company does not develop well-being, the risk of losing employees increases by 4 times.

Employees with a high level of well-being are more likely to be engaged in their work and feel supported by their organisation (Table 1) [13, p. 35].

Table 1. Impact of the well-being level on employee satisfaction

Employees experiencing		
High well-being	Vs	Low well-being
88%	Feel occupied at work	50%
83%	Enjoy their work	41%
84%	Loyal to the company (team)	54%
84%	Recommend their company as a great place to work	48%

Source: [13, p. 35]

To increase the interest of teaching staff in performing high-quality work, it is necessary to identify factors that affect their activities: comfortable conditions at the department and faculty; cooperation with the dean's office; distribution of teaching load; moral and material motivation; communication relations.

Data from the HeadHunter survey indicate that it is the representatives of socionomic professions (the "Person to Person" type of work) that are more susceptible to burnout syndrome than others. Teachers, physicians, bankers, social workers, and salespeople are among those occupations that are more at risk of experiencing emotional burnout.

Respondents from different regions of Ukraine believe that educators and teachers are most susceptible to nervous overload and emotional burnout. 42% of respondents are convinced that it is employees of educational institutions who most often experience stress at work (Table 2) [14].

Table 2. Professions whose representatives are most susceptible to burnout

Profession	Percentage of respondents
Teaching staff	42%
Medical professionals	25%
Financial sector employees	25%
Social workers	20%
Sellers	19%
Law enforcement officers	14%
employees of creative professions	13%
IT specialists	12%
Coaches and psychologists	10%

Source: [14]

It is necessary to highlight the main advice from the leading operations manager O. Chernenko-Duba on measures to reduce emotional burnout, which are as follows:

– "establishing openness and dialogue in working with people, two-way communication through continuous formal or informal communication to understand the psychological and emotional state of employees and the ability to timely respond;

– assessment of the abilities, needs, and aptitudes of employees, selection of the volume and type of work for each according to the identified factors. Workload increase only if the work results are successful and with the consent of all team members. Express prioritisation of the team's work to provide the necessary time and resources to complete tasks;

– identification and coordination of real expectations, areas of authority and responsibility, if necessary;

– employee mentorship and coaching, development of their abilities, discussion of any issues;

– consideration of the motivational factors and needs of each employee separately;

– cultivation of the need for professional and personal development at the department and company level" [15].

Before starting a transformation programme, it is necessary to create readiness and motivation in a person. Experts recommend gradually shifting the focus

from paternalistic care of employees to partnerships – when employees share responsibility for their development and well-being; apply only those corporate programmes that are selected by the employees themselves based on the survey results. One of the options that experts recommend is self-questioning, i.e., one can diagnose burnout in themselves, colleagues, or subordinates by giving an answer to the question (Table 3) [16]:

Table 3. Survey to diagnose burnout

No.	Question	Answer	
		Yes	No
	Nothing pleases you?		
	Reduced performance?		
	Are you procrastinating more often?		
	Colleagues and relatives annoy you?		
	No strength, no energy to do anything?		
	Are you starting to hate what you love?		
	Fail to see the future and meaning in a relationship?		
	Do you spend more time on social networks and games?		
	Increased consumption of tobacco, coffee, alcohol, or sweets?		
	Still feel tired after sleep, weekends, and vacations?		

Source: [16]

If 3 to 10 answers are "yes", the employee should contact a specialist and start working on their burnout.

Thus, for personnel management to be considered an effective tool for developing the competitive position of HEIs, it is necessary to bear in mind the direct dependence of such indicators as the quality of education and the level of training of academic staff. To maintain these factors at a high level, it is necessary to focus not only on the qualification skills of the teaching staff, but also on their satisfaction, motivation, and comfort of work in the workplace. It is for this purpose that it is advisable to introduce the concept of well-being as one of the most effective methods for setting up personnel management and preventing burnout among education workers today.

Conclusions

It is essential for enrollers to understand that they will receive a decent level of quality of education during their studies. Therefore, the level of training of academic staff constitutes one of the decisive factors in the development of a competitive position of the university. This indicator is influenced not only by the qualifications of employees in the education sector, but also by a comfortable socio-psychological climate in the team, motivation, and job satisfaction in general. Personnel management plays a vital role in improving these aspects and should be based, for example, on the concept of well-being, since nowadays, it is undoubtedly an effective method of increasing labour productivity. Since teachers are most vulnerable to burnout, university management should consider the current state of employees and, if necessary, implement appropriate anti-burnout measures.

Thus, the interest of enrollers and their choice in favour of a particular university, in most cases, will depend on the way the management adjusts internal processes and takes care of the level of training of teachers not only by conducting professional development activities, but also by improving the level of well-being and monitoring the emotional state of their employees. That is why personnel management can be considered one of the levers of influence on the competitiveness of HEIs and a tool for developing their competitive position.

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Політико-економічний підхід до створення самокерованого суспільства в Україні

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Анотація. Актуальність визначення неолібералізму насамперед пов'язана з потребою суспільства у визнанні національної ідентичності, створенні конкурентоспроможного самокерованого суспільства на принципах рівності та гідності. Ліберальна демократія є найуспішнішою моделлю у державотворчому процесі, однак у часи розквіту корупції та нерівномірного розподілу влади, так звана «ліберальна демократія» стикається із неоліберальною кризою. На сучасному етапі економіки виникає низка проблем, серед яких концентрація капіталу в природних олігополіях і корпоративний контроль стають фактично невирішуваними. Мета статті – проаналізувати політичні передумови трансформації українського суспільства, визначити можливості переходу від ізольованих монолітів олігополій до екосистеми модульної економіки, яка базується на малих або середніх конкурентоспроможних гнучких підприємствах, що є сприятливими для громади. Відповідно до цього відбувається розвиток самокерованого суспільства, яке здатне аналізувати політико-економічну ситуацію та отримати вигоду з глобально доступних можливостей. У статті були використані аналітичний та історичний методи, за допомогою яких проаналізовано перебіг історичних геополітичних подій, зокрема передумови виникнення ліберальної демократії в Україні за радянських часів. У результаті дослідження визначено концептуальну модель саморегульованого суспільства та його основні характеристики. Було розглянуто напрями розвитку економіки країни за допомогою взаємозв'язку систем бізнесу й освіти, що є передумовою економічної стабільності

Ключові слова: підприємство, національна ідентичність, неолібералізм, економічна система країни, ліберальна демократія

Political and Economic Approach to the Creation of Self-Governing Society in Ukraine

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Abstract. The relevance of the definition of neoliberalism is primarily related to the need of society to recognise national identity, create a competitive self-governing society based on the principles of equality and dignity. Liberal democracy is the most successful model in the state-building process, but at a time of flourishing corruption and uneven distribution of power, the so-called "liberal democracy" is facing a neoliberal crisis. At the present stage of the economy, numerous issues arise, among which the concentration of capital in natural oligopolies and corporate control become virtually unsolvable. The purpose of this study is to analyse the political prerequisites for the transformation of Ukrainian society, to determine the possibilities of transition from isolated monoliths of oligopolies to an eco-system of a modular economy based on small or medium-sized competitive flexible enterprises that are favourable for society. In accordance with this, a self-governing society is developing, which is capable of analysing the political and economic situation and benefit from globally available opportunities. This study uses analytical and historical methods that analyse the course of historical geopolitical events, namely the preconditions for the emergence of liberal democracy in Ukraine during the Soviet era. As a result, this paper provides the conceptual model of a self-regulating society and determines its main characteristics. The authors also considered the development vectors of the country's economy through the interrelation of business and education systems, which is a prerequisite for economic stability

Keywords: enterprise, national identity, neoliberalism, economic system of the country, liberal democracy

Introduction

Ukraine is at the epicentre of geostrategic problems and not only because of the country's geopolitical location, but mainly because it raises issues that are relevant to all liberal democracies in the world, which are concerned about the consequences of neoliberal politics. Even with the high risk that Ukraine may eventually return to systemic corruption, there is also hope to see the current neoliberal system transform into a new self-governing society that can solve the country's security and employment issues. However, it is better to start this study with the events that took place in Ukraine almost six years ago, from the Revolution of Dignity.

Before the Revolution of Dignity, Ukraine had almost 300 years of strong close relations with Russia, but not such as in most other states that were frankly not interested in being under the Moscow dictatorship. Ukraine was the key partner in all Moscow's affairs, and until recently, many key, vital, and strategic Russian production resources were situated in Ukraine. Therefore, the split was much more painful than expected. But why did it happen? Six years ago, Ukraine decided to follow the Eurocentric path. Interestingly, there were no leaders organising the Revolution; it happened almost spontaneously. The Ukrainian people suddenly and unexpectedly realised that they were different from the neighbouring Russians. The difference was in the nature of people, in the understanding that they can stand up for themselves not only as Ukrainians fighting for political change, but also as individuals who have rediscovered their dignity.

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Although the memory of poverty and self-doubt has not disappeared, the struggle for human dignity is changing the political and economic environment in this region. In other words, the Ukrainian revolution is based not only on economic or political reasons; this revolution is essential because of the recognition of the Ukrainian nation as a community of self-governing people capable of thriving in the modern world. The author of this study very well remembers the struggle to become worthy citizens of Lithuania, which almost 30 years ago led the Singing Revolution against the Soviet Union. Ukrainians have once again proved that the influence of a militarised despotic force on historical events in the world is decreasing and cannot stop the voice of people if they decide to change the country.

Ukraine has begun extremely intensive transformations and reconstruction of the country at all levels. The country's infrastructure is being updated with such intensity that it seems that in the past there was not even a precedent for such immense positive changes. Opportunities to reform the educational, economic, political, and other systems were long awaited after the collapse of the Soviet Union. Before the Maidan uprising, Ukraine was ruled by a central autocratic puppet government that depended on instructions from Moscow. These instructions were based on the idea that a person's true needs are much simpler than they are thought to be, and people only experience poverty when it turns out that their neighbour is living better. Thus, an autocratic, dictatorial regime cynically exploits this and keeps the population trapped inside the country's borders. Even today, only a small percentage of Russian residents can afford to get a foreign passport that allows them to leave the country. Furthermore, strict internet censorship and the spread of propaganda create apocalyptic stories about supposedly Western decadence, turning the autocrat into a saviour, master of the people and the nation. The exploitation of such a despotic regime kept Ukraine in backwardness, corruption, and kleptocracy. However, the population of the country understood that this could not continue and that all their difficulties had been overcome. They understood that their problems arose because of bad human decisions, but human decisions could change if the Ukrainian people fought for their dignity. Therefore, this does not refer to nationalism directed against Russians, as is sometimes promoted in the media. This aspect should be covered in more detail.

Nationalism promoted top-down must be separated from the individual recognition of national dignity that originated in a bottom-up manner. Nationalism is a political tool designed to replace the true national identity and dignity of the individual with a political attitude that is hostile, chauvinistic, and offensive to other nations or countries. Autocratic politics uses nationalism as a tool to promote the rise to power and use one community of people against others. Viktor Orban in Hungary, Vladimir Putin in Russia, Recep Tayyip Erdoğan in Turkey, Marine Le Pen in France, and many other populist leaders use the nationalism argument to manipulate people's feelings and exploit them as a political tool. After all, nationalism makes society limited and weak. This is almost the opposite of true national dignity. The situation in Ukraine is quite different. National dignity and independence in Ukraine have grown from the grassroots levels, from the united initiative of the active people of the country, without a clearly defined leader.

National identity is naturally formed at the bottom and goes up; this must be recognised freely and without confusion. This is precisely what the Ukrainian people realised. Ukrainians have recreated their nation, not through becoming nationalists in the narrow meaning, but through regaining a bright, decent, and hard-working national character, as well as through deep national and ethnic roots in the language, customs, national cuisine, and famous attire. At the same time, modernisation processes transform not only the country's political and economic systems, but also traditional values and national identity. S. Huntington notes that many countries seek to import only modernisation and protect themselves from Westernisation [1]. This approach cannot be applied to Ukraine, as it seeks to become part of Western Europe, although not through assimilation or loss of national dignity in Westernisation processes, but rather by changing its political and economic structure and benefiting from liberal democratic reforms.

Analysis of the historical background of neoliberalism in Russia and Ukraine

Why liberal democracy? Everyone knows that this political system does not guarantee that all groups of people in the country will achieve their goals. But

authoritarian politics is even worse; it goes much further, not satisfying any interests other than one – the interests of the autocrat. The main goal of an autocrat is to use power to protect the personal legitimacy, and they cannot take risks and share power with any competitor. Although it is still extremely difficult to solve all the issues, liberal democracy at least offers the possibility of a peaceful change of power from authoritarian to representative. Therefore, liberal democracy gives hope that the power of the state in Ukraine will be shared, and democratic procedures will open opportunities for positive reforms. Moreover, this is the first argument that positioned Ukraine on the path to liberal democracy. The second – an extremely high correlation between stable liberal democracies and the highest levels of economic, scientific, educational, legal development, and prosperity in the world. Democratic countries such as those in Western Europe, North America, and Japan are liberal democracies. Although, according to F. Fukuyama, who argues that liberal democracy can mean the end point of the socio-cultural evolution of humanity and become the final and best form of human rule, it appears that it is not enough just to proclaim liberal democracy to improve the national welfare and security [2]. Citizens of the country should develop a stable state, the rule of law and, most importantly, responsibility. In other words, the government should be held accountable for its decisions to independent citizens. A country's prosperity will not happen on its own; citizens must create and support this growth. Without the active involvement of citizens, even liberal democracy can become problematic.

When it comes to liberal democracies, there is a growing number of statements [3] and recognition that almost all liberal democracies in the modern world represent various forms of so-called neoliberalism. Neoliberalism is almost never clearly defined and has primarily become a term of condemnation used by critics. Neoliberalism requires the elimination of state interference in the national economy and the abolition of barriers to the free movement of goods and capital across national borders, and offers the foundations of a free market [4]. Advocates of neoliberalism have promised that this new era of carefree development will considerably improve economic performance in both developed and developing countries. Unfortunately, these promises were not fulfilled [5]. Neoliberalism has brought unexpected and devastating results, which are summed up by the famous saying that everything the economy is doing fine, but people do not. There are no exceptions to the rule that neoliberalism generates growing inequality everywhere [6]. Historian D. Stedman [7] fairly notes that the term "neoliberalism" has become a common expression of the horrors associated with globalisation and periodic financial crises. It is widely recognised that corporations thrive at the expense of a broader community. The accumulation of private capital was concentrated in natural oligopolies, which were also places of implementation, if not always inventions, then the most productive economic innovations [5].

The disparities and deformities of communities caused by neoliberalism threaten to disrupt the very foundations of liberal democracy, since the growth of the country's economy and power does not bring prosperity and security to the citizens of this country. In other words, neoliberal politics is mostly created and supported by lobbyists representing very particular interests of certain groups of people. Many programmes are created to address the interests of a minority at the expense of the majority of society. This continues to widen the economic and political gap between the business elite and the vast majority of the population. The so-called oligarchs are trying to achieve their personal goals using the country's policies. Therefore, those with the most substantial influence on political and economic reforms at the same time make the greatest profit from them; they mostly hide under the umbrella of financial institutions, which have considerably grown in the times of the neoliberal reforms [3]. Without social responsibility, private or despotic forces have no limits to their concentration. The fundamental doctrine of neoliberalism was well expressed by A. Smith: "the vile maxim of the owners of humanity is everything for ourselves, and nothing – for others. If the masters are given free rein, then we should expect a social and economic catastrophe". Most corporate businesses are focused on generating value, narrowly optimising short-term financial performance, and ignoring the broader impact that determines long-term benefits for society, including all initiatives to improve working conditions.

On the other hand, taking care of long-term benefits for society is also an indirect cost of the enterprise. Therefore, the price of a service or product must contain an additional value that is used to improve working conditions. However, these additional costs often make the product uncompetitive

in a market dominated by a price war. Consequently, it is becoming increasingly difficult to encourage long-lived profitable investments in an unprofitable and uncertain environment that generates destructive competition [5]. Furthermore, to the surprise of a proponent of Western neoliberal policies, the growing globalisation of markets has led to increased competition. Eastern "miracles" brought particularly fierce competition in almost all possible areas, which led to considerable economic and social tensions. Neoliberalism has changed more than just product prices. Notably, by rejecting the tradition of improving working conditions, neoliberalism has dramatically reduced social obligations. Accompanied by the growth of terrible and predatory financial institutions that only care about their survival in a competitive market, this has led to a crisis in the social sector. Instead of working for people and distributing resources evenly, corporate institutions care about concentrating these resources and investing in corporate power. Powerful economic elites, especially in the United States, survive in the market rather than serve the public interest. Thus, instead of ensuring prosperity for countries, neoliberalism brought tension, anger, and fear, accompanied by a disregard for the population and the dignity of the country's citizens. J. Crotty concludes that neoliberal theory has deep flaws in all its forms; it is a deceptive and dangerous guide to building institutions and shaping national economic policy [5]. In other words, global neoliberalism is driving the world towards a disappointing and possibly disastrous economic future.

After the collapse of the Soviet bloc in 1991, Ukraine's ties with Russia remained very close in almost all areas. Both countries decided to try the neoliberalism experiment and once again demonstrated what happens if all the conditions of a free-market utopia are actually met. The analysis proved that nowhere has the neoliberal mission been more successful in destroying social and economic trends than in Russia, where President Boris Yeltsin took simplified neoliberal theory seriously and did everything possible to comply with neoliberal prescriptions. The result of the neoliberal experiment in Russia was economic destruction, unprecedented anywhere else in peacetime after World War II. In just a few years, according to official statistics, Russia's GDP and investment in new factories and equipment have plummeted [4].

The same thing happened in Ukraine. Shock therapy, in the form of a free-market policy recommended by American advisers, destroyed the economies of Russia and Ukraine and created a corrupt semi-criminal ex-communist oligarchic system united with a clan of autocratic political bureaucracy. The unbridled nature of the oligarchs in Ukraine has reduced the population to the level of almost immense poverty. The term "oligarch" refers to a post-Soviet industrial and/or financial tycoon who "controls enough resources to influence the national policy" [8]. Most retirees receive a pension of 42 euros [9], which limits their chances of survival if they do not own fruits and vegetables on their small plots of land [4].

In other words, the neoliberal reforms in post-Soviet Russia and Ukraine were extremely destructive. They pushed countries into a much broader crisis than when they were in an isolated Soviet system. These reforms have increased the number of deaths due to increased alcoholism, suicide, and homicide, infectious diseases and stress-related illnesses. Like other countries that have dared to take part in the neoliberal experiment, Russia and Ukraine are facing the incredibly devastating consequences of sharp inequality between rich and poor. Thus, the Revolution of Dignity is not only a political revolt against despotic autocrats, the manifestation of national dignity, but also an uprising of the Ukrainian population against poverty. Neoliberal reforms destroyed the conditions necessary for productive, symbiotic relations between the government and the economy, the state and the market, as well as between micro- and macroeconomic activities [5].

Conceptual approach to creating a self-governing society in Ukraine

The restoration of normal conditions for safe life and recreation in the country begins with the normalisation of relations between the authorities and society. It is worth remembering that the success or failure of liberal democratic reforms in Ukraine are closely linked to such aspects of everyday life as security, employment, accessible healthcare, education, and social costs. This critical opinion should be thoroughly investigated. The intensive transformation of Ukraine began as an uprising of the country's residents, who demonstrated that they had enough gunpowder to protect their dignity. However, the country's weaknesses, especially security and poverty, cannot be identified solely by addressing the issue of dignity.

The restoration of normal living conditions and security in the country can be achieved through the restoration of educational, political, and economic foundations.

It is vital to emphasise that optimistic expectations for the activation and reform of a democratic society in Ukraine should be built not on corrupt bureaucracy and oligopolies, but on social principles that focus on equality and human dignity. Ukrainian ambassador to Canada A. Shevchenko fairly notes that there is such a danger that "having killed a dragon, you can turn into a dragon yourself" [2]. While there is no doubt that political change is rapid and irreversible, the situation is slowly changing. It is crucial to maintain the enthusiasm of society, seeking opportunities to direct it towards new progressive measures in science, politics, economics, and other areas. However, even if citizens are united and have good intentions, they often do not understand the political and macroeconomic processes. There is no trust in any new system unless it provides security, a chance of survival, and a living. Therefore, it is of paramount importance for the government to take care of improving the living conditions of people, without waiting for a better economic situation. The government should enable people to solve their personal problems. How to achieve this?

Ukraine houses many projects that plan investments to be transferred to mega-industrial and agricultural projects that strengthen the country's economy and use the potential of large corporations. However, the key project and the key potential of any country is its people. It is highly important to treat people as equal citizens, and while no country has achieved perfection on this matter, some societies are doing much better than others. If people see that they are ignored and oppressed, their hope for the future will decrease, and their contempt for political and financial institutions will increase. Therefore, it is necessary to invest in the country's residents, especially those beginning to see themselves as capable of becoming self-governing. It is important to educate those who can create jobs instead of using them, those who can create a productive and positive environment not only for themselves, but also for others. Even a small percentage of inspired and enthusiastic people can determine the well-being of a city or region.

Ukrainians have already started creating communities that independently solve their local issues, as people take part in decision-making. Instead of an amorphous mass of people, active communities arise, which create a vision of their future and implement it. Creating local communities is a fundamental component of a good society [10]. This is especially true in Ukraine, where new leaders are trying to eliminate corruption schemes and try to change the situation. The country can solve problems faster thanks to those openly and actively involved in transformational processes, who are motivated to change living conditions. The role of such leaders and propagandists of radical reforms is to say: "Look, you can find another way out". It is essential to support people who want to change the country for the better [11].

Ukraine already has interesting initiatives to create a society that is guided by its individual efforts. One of them was created in 2015 in Novopskov, Luhanska Oblast. The newly formed community of Novopskov can use the regional budget for its local needs [12]. Previously, only a small part of the budget was provided to residents of this region, but now the community decides for itself what to use the budget for. In the same year, the community of the area decided to eliminate the bureaucratic nomenclature, which was disproportionately large, expensive, and inefficient. Furthermore, instead of sending taxes to Kyiv, they now use these funds for local needs. The local population of the village, which had been treated as a hopeless province, changed dramatically. Now citizens are exploring their new opportunities and finding more and more of them. People there get more jobs and are motivated to improve their living environment. Chairman of the Novopskov community V. Haiev notes that the number of active citizens has increased, because they realised that they are important for society, that they can influence the quality of life and security of their district, and also realised their capabilities.

Local residents have created projects and found ways to make their city more comfortable to live in. Financial independence and the independence of local regions are crucial because thanks to the development of communications, logistics, and other infrastructures, it hardly matters where someone is located. The activities of local communities substantially contribute to the uniform distribution of decentralised development of the country, and this is vital for all post-Soviet countries. This practice of regional self-government can be transferred further onto other regions to make people capable of

stabilising the environment, ensure security, and generate employment. Furthermore, this approach, which makes communities self-governing, should be extended to other areas, such as education, politics, and economics.

People all over the world are looking for a decent, independent life. There is a strong social tendency to become independent and self-sufficient citizens without requiring the favour of the authorities or bureaucrats. They are aimed at creating jobs, not finding affordable jobs in the market. This means that those who work also create jobs and control businesses. Creating and selling something created is not equal to selling oneself. Being a co-owner and co-author means that employees care about their business as much as they care about their personal well-being. New businesses are often built not on forms of exploitation and remuneration, but on creativity and a proportional share of workers' profits. People of such self-governing teams and communities create a completely different type of society. A society of creators, discoverers, and innovators who can motivate each other and put forward ideas that previously could not be implemented. Moreover, these same people are also a society of consumers who shape the market by choosing the trends, fashion, and preferences of tomorrow. Neoliberalism with one-sided opportunities favouring rich members already competes with the so-called post-Ford business models, which are mainly used by small and medium-sized enterprises (SMEs).

Many great businesses often literally grow out of small teams that comprise several members, without considerable investment or external support from the very beginning. A small group of people with a good idea and enough perseverance can create a technological breakthrough. Their innovations can radically transform the entire economy sector. Such teams create generally accepted solutions in many areas of human activity that can spread around the world in seconds, which not only brings high profits, but also changes the understanding of the living world. Because of their efficiency, these solutions eliminate old technology, approaches, and obsolete forms of infrastructure in an incredibly short span of time.

The abandonment of old methods is happening so quickly that even academic books and courses at many universities often lag behind the pace of technology development. However, this happens naturally, as some developers grow faster than others. Changing the world's leading technology preferences often comes from the creativity of small or medium-sized development teams that can quickly attract attention and funds. Notably, it is no coincidence that SMEs are the backbone of the EU economy. Not only do they dominate, but they also make up over 99% of all businesses. The trend of developing small teams in the EU is also growing due to full automation of production. The number of employees who perform manual operations and transfer these operations to suppliers in lower-paid locations is constantly decreasing. EU and US employees are increasingly working on marketing and innovation, building infrastructure, testing systems, giving lectures, or contributing to retrospectives. Very often, the vast majority of enterprises take part in research processes in one way or another. Modern industry already adheres to the idea that all manual operations should be automated. Economic growth is becoming more synonymous with inventing new approaches, products, and services that are rapidly transforming into models of activity in almost all areas and are rapidly spreading around the world.

Modern relations between universities and business in the context of globalisation

Even small businesses can operate globally. The constant decline in transport and communications costs has led to the realisation of the global economy on a scale greater than was possible several generations ago. The new generation of creators no longer needs to be located in one place. Conferences and meetings are being held on the Internet increasingly often. Industry should not be located in urbanised areas; it moves not only from major cities, but also to different countries or continents. New forms of division of labour and social mobilisation are becoming incredibly flexible, and team members located geographically in the most remote parts of the world can develop projects together. The main players in the new economic era are not only large corporations, but even more SMEs that can effectively generate innovative ideas. Each enterprise occupies a niche that becomes part of a much larger division of labour and characterises the global creation of new economic opportunities for other enterprises. Solving particular issues and reaching a global audience considerably increases opportunities. A stagnant and limited mentality is no longer competitive in the global market

and can only survive through corruption schemes. It goes without saying that any clandestine policy is decided in the future with open and creative approaches. Isolated corporations that do not become modular and flexible will not become competitive anytime soon. Consequently, the new opportunities of global markets that have been opened up for Ukraine, along with extensive opportunities, also bring strong competition.

It is worth emphasising that global markets are extremely saturated and require a lot from those who enter them. A high level of automation and well-designed products render the quick entry into most EU or US markets impossible. Competition in global manufacturing markets is so intense and fierce that a manufacturer without a unique product has almost no chance of survival. Profits usually account for only a small fraction of turnover, and if it is not regularly invested in innovation, it can lead to bankruptcy. The development and innovation of the company is not just the goal of the initial stage, but the key to survival in global markets. The global economy is not only about expansion across countries and continents, but also about overcoming political and economic barriers; more importantly, a global economy means a new global vision that meets the needs of every person on the planet. Therefore, the creator must keep in mind cultural diversity and different mentalities when creating products for global markets. Such groups of creators are multinational not by chance, but intentionally. Furthermore, the multi-ethnic aspect becomes a real source of creativity. Differences between members of a multicultural team create much broader opportunities to look at the same world with different eyes. Notably, such a creative work environment contributes to the enrichment of national identity and dignity, since the creative process makes everyone equal, and no nation is "bigger" than the other; each participant enriches the team with fruitful information. These team members are guided by a scientific approach based on technology, which allows them to spread ideas to the global market through the Internet, media, and mass production. Technology is becoming an important tool for generating wealth and a safe society.

In a global environment, technology is evolving so fast that the capital invested in new technologies is becoming irreversible in a shorter time than ever. The question of choosing the right technology to invest in is crucial, mainly when investing in economies of scale entails a substantial risk of significant losses. Any investment should consider that profit rates can fall below average in a short time, and there will be no chance of exiting, except in cases of capital loss or bankruptcy. Obviously, large businesses that are unlikely to depend on a particular product or service are becoming risky in present-day rapidly changing market for many reasons. There are many stories about market leaders who have been pushed out of leading positions in a short time. For example, Kodak did not develop a digital camera and went bankrupt. Nokia has been supplanted by smartphone manufacturers, and the same is happening with petrol cars and many other outdated technologies. Even minor changes in consumer preferences can create or close certain markets; for example, taxis that have built an entire infrastructure over the years are forced to shut down due to the more convenient option of calling a taxi using the Uber app. The same happens with supermarkets that have started selling online. They have overcome such nuances as a good location and well-known popular supermarkets because they deliver purchases right to the door. One must remember that the market is unpredictable, it is a living organism that reacts to an almost infinite number of factors.

Moreover, the humanity is facing the 4th industrial revolution, which has a much broader vision of industries where processes are controlled by various innovative methods, including artificial intelligence. Fully automated industry scaling is not the future. Nowadays, there are many businesses where people simply test systems and improve them, rather than working with production and the product itself. In other words, people are increasingly working with technology and system development. Consequently, those currently enrolled in schools are unlikely to ever work in manual operation, as they are already uncompetitive. The overwhelming majority of industrial production in all sectors is already on track to be reorganised into a new industry standard. Robotics and artificial intelligence perform many functions where there are not enough people. This dramatically changes the structure of industries and the economy. This approach allows increasing production capacity incredibly quickly in almost any industrial sector, if necessary. The only real limitation is usually market demand, which is mainly related to consumer preferences, promotion, and price levels. Developing a product that meets consumer quality and price

expectations can lead to increased demand in the short term. However, it usually takes years to develop a well-known brand. Consequently, Ukraine can accelerate the reform of the old industrial infrastructure through cross-border investments in production on Ukrainian territory, which will initially be produced for non-Ukrainian brands. This approach has rapidly developed the economy of the Far East and can be successfully applied in Ukraine as well. It is currently a good time for this approach, production prices in China are rising due to rising living standards and domestic consumption. Cross-border investments would create sustainable employment and an understanding of innovative approaches for the further development of the industrial sector. However, such investments will not transpire without qualified and active specialists who are ready to introduce new technologies. The educational level is key in the era of modern technology.

The Ukrainian educational system still cannot train modern professional specialists, and this is the most critical issue, where many other problems are rooted. Although Ukraine has one of the best rates of higher education in the world, the current higher education system in Ukraine is mostly a legacy of the Soviet era. According to the newsletter of the Ministry of Education and Science (August 2015), 70% of 18-year-olds in Ukraine have entered higher education institutions. That is 1.7 million students in a country with a population of 45 million. Centralised, stagnant, and isolated Soviet education was built on hopeless backwardness. After the collapse of the Soviet Union, bureaucratic structures and low teacher salaries further reinforced the post-Soviet understanding (which still dominates Ukraine) that education is not a professional development, but a formal procedure for obtaining a diploma.

Another myth is that one can get a job not because of technical skills or professional knowledge, but only because of connections and personal relationships. Therefore, there is no data on the employment of graduates. Universities are not interested in such information. Links between universities and business are emerging in Ukraine today, with almost no history of their creation. Most employers have little ability to influence universities, and there have been almost no initiatives to link university education to jobs [13]. Students have no support or help in finding a job. For many, parental connections or the black market are the reality of job search [13]. This situation demonstrates how universities preprogramme a new generation for membership in a corrupt society. Universities in Ukraine continue to suffer from international isolation, deep corruption, and incredibly inefficient use of funds. Ukraine needs modern European and non-marginal post-Soviet universities.

After the Revolution of Dignity, revolutionary reforms also began in the field of education. A massive reduction in teaching positions has dramatically reduced the number of higher education institutions (from over 800, with a target of 100). Introduction of new legislation to combat educational issues in Ukraine by abandoning the control system of the central ministry and replacing it with financial, academic, and administrative autonomy for universities [14], which contributed to the development of a new type of higher education institutions. The main purpose is to transform the concept of higher education focused on the diploma into centres of innovation and independent thought. Instead of creating clerks and workers who are submissive to the old bureaucratic systems, universities should train inspired, creative, and open people who can quickly adapt to changes in the world. They should be self-sufficient, capable of creating new jobs and earning a living unassisted, instead of depending on the system and expecting it to take care of them.

Universities need to be transformed into powerful centres where the creators of the future country study. Students should become active and responsible citizens who can take care of their country. They must create and promote initiatives that address people's needs; these initiatives must be able to compete with the corporate and political interests of lobbyists. This would make universities real centres of thought, a concentration of the country's potential, places where a new generation learns to create the well-being of the society in which they live. At present, this potential in Ukraine is still being mobilised on behalf of oligopolies, which, instead of generating the wealth of society, shamelessly rob it. The present-day asymmetry of information, the incredible contrasts of poverty and wealth, the inability to solve the problems of society and other negative issues of Ukraine are mainly rooted in the lack of qualifications and education of society. The most successful EU countries, such as Denmark, Sweden, Germany, etc., are educating new generations with a strong emphasis on creativity and entrepreneurial spirit. How do they do it?

Students have the best opportunity to start developing in various fields while studying at universities. They can learn technology by practising and

taking part in development. Universities in Ukraine create workshops and development centres where active students begin to develop their start-ups and, most importantly, they enter the world market. Universities create a place for start-ups where students enter into their first contracts, even while studying. As self-driving citizens who do not use, but create jobs; they begin to build not only their future, but also the wealth and prosperity of the country. Universities are centres of a creative atmosphere that motivates and encourages the next generation to be able to build the country of tomorrow. In 2018, almost 20,000 European start-ups are expected in various workshops. They will try to destroy industries in the harsh reality of an already extremely saturated market. However, what are these workshops for?

Experts have noticed that experienced industries have very well-organised processes for developing new technologies, services, or products from concept to multiple tests and prototyping to final implementation. The same approach is professionally supported and maintained in start-up workshops. Furthermore, there is no need to invest in resources and assets for each start-up separately, since the success rate of a start-up is usually under 10%. Investing in a workshop can cover many start-ups. Some workshops in Europe host thousands of start-ups every year. These investments have very high returns because they are not only small, but also because many ideas and tests can be tested on one platform: in other words, these investments are reversible. However, investing in one corporate business, in case of an incorrect strategy, is irreversible and will bring losses. Workshops are usually equipped with new digital technologies, prototyping mechanisms, frameworks, and studios that make creating, prototyping, testing, and promoting new products incredibly fast.

There is no need for unnecessary bureaucratic schemes and considerable investments in each start-up individually, since many start-ups can use the same workshop for everyone. In post-Soviet countries, there is a massive gap between those who are proactive, active, and capable of taking risks, and those who do not do it. However, start-up success stories dramatically change the mentality of society, as public attention is focused on positive and fruitful ideas that shape the future of the country. It appears that the Ukrainians have already realised this. The workshop culture started in Ukraine and has already reached a high level thanks to start-up centres in Kyiv, Lviv, and Kharkiv. They are promising. These workshops are already receiving certain funds. The lack of funds for start-ups and the deliberate creation of new modern jobs in Ukraine can lead to a wave of emigration to other European countries to find more paid jobs. Access to global markets and jobs outside the country is an important option for low-income people who cannot find work locally, especially for those who cannot support themselves or their families. In any case, emigration will considerably increase, but without creating a start-up culture and supporting new entrepreneurs in Ukraine, this can be devastating. What can one expect from the start-up trend, and how will it change the situation in Ukraine, when wealth is still disproportionately concentrated in oligopolies?

A new strategy for a powerful engine of the Ukrainian economy

Wealth in Ukraine is still concentrated in the hands of several owners of oligopolies. But no company can operate without healthy and skilled workers. Therefore, the same oligopolies inevitably depend on human resources. It is worth mentioning that workers are the same citizens who have decided not to suffer from poverty and crime anymore, those who have enough character to make choices and fight for their dignity. Employees may demand attention to their requests. They can stop the business if the owner is too busy to meet with them and take the workers' requests seriously. They have already learned how to create communities and are learning how to create jobs. Furthermore, they are opening more and more opportunities to emigrate to other European countries to find better-paying jobs. In fact, they do all this, but the scale is still small compared to what would have happened if the oligarchs had not factored in the change in the situation. Employees are beginning to address the issue of a safe living and working environment. They already have all the options to remove the roadblocks hindering the potential of society and the growth of the country's wealth. Interaction with the culture of trade unions and communities that seek to solve their problems with the support of the government and the involvement of corporations is the most effective accelerator of the country's wealth growth.

The creation of effective communities can contribute to the constantly updated improvement and development of problem-solving programmes. This can lead to significant stabilisation of the environment in terms of security, prevention of corruption, reduction of crime rates – even if the wealth of society grows slowly. Instead of concentrating wealth

disproportionately, it will be evenly distributed among communities, among those who actively solve their everyday problems. In other words, to stabilise the situation and establish security in the country, there is an inevitable need for active and responsible people who support each other through relations and activities in the community. But where is one supposed to begin, what can one do to overcome this difficult period with minimal losses?

The Ukrainian economy is largely dependent on Soviet heritage factories, built as vertical organisations that are inefficient, not competitive on the world market, risky, and costly to maintain and transform. Internal structures are completely corrupt and entangled in personal relationships that are almost impossible to transform without changing the staff entirely. It is often more optimal to build a new technological structure with new codes and rules from scratch, instead of taking the old infrastructure with old codes and regulations and transforming it. It is also important to note that instead of preserving isolated corporate monoliths, a more optimal way is to create open modules that would contribute to a safer and more sustainable production environment in Ukraine. This approach is similar to creating "Lego" parts that provide almost unlimited opportunities for growth, large industrial formations, instead of a few centralised isolated oligopolies, which may look simpler in the short term, but can quickly become obsolete and cause many difficulties in reform in case of a change in market preferences.

Vertical integration itself has lagged behind, as many modern corporations (Apple, Adidas, Nike, etc.) do not have production lines. They are engaged in development and marketing, not in production itself. It is too risky to depend on a set of production constraints because technologies rapidly change. Changing a supplier is easier than giving up production when the technology becomes obsolete. Even in very conservative markets, such as the automotive industry, where safety and quality are of particular importance, today every car has elements from thousands of suppliers (Audi has over 1,200, Tesla has over 2,000 different suppliers in each model). Instead of focusing on one state-of-the-art production, corporations have become well-organised modular vendor structures, investing in innovative teams of brand developers and marketers.

There are also strong trends in the use of modular structures within industrial enterprises. Departments are transformed into self-managed modules that can be easily transformed or sold if necessary. Small teams of entrepreneurs are flexible and have high investment irreversibility, as investments can be reused in a changing situation. Even in case of a failure, small teams can quickly adapt and restart to meet new market challenges with new approaches using relatively small resources. The probability of success in this case is higher. Therefore, creating smaller and more flexible parts of large self-managed businesses can lead to much more optimal investments in the long run. This trend can be traced in all sectors, among which the most noticeable are software corporations (Google, Wix, etc.), where changes require complex and fast forecasts and are very predictive of the rest of the market. Hardly any people in horizontal organisations make up the hierarchy. Instead, they follow the family-owned company model. Fast-growing organisations follow a so-called flat structure, combined into their own companies and guilds. The trend of horizontal organisations comprising relatively small self-managed modules is a growing organisational trend of the world's largest companies. This contributes to openness, innovation, allows "staying tuned" and enables rapid growth. Everyone has their personal area of responsibility and can make quick decisions. Furthermore, it leaves room for equal human relationships, since everyone is factually on the same level. One of the key aspects of this approach is that it corresponds to the aforementioned trend of dignity and focus on human self-esteem. Even new products in corporations often start out as new start-ups that eventually gain worldwide recognition.

Small and medium-sized start-ups could grow even faster than universities if they had access to professional resources of technical potential and could get know-how from experienced enterprises. If inefficient Ukrainian enterprises, especially those that are owned by the state and are an insurmountable burden for the country or factories that lose profits and survive from subsidiaries, would support the creation of workshops, then start-up formations would begin to appear next to them. These large businesses would benefit from small, dynamic, self-managed start-ups that do not cost the enterprise anything, but can develop innovative technological solutions, render quality services, or create marketable products. Smaller start-ups can be quickly restructured, sold, or closed if they are no longer required, without

affecting the underlying enterprise. Each start-up team can decide how many employees it needs, how to organise itself to be profitable, where to get sources, and what product or service to focus on. Thanks to large enterprises, there would be no need to invest in the assets of start-ups that are part of the industrial sector. Workshops and shared resources would enable various start-ups to get rental-based opportunities, equipment, and services. In addition, the growth of a certain number of such start-ups would ensure the profitability of such workshops and further expansion of shared resource systems. At present, many large factories in Ukraine are on the verge of bankruptcy. In 2017 alone, the implementation of the government's economic policy led to a decrease in the number of economically active enterprises by 4%.

Without changing its economic policy, Ukraine is on the verge of becoming a cemetery of dead factories with gigantic losses of industrial capacity. In difficult situations, any business will try to sell or close unprofitable departments or divisions and start transferring these services or products to other suppliers if necessary. However, in case of inefficient allocation of resources, the Ukrainian government subsidises or refinances these enterprises to save jobs in the region and guarantee economic stability. Many large enterprises in Ukraine survive thanks to subsidies and support mechanisms initiated by the country's government. At the same time, this is a good opportunity for the government. These non-profit divisions, such as laboratories, logistics, or marketing departments, could be evaluated in terms of working not only for one corporation, but also for the global market, if they could be transformed into independent and profitable enterprises with professional consultants from universities. Maximum value can be created if such a programme is combined and integrated with academic potential through tendering process for higher education institutions. The university that prepares the best scenario and strategy for a block, technology, or product wins the tender. Each subsequent graduate would become better than the previous ones and better prepare plans for the preservation and growth of the country's economy. If universities could get the necessary funds for start-ups in such a fashion, these funds would be much smaller and much more efficient than those usually invested in large enterprises and dissolved through corruption schemes with very little, if any, lasting positive effect.

The development or support of large enterprises, their divisions, their products, or services would be reliable and safe, provided that they develop as self-managed, profitable modular units that can survive independently of a large enterprise. Before bankruptcy, inefficient, large businesses could be transformed into smaller, easily managed divisions. Such divisions could act as a separate and independent profitable business, providing each other with the necessary services and materials, naturally fighting for profitability, the best prices, and quality. They could actively seek new opportunities and new global markets for their products or services. This could substantially protect the country from bankruptcy of oligopolies in a highly competitive environment. There is no single rule for different situations, because each enterprise is different, but it is clear that each division must become modular and profitable. Such a strategy can save valuable resources of large enterprises from losses, which are currently being processed as monoliths, and can create an ecosystem of strong clusters. Instead of stagnating in isolated monolithic industries, this approach will change the development of clusters with a concentration of interconnected businesses, suppliers, and related institutions in a particular industry. Parallel development of independent private structures could compete and complement each other. Thus, even in strategic sectors, such as the construction of new roads or security services, there is no need for dominance or strict state control.

Government support and regulations should only be needed to adjust taxation or other regulations to track excessive deviations from the socially optimal balance, deviations that disrupt democratic and liberal relations. Despite the fact that there can be no single rule for all situations, such norms must always correspond to the highest social benefit. Therefore, the market is not a source of good or evil, but a powerful economic engine that needs to be given enough space to do its job, as well as properly protected [10], since any business needs a community, and any community needs a business. No business can operate without workers, and no community can survive today without salaries that are somehow generated by the business. Businesses generate taxes and wealth creation opportunities for the country's citizens. Communities provide public assets and a supportive environment [15].

If these connections are not valued, both sides

suffer. People go in search of a better place with better opportunities, to another city, or emigrate to another country. A region without people is losing its former potential. This happened on a large scale in Poland and Lithuania. Recovery of lost human resources is incredibly slow. The same rules apply for a business, without the necessary resources, it downsizes or goes bankrupt, creating cascades of losses for owners, partners, employees, and the entire country. Restoring a business infrastructure takes a long time. Ukraine has already witnessed neoliberal economic programmes that had been directed top-down and contributed to the growth of corrupt systems at the expense of society. Such strategies are synonymous with the destruction of both the economy and society. Therefore, it is necessary to consider a different method not from the top of the political sphere and oligopolies, but from the grassroots level of society, the development of sustainable communities and a positive social environment. This direction creates not personal, but shared value.

A growing number of companies, such as GE, Google, IBM, Intel, Johnson & Johnson, Nestlé, Unilever and Walmart, Tesla, etc., have already made significant efforts to create shared value by restoring the intersection of society and overall company performance [15]. The concept of shared value is dedicated to establishing healthy relationships between business and society. The shared value strategy is inseparable from its social impact and understanding that the main business opportunities lie in the integration of business and society. This means that corporate benefits should be evaluated not just as the pursuit of profit in itself, but also from the perspective of society. Economic growth can be achieved through an egalitarian shared value strategy, where investment follows the lines of shared value and generates profit for society. This happens naturally when social factors are considered together with the economic and competitive results of the enterprise.

A thriving society can be created by realising that there are social issues that matter. The company should not look evil or harmful to the world where people live. The economic success of the enterprise and the future of the company can be achieved by creating a product that makes the enterprise innovative along with the shared value horizon. In other words, the boundaries between society and business must be erased. The success of a company and community can be mutually reinforcing. Usually, the more closely a social problem is related to a company's business, the higher the ability to use the company's resources, opportunities, and benefits for society [16]. This is why joint value practices and responsible investments become difficult to distinguish from the day-to-day activities in successful modern companies. Modern companies create shared value because technological improvements naturally displace old inefficient approaches and bring environmentally friendly and community-friendly solutions.

It should not be mistaken that conversations about the economy, markets, and goods become important only when they involve a heavy industry. Not so long ago, the largest retailer in the world sold used books (Amazon). Another group of well-known entrepreneurs started by searching for text content on web pages (Google). The world's largest taxi service provider costs more than half of Ukraine's GDP and started less than a decade ago when two guys could not call a taxi late at night in winter (Uber). Furthermore, this does not refer to corrupt relations with governments or private ties with resources. Their rise to the world's most prominent entrepreneurs began without any protectionism or fraud schemes. Almost anyone can do this. There is an incredibly large market for almost every little thing in the world. A unique, thriving society can be created by encouraging people to create and sell their original products instead of selling themselves. To new generations, selling oneself is becoming synonymous with losing one's dignity. The sale of goods, not only in a narrow consumer meaning, but also in that of created objects of art, science, etc., stimulates the growth of an educated, creative and active, self-governing wealthy society. Therefore, motivation and education of a self-guided society generate the highest social value. There are ample opportunities to become self-managed for almost any profession: scientists write books and receive royalties; doctors have their private offices that people prefer over the state healthcare system. The same applies even to teachers who give private lectures or sell online teaching courses, linguists who create grammar checking systems. Some, for example, open their own music and ballet schools. No boundaries between people cannot exclude their opportunity to express themselves and earn a living. All areas blocked for the population

by oligopolies, and even those that were monopolised by the state, should become accessible, except, admittedly, for certain public security organisations.

Ukraine can be recreated by new generations, who come with waves of new graduates every year. Thousands of students graduate, but only a few of them are ready for changes in their country. However, the potential of education is not being exploited. It is worth unlocking. Students should be taught to use their abilities for the benefit of themselves and the country, instead of leaving them trapped in bureaucratic and corrupt systems. Investing in research and innovation through universities will encourage a new spirit of education development. Such an atmosphere will develop a new economy and policy of the country based on science. This, for its part, would strengthen education's reputation as the country's new centres of power. Together with creating seminars and engaging students in start-ups and forums from the very beginning of their studies, this would create the foundations for the middle class and raise the standard of living. In this way, people grow not only in terms of qualifications, but also personally, becoming self-controlled, responsible for what they do and for the environment they live in.

Entrepreneurship is an excellent tool for creating employment and wealth. There is a way to use it by meeting human needs and rejecting the narrow concept of capitalism that has prevented businesses from using their potential to solve the broader problems of society. However, the business environment in Ukraine, which is still focused on inefficient schemes, must be transformed and prepared for investment. The current concentration of a country's resources in the hands of a few people is very inefficient and risky. Ownership should be distributed among new types of managers, those who are open, active, responsible, purposeful, and have the qualifications necessary. In Ukraine, there is a growing understanding that this can be done through education. Notably, encouraging a new generation of people is crucial because people feel capable and empowered when their opinions, initiatives, and decisions matter. Such people can eliminate any obstacles. They can change the country's environment. In other words, those who are now dominant and dependent on corruption can be replaced by educated people with a different mentality.

Conclusions

The ideas, approaches, and solutions discussed should not be taken as the only possible or refined concept, but rather as considerations for further discussions. This review is an attempt to explain the ideas that guide the education of a self-governing society. While there are positive examples to learn from, there are no predefined patterns, because every society is a living and natural organism that needs to be respected and maintained. There are still many obstacles in Ukraine. However, it is also hoped that educational reforms and anti-corruption activities are not official bureaucratic ceremonies. These initiatives are based on the understanding of many Ukrainians that the future of their country is linked to a sustainable and decent society. Thus, the purpose of the new government is not only to rearrange the seats of the nomenclature, but also to support independent, self-governing active citizens. Consequently, the focus should be shifted from bureaucratic systems, politics, and oligarchs to the country's residents and their needs. People should take care of people.

In conclusion, while the situation remains very problematic, the reforms are so extensive and unprecedented that the country's growth in the coming years will not be unexpected. This will be a natural result of innovative and advanced processes in the country's society, economy, and politics. It would seem that Ukrainians understand what they are doing, and that it was not by chance that they chose the liberal-democratic vector. Political actions have demonstrated that the inhabitants of this country are mature enough and have what it takes to change not only the course of historical geopolitical events, but also their corrupt neoliberal model to a socially oriented liberal democracy. This is just the beginning, but it already demonstrates that Ukrainians can raise a creative, active, and self-governing generation through education. It is worth mentioning that undeveloped countries can develop rapidly due to the critical need to replace old corrupt inefficient schemes. Ukraine can transform and rise much faster than one might expect, and it has good foundations for taking part in international cooperation projects on both small and large scales. Ukraine has all the necessary conditions and support for fundamental and positive transformations. This can be implemented through the growth of a self-guided society and in its favour.

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Інтегральна оцінка конкурентоспроможності соціально-економічної активності Західного регіонального ринку туристичних послуг України

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Анотація. Актуальність дослідження полягає в тому, що туризм є провідною сферою діяльності в багатьох країнах світу, оскільки його розвиток дає можливість задіяти в господарський обіг найцінніші природні ресурси, створити нові робочі місця, активізувати інвестиційну діяльність, поліпшити екологічну та соціально-економічну ситуацію. Попри актуалізацію окресленої проблеми варто відмітити малодослідженність ринку туристичних послуг на Західному регіональному ринку в науковій літературі, а зокрема процеси соціально-економічної активності та механізми їх регулювання. У цій роботі були використані наступні методи дослідження: статистичний, математичний, метод аналізу та картографічний. Також були використані статистичні дані Державної служби статистики України, Міністерства фінансів України, Міністерства економічного розвитку України, Міністерства інфраструктури України, Міністерства соціальної політики, Міністерства розвитку громад та територій України та ін. У даній роботі обґрунтовано рівень конкурентоспроможності соціально-економічної активності Західного регіонального ринку туристичних послуг, проаналізовано ряд наукових праць зарубіжних та українських науковців. Основними результатами дослідження є визначення інтегральної оцінки конкурентоспроможності Західного регіонального ринку туристичних послуг. Для цього було використано загальноукраїнські показники оцінки соціально-економічного розвитку регіонів. Аналіз виявив, що досліджувані об'єкти (Волинська, Рівненська, Тернопільська та Львівська області) протягом 2015–2018 років покращили свій рівень інтегральної конкурентоспроможності на ринку туристичних послуг, однак він залишається критично низьким, хоча й поступово зростає. Перспективами подальших досліджень є вивчення процесів соціально-економічної активності та визначення інтегральної оцінки конкурентоспроможності на ринку туристичних послуг у інших регіонах України

Ключові слова: конкурентоспроможність, соціально-економічна активність, Західний регіональний ринок, ринок туристичних послуг

Socio-Economic Competitiveness of the Western Regional Market of Tourist Services of Ukraine: Integral Assessment

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Abstract. The relevance of the study lies in the fact that tourism is the leading area of activity in many countries of the world, since its development allows using the most valuable natural resources in economic circulation, create new jobs, activate investment operations, improve the environmental and socio-economic situation. Despite the actualisation of the problem under study, the Western regional market of tourist services is understudied, namely regarding the socio-economic activity and mechanisms for its regulation. This study employed the following research methods: analysis, statistical, mathematical, and cartographic methods. The paper also incorporates statistical data from the State Statistics Service of Ukraine, the Ministry of Finance of Ukraine, the Ministry of Economic Development of Ukraine, the Ministry of Infrastructure of Ukraine, the Ministry of Social Policy, the Ministry of Development of Communities and Territories of Ukraine, etc. This study substantiates the level of socio-economic competitiveness of the Western regional market of tourist services, analyses numerous studies of foreign and Ukrainian researchers. The main results of the study lie in the determination of an integral assessment of the competitiveness of the Western regional market of tourist services. For this purpose, the author of this study used the all-Ukrainian indicators for assessing the socio-economic development of regions. The analysis indicated that during 2015-2018, the objects under study (Volynska, Rivnenska, Ternopilska, and Lvivska oblasts) improved their level of integral competitiveness in the tourist services market. It remains critically low, although it is gradually growing. The prospects for further research include the investigation of the processes of socio-economic activity and determination of an integral assessment of competitiveness in the tourist services market in other regions of Ukraine

Keywords: competitiveness, socio-economic activity, Western regional market, tourist services market

Introduction

In Ukraine, tourism has not taken a dominant place in the structure of the economy and the service sector. Therefore, there is a need for scientific justification of the processes taking place in this area, considering both the market and the socio-economic realities that have developed [1]. This requires improving the organisational and economic mechanisms for the development of regional markets for tourist services, among which an important place belongs to the regulation of socio-economic activity. In this regard, the subject of this study is relevant in theoretical and methodological, as well as practical aspects. An essential part of the functioning of the socio-economic development of the regions of Ukraine is the stable and uninterrupted functioning of regional tourist markets. The considerable number of issues faced by regional tourism markets include ensuring their competitiveness, creating a comfortable institutional environment and regulating socio-economic activity. Therefore, the subject matter evidently necessitates the investigation of the processes of monitoring and stimulating socio-economic criteria of regulatory processes in these markets, both at the regional and national levels.

The service sector plays a considerable part in the national economy of the world's countries. This is reflected in the interrelation of the economic growth

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of countries and the increasing importance of services in the economy structure. With the growth of the welfare of society, the service market is developing, employment of the population is increasing (as is well-known, in highly developed countries, most of the population is employed in the service sector), and the technical equipment of labour is improving through the introduction of modern technology. One of the most popular and promising areas of the service sector is tourism and tourist services. This area is described by a high demand for tourist services and dynamic development. This industry includes services rendered by travel companies, hotels, restaurants, motels, tour desks, catering establishments, etc.

The problems of tourism development and its competitiveness at the national, regional, and local levels are discussed in the studies of many foreign and Ukrainian researchers, including R.V. Voloshchuk [2; 3], O.V. Muzychenko-Kozlovska [1], etc. In the studies of foreign researchers, the state and development of tourism are assessed mainly within the context of competitiveness, while Ukrainian researchers pay more attention to the potential and attractiveness of this industry [4-7].

The main purpose of this study is the assessment of socio-economic competitiveness of the Western regional market of tourist services. To achieve this purpose, the following tasks were set: to analyse the studies of foreign and Ukrainian researchers engaged in the development of tourism and its competitiveness at the national, regional, and local levels; to identify the methodology for investigating the socio-economic activity in the Western regional market of tourist services; to study the integral indicator of the competitiveness of tourist services markets during 2015-2018.

Materials and Methods

Competition is the crucial link in the entire system of market economy, which expresses the essence of market relations. This study was carried out using R.V. Voloshchuk's approach [2], since it involves the use of normalised (unified) indicators that describe complex economic systems, as well as used in assessing economic stability and security. According to O.V. Muzychenko-Kozlovskaya [1], the values of primary indicators are calculated by various methods of collecting statistical data, but for analysis and general evaluation of a complex system as a single whole, one aggregated indicator is essential – an integral index that is not measured directly, but integrates primary indicators in a certain way and is calculated based on their statistical values. To date, there are also numerous approaches and techniques that allow analysing both the competitiveness of an individual business entity and the market where it is represented in general.

As for the tourist services market (TSM), competitiveness should be evaluated comprehensively, according to the methodology developed by R.V. Voloshchuk, proceeding from two groups of indicators:

- TSM indicators;
- region development indicators in general.

TSM indicators include statistical data by region, provided in the annual reference books "Tourism Activities in Ukraine". However, to offset the impact of market size, the study used relative indicators, adjusting statistical data relative to the All-Ukrainian indicator.

The initial data for analysing the competitiveness of tourist services markets in Volynska, Lvivska, Rivnenska, and Ternopilska Oblasts were obtained as a result of statistical processing of information from the State Statistics Service of Ukraine, the Ministry of Finance of Ukraine, the Ministry of Economic Development of Ukraine, the Ministry of Infrastructure of Ukraine, the Ministry of Social Policy, the Ministry of Development of Communities and Territories of Ukraine, etc. [8-12].

Calculations, namely the establishment of correlation between various parameters, analysis of various statistical initial data, intermediate and final results, as well as graphical representation of these results are performed in MS Excel.

Results and Discussion

To investigate the TSM of the Volynska Oblast and its features (structure, functions, types, etc.), an in-depth study necessitates the analysis of the rating of socio-economic indicators of the Western regional market of tourist services (WRMTS). In this study, the WRMTS will cover 4 oblasts: Volynska, Ternopilska, Lvivska, and Rivnenska (Fig. 1). Such correspondence of oblasts was chosen by the author because the specified administrative units are similar in their physicogeographical location, transborder, and economic situation. Such combination of oblasts tangential to the Volynska Oblast is the most understandable and coincidental. This study will allow rating the oblasts in terms of the TSM development and determining the most optimal oblast for the development of tourism in general.

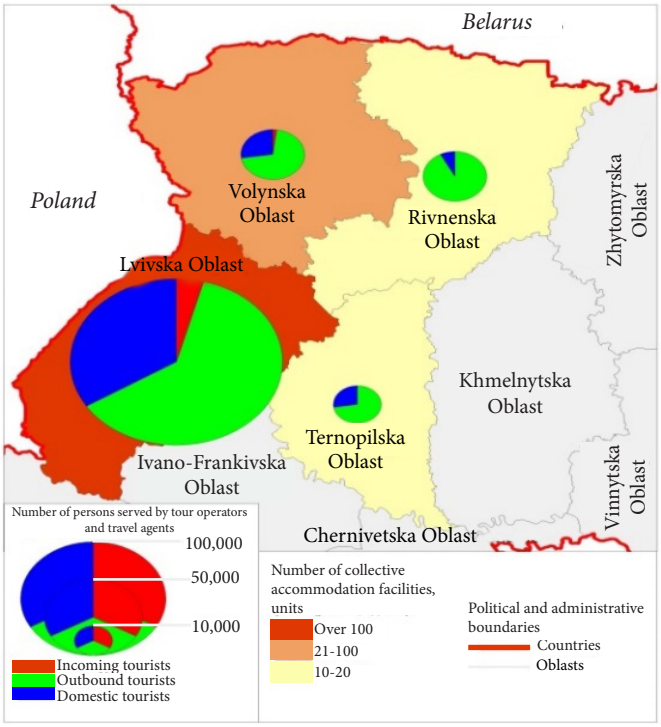

Figure 1. Territorial map of the Western regional market of tourist services of Ukraine
Source: compiled by the author

It is based on 13 main groups of indicators of socio-economic activity of the population, namely indicators of the tourist market, economic and social cohesion, economic efficiency, investment and innovation development and foreign economic cooperation, financial self-sufficiency, development of small and medium-sized businesses, labour market efficiency, infrastructure development, renewable energy and energy efficiency, availability and quality of services in the field of education, availability, and quality of services in healthcare, social protection, and safety of the population, as well as indicators of rational use of natural resources and environmental quality (Table 1).

Table 1. Normalised indicators for determining the socio-economic activity of the population in the Western regional market of tourist services of Ukraine

No.	Indicator
TSM indicators	
1	Share of the number of tourist activity subjects (legal entities)
2	Share of the number of tourist activity subjects (individuals)
3	Share of income from the provision of tourist services (legal entities)
4	Share of income from the provision of tourist services (individuals)
5	Share of the number of tourist vouchers sold by tour operators (legal entities)
6	Share of the number of tourist vouchers sold to the population (legal entities)
7	Share of the number of tourist vouchers sold to the population by travel agents (individuals)
8	Share of the cost of tourist vouchers sold by tour operators (legal entities)
9	Share of the cost of tourist vouchers sold to the population by travel agents (legal entities)
10	Share of the cost of tourist vouchers sold to the population by travel agents (individuals)
11	Share of the number of tourists served by travel agents (individuals)

Table 1, Continued

No.	Indicator
12	Share of the number of tourists served by tour operators (legal entities)
13	Share of the number of tourists served by travel agents (legal entities)
14	Share of the number of bednights on tourist vouchers sold by tour operators in Ukraine (legal entities)
15	Share of the number of bednights on tourist vouchers sold to the population by travel agents (legal entities)
16	Share of the number of bednights on tourist vouchers sold by travel agents (individuals)
Indicators of economic and social cohesion	
17	Gross regional product per capita, UAH
18	Disposable income of the population per capita, UAH
19	Total retirement rate of the rural population, per 10 thousand people of the existing rural population, %
Economic efficiency indicators	
20	Industrial output index, percent compared to the previous year, %
21	Volume of industrial products sold per capita, UAH
22	Index of agricultural production, percent compared to the previous year, %
23	Volume of agricultural production per 100 ha of agricultural land, UAH
24	Index of construction output, percent compared to the previous year, %
25	Volume of completed construction works per capita, UAH
26	Consumer price index, %
Indicators of investment and innovation development and foreign economic cooperation	
27	Capital investment index, percent compared to the previous year, %
28	Volume of capital investments (excluding investments from the state budget)
29	Growth (decline) rate of foreign direct investment (share capital)
30	Volume of foreign direct investment per capita, UAH
31	Share of innovative products sold, %
32	Volume of exports of goods per capita, USD USA
Indicators of financial self-sufficiency	
33	Growth (decline) rate of local budget revenues (excluding transfers), %
34	Local budget revenues (excluding transfers) per capita, thous. UAH
35	Capital expenditures of local budgets (excluding transfers from the state budget), thous. UAH
36	Growth (decline) rate of tax debt on taxpayer obligations, %
Indicators of small and medium-sized business development	
37	Number of medium-sized business entities per 10 thous. people, units
38	Number of small business entities, units
39	Share of the volume of products (goods, services) sold by medium-sized business entities (in the total volume of products (goods, services) sold
40	Share of the volume of products (goods, services) sold by small business entities in the total volume of products (goods, services) sold
Labour market performance indicators	
41	Labour productivity, %
42	Unemployment rate of the population aged 15-70 (according to the ILO methodology), %
43	Index of real wages, interest compared to the corresponding period of the previous year, %
44	Amount of salary arrears, %

Table 1, Continued

No.	Indicator
Infrastructure development indicators	
45	Density of all-purpose hard surface roads of state and local importance in the region, km per thous. km^2
46	Volume of freight turnover of road and rail transport, thous. tkm per 1,000 people of the population, thous. tkm
47	Total area of housing stock per capita, m^2
Renewable energy indicators and energy efficiency	
48	Volumes of fuel and energy resources consumed in the region during the reporting period per capita of the region, tonnes of oil equivalent
49	Share of total capacity of boiler houses on alternative fuels in the region, %
Indicators of accessibility and quality of education services	
50	Share of full-time general education institutions in rural areas that use computer technology in the educational process, %
51	Percentage of rural children provided with transportation to their place of study and home, percent of the total number of students in need, %
52	Proportion of children enrolled in extracurricular education, %
Indicators of accessibility and quality of healthcare services	
53	Total mortality rate per 1 thousand people of the existing population, %
54	Average life expectancy at birth, years
55	Number of live-born children per 1 thousand people of the available population, %
56	Planned capacity of outpatient clinics per 10 thous. people, thous. visits per shift
Social protection and security indicators	
57	Share of orphans and children deprived of parental care who are brought up in family forms of education, in the total number of children in this category, %
58	The number of criminal offences committed against the life and health of a person per 10 thousand people of the population, units
Indicators of rational use of natural resources and environmental quality	
59	The volume of emissions of pollutants from stationary sources per 1 billion UAH of gross regional product, thous. tonnes
60	Share of localities where solid household waste sorting has been introduced, in the total number of localities in the region, %

Source: developed by the author based on [10-14]

For unambiguous intercomparison, each of the indicators (x_j) must be normalised (unified), i.e., reduced to the interval $0 \le x_j \le 1$. Therewith, $x_j=1$ corresponds to the best (optimal) value of this indicator, and $x_j=0$ – its worst (invalid) value, where x_j is the normalised value. This value will be called the indicator of the primary exponent x_j.

After normalisation of the values of each of the given system of primary indicators, the integral index of this system is calculated as the sum of normalised values with certain weighting factors (in this case, the same ones) (1):

$$I = \sum_{i}^{n} = 1 \sum_{j}^{m} = 1 \, k_j \bar{x}_{ij} \qquad (1)$$

where k_j are the weighting coefficients that determine the degree of contribution of the j^{th} indicator to the integral index of the i^{th} period, x_{ij} are the normalised indicator values x_{ij}.

Specified integral indicator I equals "1" when all x_{ij} obtain the "best" or optimal values, and "0" if all indicators are the "worst".

Therewith, among all the values of statistical data on the temporal change of a given indicator, one finds the minimum x_{min} and the maximum x_{max} values, and then performs normalisation using the equation (2):

$$\bar{x_i} = \frac{x_i - x_{min}}{x_{max} - x_{min}} \qquad (2)$$

where $i=\overline{1, n}$, an is the amount of statistical data (sample length), or the number of points in the time series.

The consolidated assessment of the calculation of the integrated indicator of competitiveness is presented in the summary Table 2.

Table 2 demonstrates that the integral indicator of the Volynska Oblast in 2015 was 0.028, in 2016 – 0.032, in 2017 – 0.037, in 2018 – 0.048. The integral assessment of the Rivnenska Oblast in 2015 was 0.035, in 2016 – 0.040, in 2017 – 0.037, in 2018 – 0.048. As for the Lvivska Oblast, the integral indicator in 2015 was 0.030, in 2016 – 0.035, in 2017 – 0.042, in 2018 – 0.053. In the Ternopilska Oblast, the integral indicator in 2015 was 0.025, in 2016 – 0.030, in 2017 – 0.036, and in 2018 – 0.045.

Table 2.Dynamics of integrated assessment of the competitiveness of tourist services markets during 2015-2018

Year	Administrative region			
	Volynska Oblast	Rivnenska Oblast	Lvivska Oblast	Ternopilska Oblast
2015	0.028	0.035	0.030	0.025
2016	0.032	0.040	0.035	0.030
2017	0.037	0.047	0.042	0.036
2018	0.048	0.054	0.053	0.045

Source: compiled by the author based on [15; 16]

The presented data indicate that the integral indicator of competitive regions is slowly growing. The competitiveness of each region is formed from equal-weighted absolute and relative indicators. Considering that the value of the integral indicator of competitiveness should reach 1, the calculations performed indicate that the studied regions during 2015-2018 improved their level of integral competitiveness in the TSM. It remains critically low, although it is gradually growing (Fig. 2).

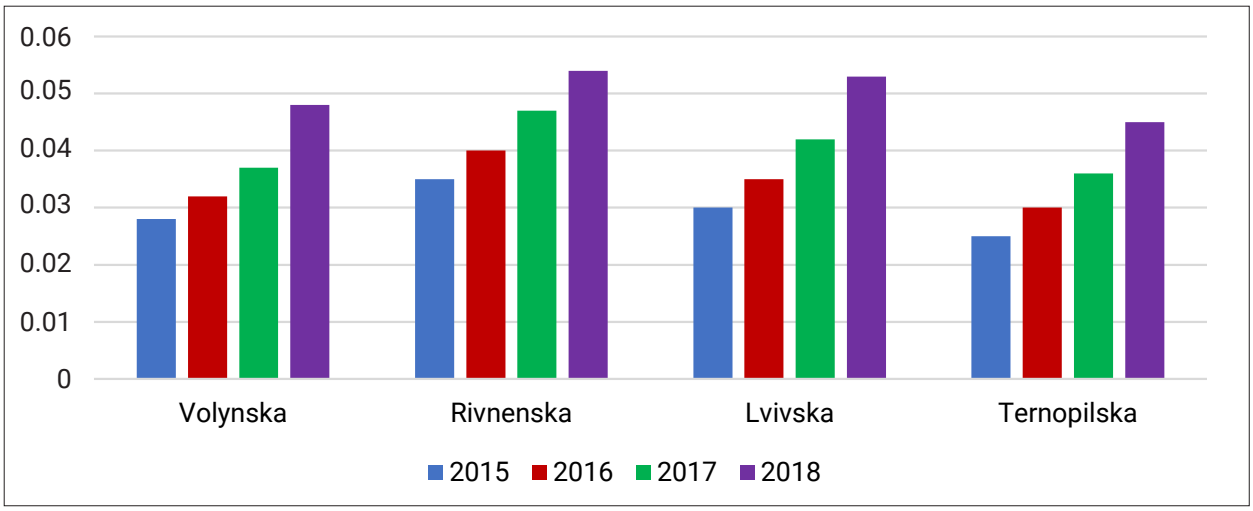

Figure 2. Integral indicator of regional competitiveness, by year
Source: developed by the author based on [2-3]

Figure 2 suggests that the level of the integral indicator of regional competitiveness varies. The first place among the oblasts is occupied by the Rivnenska Oblast, the second – by the Lvivska Oblast, the third – by the Volynska Oblast, and the fourth – by the Ternopilska Oblast.

Conclusions

This study discovered various methods that can be used to assess competitiveness. The use of such methods in tourism allows obtaining up-to-date information about the competitive position in the TSM; identifying strengths and weaknesses; planning future activities; forming the correct strategy for competitiveness, as well as quickly responding to the reactions of the external environment. Upon assessing the competitiveness of the Western regional market of tourist services, it was established that:

1) firstly, the calculation results indicate that the level of competitiveness of the tourist market in the Rivnenska Oblast is slightly higher than in the Lvivska

Oblast. This situation, according to the author of this study, is conditioned upon the best situation in the sphere of socio-economic development of the region. Nevertheless, in terms of absolute indicators, the Lvivska Oblast is out of competition among the regions after study.

2) secondly, in general, each of the four regions has a rather low level of competitiveness of the tourist market. However, it is gradually growing every year, albeit at a very slow pace.

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Застосування методів глибокого навчання до прогнозування зміни короткострокових трендів валютних курсів

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Анотація. Робота присвячена питанням короткострокового прогнозування валютних курсів за допомогою моделей глибокого навчання, що є актуальним як для наукової спільноти, так і для трейдерів та інвесторів. Метою роботи є побудова моделі прогнозу напряму зміни руху цін валютних котирувань на основі глибоких нейронних мереж. В основу розробленої архітектури було покладено модель вентильного рекурентного вузла, що є модифікацією моделі «довготривалої короткочасної пам'яті», але є більш простою за кількістю параметрів і часом навчання. Проведено прогнозні розрахунки динаміки котирувань валютної пари євро/долар і найбільш капіталізованої криптовалюти біткоїн/долар із використанням щоденних, чотиригодинних і щогодинних спостережень. Отримані результати бінарної класифікації (прогнозу напряму зміни тренду) під час застосування щоденних і годинних котирувань виявились загалом кращими, ніж дають моделі часових рядів, або моделі нейронних мереж іншої архітектури (зокрема, багатошарового персептрону, чи моделі на основі «довготривалої короткочасної пам'яті»). Згідно з одержаними результатами, найбільша точність класифікації виявилася для моделі щоденних котирувань як для євро/долар – близько 72 %, так і для біткоїн/долар – близько 69 %. Під час використання чотирьохгодинних і щогодинних часових рядів точність класифікації зменшувалась, що можна пояснити як збільшенням впливу «ринкового шуму», так і вірогідним перенавчанням моделей. Унаслідок комп'ютерних експериментів було з'ясовано, що моделі краще прогнозують зростаючий тренд, ніж спадаючий. Проведене дослідження підтвердило перспективність застосування моделей глибокого навчання для задач короткострокового прогнозування часових рядів валютних котирувань. Водночас використання розроблених моделей виявилось ефективним як для фіатних, так і для криптовалют. Запропоновану систему моделей на основі глибоких нейронних мереж можна покласти в основу під час розробки автоматизованої торгової системи на валютному ринку

Ключові слова: рекурентні нейронні мережі, короткострокове прогнозування, часові ряди валютних котирувань, криптовалюти

Application of Deep Learning Methods to Forecast Changes in Short-Term Exchange Rate Trends

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Abstract. This paper investigates the issues of short-term forecasting of exchange rates using deep learning models, which is relevant for both the academia and traders and investors. The purpose of this study is to build a model to forecast the direction of changes in the price movement of currency quotes based on deep neural networks. The developed architecture is based on the gated recurrent unit model, which is a modification of the "long short-term memory" model, but is simpler as to the number of parameters and learning time. Forecast calculations of the dynamics of quotations of the euro/dollar currency pair and the most capitalised cryptocurrency – bitcoin/dollar are carried out using daily, four-hour, and hourly observations. The obtained results of binary classification (forecasting the direction of trend change) when applying daily and hourly quotes turned out to be generally better than those given by time series models, or models of neural networks of other architecture (namely multilayer perceptron, or models based on "long short-term memory"). According to the results obtained, the highest classification accuracy was found for the model of daily quotes for both EUR/USD – about 72%, and for BTC/USD – about 69%. When using the four-hour and hourly time series, the classification accuracy decreased, which can be explained both by an increase in the impact of "market noise" and by the likely retraining of models. As a result of computer experiments, it was found that models better predict an upward trend than a downward one. The conducted research confirmed the prospects of using deep learning models for short-term forecasting of time series of currency quotes. At the same time, the use of the developed models proved to be effective for both fiat and cryptocurrencies. The proposed system of models based on deep neural networks can be used as a basis for the development of an automated trading system in the foreign exchange market

Keywords: recurrent neural networks, short-term forecasting, time series of currency quotes, cryptocurrencies

Introduction

In the current conditions of increasing instability and crisis phenomena both at the regional level and in the global economy in general, traders and investors, especially with short-term investment horizons, are forced to seek new efficient investment tools. If 20-30 years ago, both stock and FOREX currency market (FOReign EXchange – "foreign currency exchange") were mainly considered as traditional platforms for stock trading, then recently such innovative financial instruments as cryptocurrencies have become increasingly popular. Thus, after relatively stable 2018-2019, over the past year, the exchange rate value of leading cryptocurrencies has increased several times [1], which caused a new wave of interest in these instruments.

This necessitates a reliable identification of the optimal conditions of the currency market (both FOREX and crypto markets) for decision-making concerning trading operations, which should be based on adequate forecasts of currency quotes. For conventional assets, a considerable arsenal of effective methods and approaches to modelling and predicting their dynamics was developed and tested: causal econometric models,

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supply and demand balance models, adaptive forecasting methods, time series models of autoregression – integrated moving average (ARIMA) and their modifications, etc. [2-4].

Despite the wide variety of developed methods and models for forecasting exchange rates, work in this area is relevant. The dynamics of currency quotes are influenced both directly and indirectly by numerous factors. Due to the presence of complex causal chains, these influences are difficult to formalise within a certain theoretical concept or formalised model. The situation with cryptocurrency forecasting is even more complicated. Their dynamics are influenced by several latent factors, the vast majority of which remain understudied and unidentified [5-7]. Furthermore, cryptocurrencies are much more volatile and riskier than fiat currencies or securities. Many empirical studies indicate the limited practical value of applying classical statistical and econometric approaches to predicting the dynamics of cryptocurrencies [8-12].

Recently, machine and deep learning methods have been increasingly used to predict financial time series, which have proven effective both for analysing conventional assets (exchange rates, stocks, stock indices, commodity prices) and for cryptocurrencies [10-17]. In [12], models of recurrent neural networks (RNNs) and long short-term memory (LSTM) were used to predict changes in the price directions of bitcoin (BTC). The best result was obtained using an LSTM with a classification accuracy of 52%. At the same time, ARIMA time series models and recurrent RNN networks were less accurate.

The authors of the paper [15] tested four machine learning (ML) algorithms for predicting price trends in the cryptocurrency market: linear regression (LR), random forest (RF), support vector machine (SVM), and gradient boosting machine (GBM). According to the results obtained, the use of the ML algorithms applied for making a purchase/sale decision exceeded the results of applying the "*Buy and Hold*" investment strategy on the crypto market. The best result was obtained by voting ensembles (classification accuracy 59.3%).

In [16], several classifiers (RF, GBM, SVM, and LSTM) were also used for 5-minute BTC ticks and daily prices. The authors used a wide range of data, including both technological, market-based stock market factors, and those that consider preferences and interest in crypto assets (*sentiment analysis*). Somewhat unexpectedly, for daily prices, the best results were obtained using statistical methods (average accuracy 65%), as opposed to ML methods (average accuracy 55.3%). The article [17] also compares the effectiveness of various classifiers for predicting the direction of changes in cryptocurrency prices. The best classification result was achieved using multilayer perceptron (MLP) and random forest (RF) about 61%.

The authors of the study [18] applied ensembles of deep network models based on LSTM and convolutional neural networks (CNN) both to predict the price of cryptocurrencies (BTC, ETH, XRP) for the next hour (regression) and to predict changes in the price direction (classification). The best architectures developed by the authors demonstrated classification accuracy within the range of 52-55%. In [19], MLP and LSTM deep network models were used to predict the prices of the second-largest ETH cryptocurrency by capitalisation for daily, hourly, and minute data. The LSTM model demonstrated higher accuracy: on time data, the mean absolute percentage error (MAPE) was 1.38%, on daily data – 3.67%.

Over the past 5 years, there has been an increase in researchers' attention to applying deep neural networks to the tasks of studying both conventional exchange rates and those of cryptocurrencies. The authors of [20] published a detailed review on the use of deep learning (DL) approaches in the field of financial forecasting. The main conclusion of this review is that in general, the performance of DL algorithms is superior to time series models and often demonstrates higher accuracy than conventional ML algorithms.

The purpose of this study is to investigate the efficiency of using a deep neural network built based on a modified model of "long short-term memory" (LSTM) to predict changes in the direction BTC prices and compare the results with the exchange rate of the euro-dollar (EUR/USD) currency pair.

Materials and Methods

The problem of forecasting exchange rates should be solved using a systematic approach. At the first stage, it is advisable to decompose the problem into several interrelated tasks:

1) identification of the input set of factors (dataset), which must be considered when predicting based on a neural network. At the same time, the criteria, or requirements for selecting essential factors are to achieve the required forecast accuracy on a test or deferred sample, provided that the span of this data set is minimised;

2) identification of the required volume of training, test, and control samples. When solving this problem, there are also conflicting requirements related to the ability of neural networks to generalise (or vice versa, retrain);

3) selection of the type, basic structure, and composition of a neural network and its architecture;

4) optimisation of the underlying architecture by performing a series of computer experiments using different data sets;

5) application of the model to predict the dynamics of currency quotes;

6) evaluation of modelling results.

In this study, to better assess the predictive properties of the proposed models, the authors used only past (lagged) values of the target variable (currency quote) as explanatory variables (model factors). The time lag is 7 days: based on observations for the last 7 days (trading week), changes in the direction of quote movement for the next day are predicted using one-step forecast technology. Since the purpose of this paper is not to forecast the direct numerical value of the currency quote, but only a change in the direction of trend movement, that is, the problem of binary classification, there is no need for pre-processing of the time series under study, which usually entails filtering, smoothing, removing market noise and emissions, normalising or standardising time series. Therefore, all the time series under study were converted to binary variables: 1 – if the closing price of the quote of the day t is greater than or equal to the corresponding closing price of the day t -1, and 0 – in the opposite case.

Standard practice for building machine learning models is to break down the entire sample of data into training and testing data. The training data is designed to evaluate model parameters, while the test data – to check the quality of the model and fine-tune the hyperparameters. Therefore, in this paper, the authors did not use the last 10% of observations when training models, but used them to evaluate the accuracy and fine-tune the hyperparameters.

The most difficult stage of this study is the choice of network architecture. Notably, the process of choosing an architecture and building a network is still not formalised, but is based mainly on heuristic technologies, intuition, and experience of the researcher. For a long time, the most common network architecture was models based on multi-layer perceptron (MLP). Recently, however, due to the growth of computing power and the development of cloud services, deep networks of other architectures, namely CNNs and RNNs have become very popular. If CNNs are more adapted to image processing, then RNNs work better with time series.

Specific features of RNNs are that the connections between their elements form a directed sequence or chain (Fig. 1). At each time t, not only the input values (vector $x(t)$) but also the values of the parameters describing the internal state of the network at the previous time $h(t\text{-}1)$ are fed to the network. This allows processing a series of events over time. The advantage of RNNs over MLPs is their ability to use their internal memory to process sequences of arbitrary length. Therefore, networks of this architecture are more suitable for processing and predicting time series than direct propagation networks, namely MLPs.

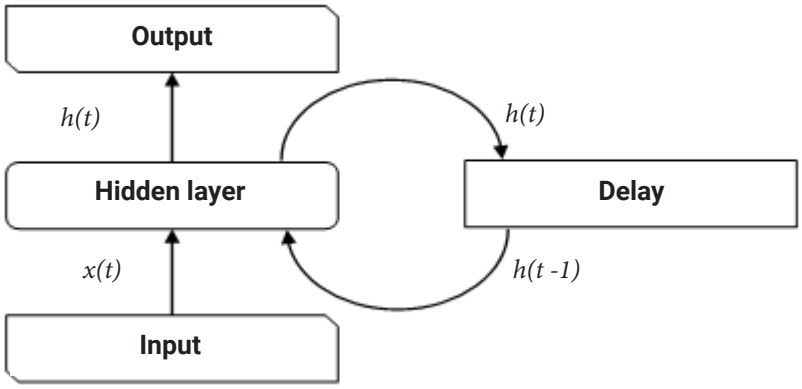

Figure 1. Simplified structure of a recurrent neural network

Source: compiled by the authors

One of the promising types of RNN architectures that can factor in long-term time dependencies is "long short-term memory" (LSTM) networks. Unlike conventional RNNs, LSTMs are more efficient at predicting time series in cases where important events are separated by time lags with indefinite duration or boundaries. The deep neural network architecture proposed by the authors of this study is based on the gated recurrent units (GRU) model [21], which is a modification of the LSTM model. The advantage of this model is that the performance of GRU-based networks is comparable to LSTM, but they have fewer parameters and therefore learn faster, requiring less data to train and configure.

For the software implementation of the models, the authors used data mining and machine learning methods using the Python and MQL5 programming languages, Google Colaboratory cloud services, Keras and Tensorflow libraries, and Pytorch.

Results and Discussion

For analysis, the authors took currency quotes of EUR/USD and BTC/USD for 01.02.2017-10.08.2020 according to the Yahoo Finance service [22]. This particular segment of the time series of quotes was chosen because analogous graphical patterns of behaviour of exchange rate quotes (similar patterns) are observed on the quote charts, marked with rectangles (Fig. 2).

The main purpose of the constructed graphical model (Fig. 2) lies in a short-term forecast of the direction of change in the quote of a financial instrument (growth or decline). The training window is seven days, the forecast horizon is one day, the number of training iterations (epochs) is 100, the training sample size is 90% of the total number of quotes, according to the test sample – 10%. Error (Fig. 3, 4(a)) and accuracy (Fig. 3, 4(b)) indicators of the models of daily (D1) EUR/USD (Fig. 2) and BTC/USD (Fig. 3) quotes have similar characteristics:

– the accuracy for the test sample remains at the same level all the time and increases after the 60th epoch;

– the error for the training sample decreases and the accuracy increases, which indicates that the models are retrained.

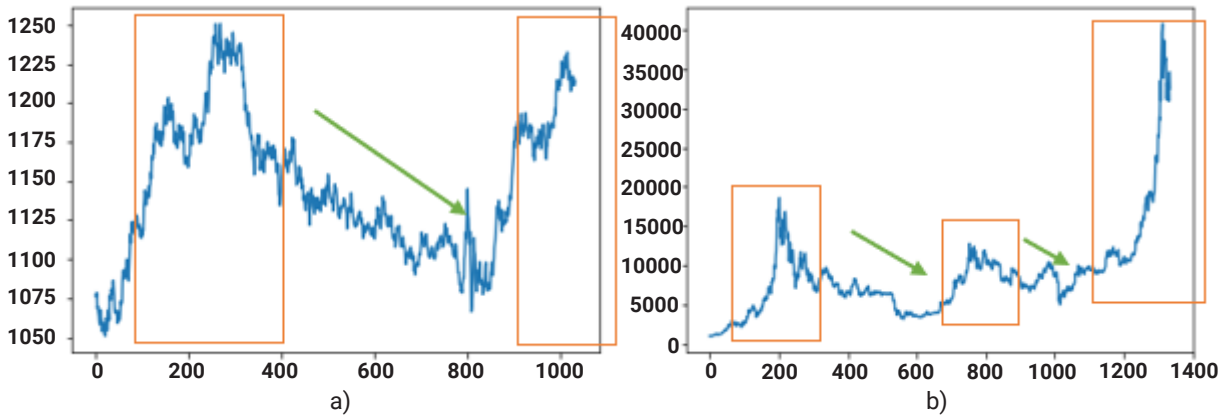

Figure 2. Charts of daily quotes of EUR/USD (a) and BTC/USD (b) for 01.02.2017-10.08.2020

Source: compiled by the authors based on [22]

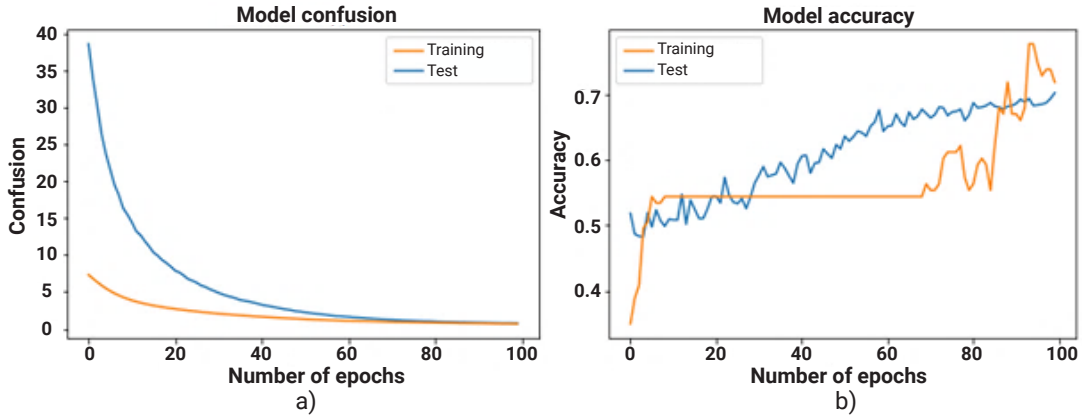

Figure 3. Model error and accuracy charts for daily EUR/USD quotes

Source: compiled by the authors based on testing of built models

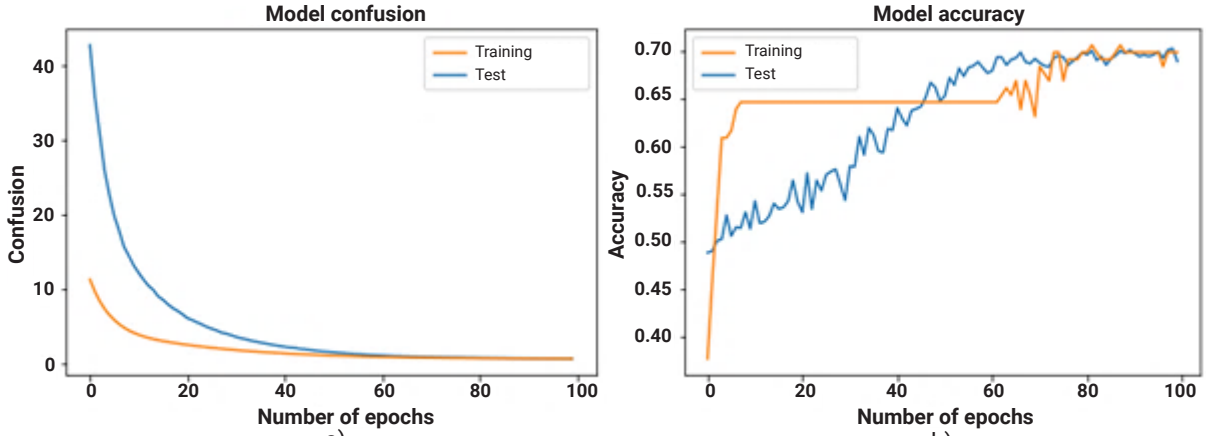

Figure 4. Model error and accuracy charts for daily BTC/USD quotes
Source: compiled by the authors based on testing of built models

Since the authors used the constructed model to solve the problem of binary classification (whether there will be a growth or decline in the studied indicator in the next period), the confusion matrix was used as a metric for evaluating the efficiency (accuracy) (Table 1). Table 1 presents: class *P* (*positive*) – growth of the indicator; class *N* (*negative*) – decline in the indicator; *TP* (*true positive*) – the model showed growth and there was also factual growth; *FP* (*false positive*) – the model showed growth, but there was a factual decline; *TN* (*true negative*) – the model showed a decline and there was also a factual decline; *FN* (*false negative*) – the model showed a decline, but there was a factual growth.

Table 1. General structure of the confusion matrix

		Output data	
		P	***N***
Projected data	***P***	***TP***	*FP*
	N	*FN*	***TN***

The following standard derived metrics were used for further analysis and comparison of forecasting models: accuracy (*ACC*) (1), the proportion of correctly classified positive objects (*TPR*) (2) and negative classes (*TPN*) (3), balanced accuracy (*BA*) (4):

$$ACC = \frac{TP + TN}{P + N} \quad (1)$$

$$TPR = \frac{TP}{P} \quad (2)$$

$$TPN = \frac{TN}{N} \quad (3)$$

$$BA = \frac{TPR+TPN}{2} \quad (4)$$

These confusion matrices allow quantifying the quality of the constructed model not only in general, but also depending on the type of confusion. Table 2 demonstrates the number of confirmed forecasts in the test sample of daily quotes EUR/USD (40 growth and 34 decline in quotes) and BTC/USD (65 growth and 28 decline in quotes).

Table 2. Confusion matrix of daily quotes of EUR/USD and BTC/USD

EUR/USD		Output data	
		Growth	*Decline*
Projected data	*Growth*	**40**	16
	Decline	13	**34**

BTC/USD		Output data	
		Growth	*Decline*
Projected data	*Growth*	**65**	21
	Decline	19	**28**

Source: compiled by the authors based on the results of using the built models

A graph was also used to evaluate the quality of the model (Fig. 5), which displays the initial data of the test sample and forecast data for a set of 50 time series samples. The number of matches allows evaluating the available opportunities for making decisions on conducting trading operations with a positive result.

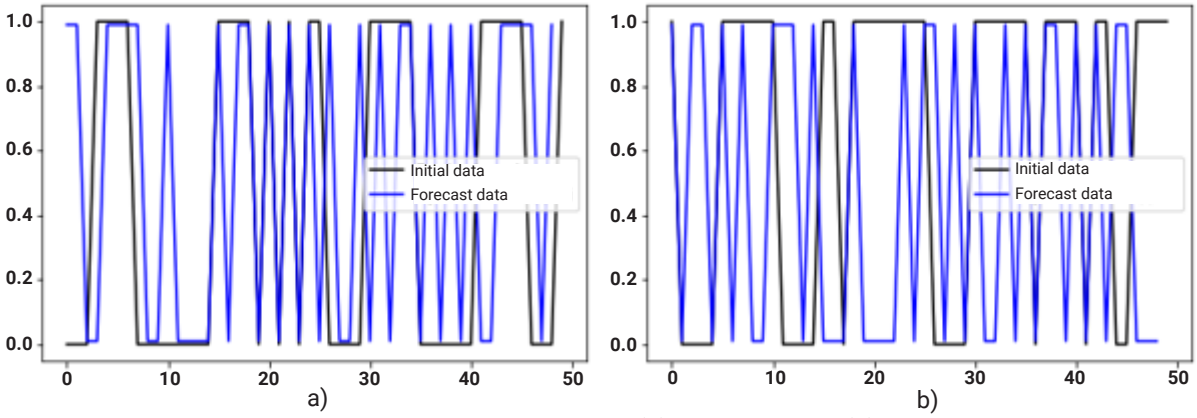

Figure 5. Factual and projected value of the EUR/USD (a) and BTC/USD (b) daily quote dataset
Source: compiled by the authors based on the results of using the built models

The next stage of analysing the quality of the constructed model was the transition from daily quotes to four-hour ones (H4 – 6 quotes per day). This increases the amount of data in the training and test samples, and the window for training the model is 42 periods (7 days), the forecast horizon is 6 periods (1 day). Decisions on trading operations are made every four hours for the next 24 hours. According to the results obtained, the accuracy indicators for four-hour EUR/USD quotes (Fig. 6) increase to the 20th epoch, which correlates with a decrease in confusion. From the 20th epoch onward, the accuracy is within the range of 58-62%, these data are confirmed by the values in the confusion matrix (Table 3). Accuracy for four-hour BTC/USD quotes (Fig. 7) is within the range of 60-64%. However, even though the accuracy is higher than that of the corresponding EUR/USD model, the number of true negative forecasts in the BTC/USD confusion matrix (Table 3) does not substantially differ from false positive and false negative forecasts (Fig. 8).

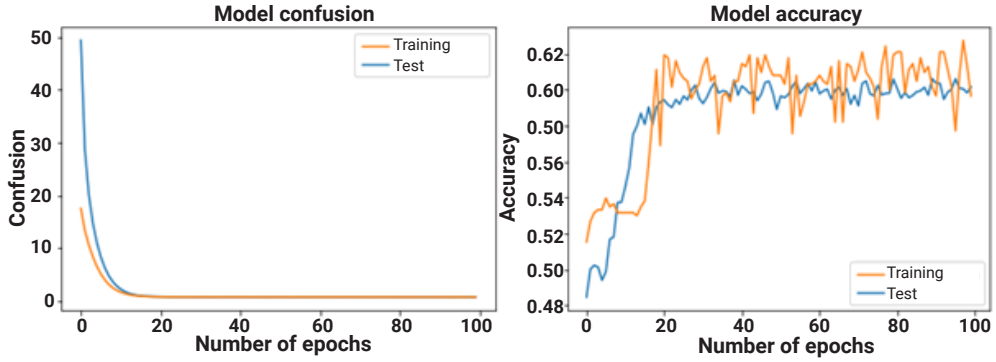

Figure 6. Charts of confusion and accuracy of the four-hour EUR/USD quote model
Source: compiled by the authors based on testing of built models

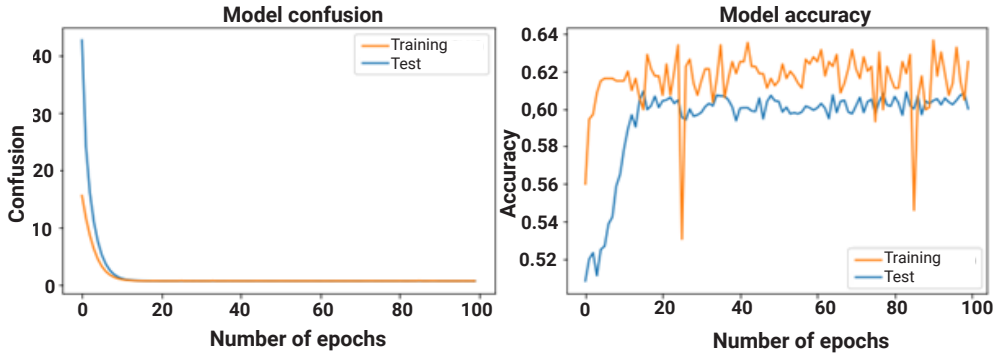

Figure 7. Charts of confusion and accuracy of the four-hour BTC/USD quote model
Source: compiled by the authors based on testing of built models

Table 3. Confusion matrix of the four-hour EUR/USD and BTC/USD quote models

EUR/USD		Output data	
		Growth	*Decline*
Projected data	*Growth*	**191**	136
	Decline	112	**176**

BTC/USD		Output data	
		Growth	*Decline*
Projected data	*Growth*	**344**	138
	Decline	146	**156**

Source: compiled by the authors based on the results of using the built models

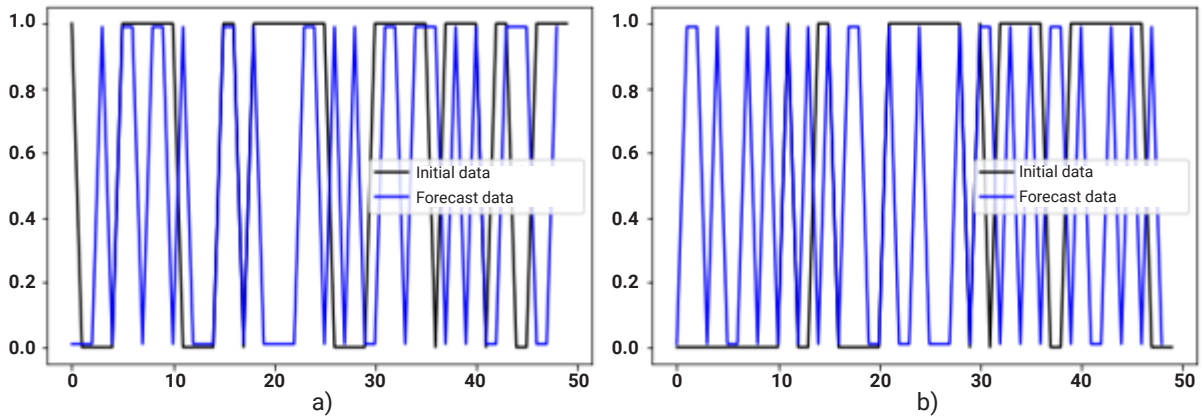

Figure 8. Factual and projected value of the EUR/USD (a) and BTC/USD (b) four-hour quote dataset

Source: compiled by the authors based on the results of using the built models

At the last stage of forecasting quality analysis, hourly quotes (H1 – 24 quotes per day) were selected using the GRU deep network model. At the same time, the amount of data in the training and test samples increased 24 times compared to the daily quotes, while the window for training the model was 168 periods (7 days), and the forecast horizon was 24 periods (1 day). Decisions on trading operations were made every hour on the horizon of 24 hours. Accuracy indicators of the hourly EUR/USD quote model (Fig. 9) for the entire range of training iterations was within the range of 50-55%, which is less than the corresponding indicators of the four-hour model. On the chart of the accuracy of hourly BTC/USD quotes (Fig. 10), there is a delta between the training and test samples, the accuracy of which is within the range of 53-55% for the training sample and 58-62% for the test sample, respectively. Furthermore, in the confusion matrices for EUR/USD and BTC/USD display a considerable number of false positive forecasts, which are 2 times higher than true negative forecasts. Figure 11 demonstrates this in the form of discrepancies between the original and forecast data. Table 4 presents the results of the confusion matrix for hourly quotes. Evidently, there was a decrease in classification accuracy for hourly quotes: the value of metric (1) was 0.53 and 0.6 for EUR/USD and BTC/USD, respectively.

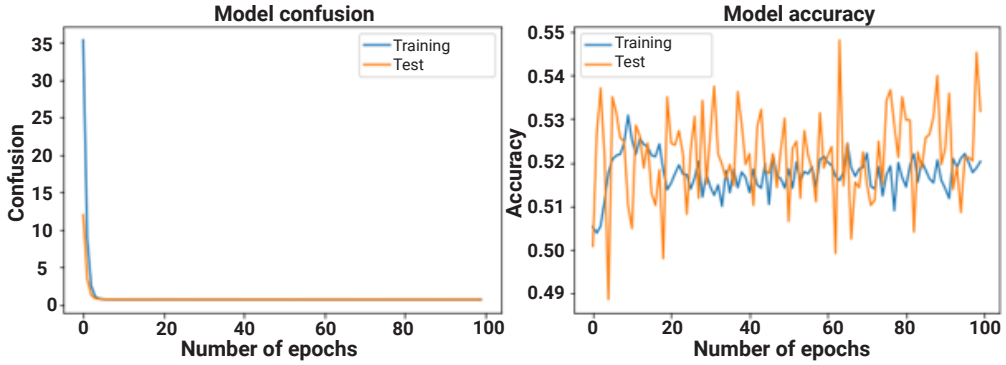

Figure 9. Charts of error and accuracy of the EUR/USD hourly quote model

Source: compiled by the authors based on testing of built models

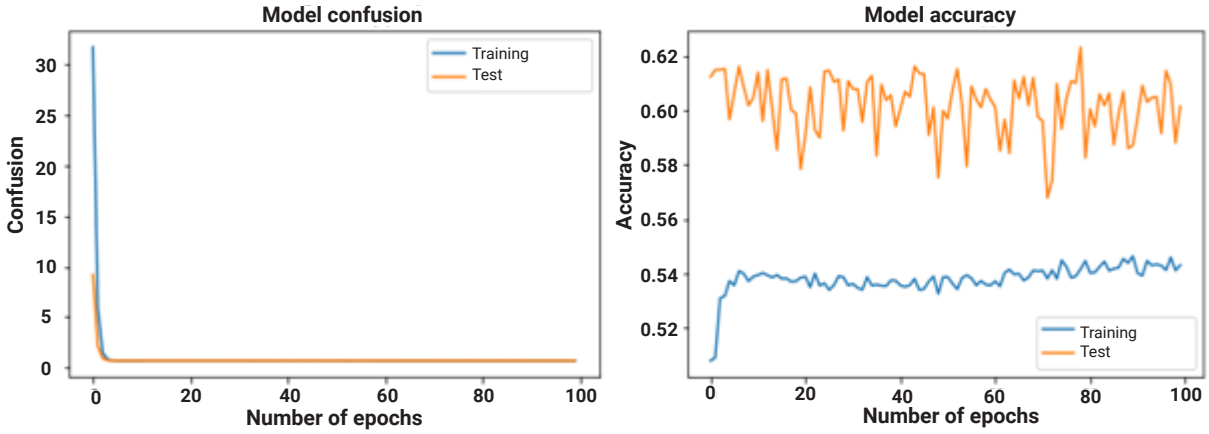

Figure 10. Charts of error and accuracy of the BTC/USD hourly quote model
Source: compiled by the authors based on testing of built models

Table 4. Confusion matrix of the EUR/USD and BTC/USD hourly quote models

EUR/USD		Output data	
		Growth	*Decline*
Projected data	*Growth*	**922**	397
	Decline	753	**384**

BTC/USD		Output data	
		Growth	*Decline*
Projected data	*Growth*	**1526**	392
	Decline	851	**350**

Source: compiled by the authors based on the results of using the built models

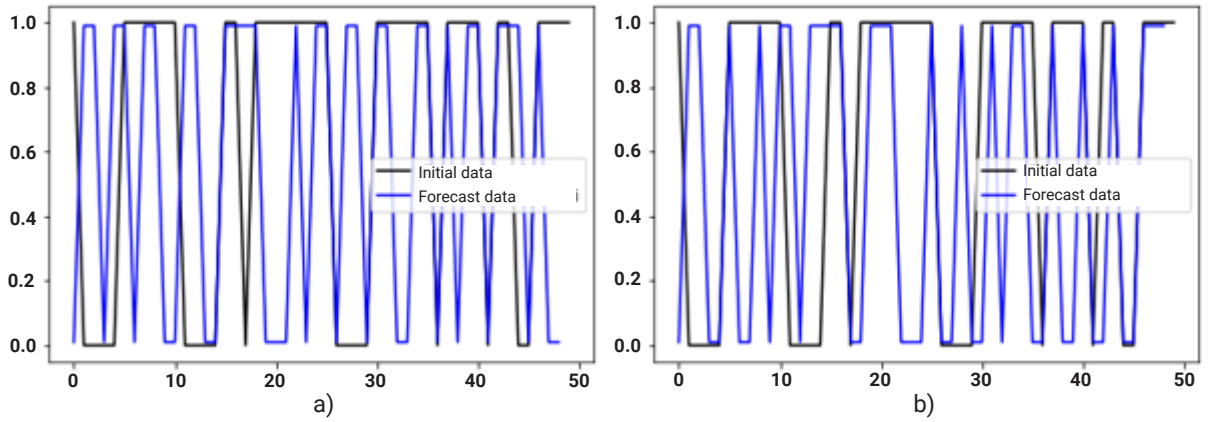

Figure 11. Factual and projected value of the EUR/USD (a) and BTC/USD (a) hourly quote dataset
Source: compiled by the authors based on the results of using the built models

The final results of applying the constructed GRU deep network model to predict the EUR/USD and BTC/USD exchange rates are presented in Table 5.

Table 5. Final results of the accuracy of the constructed models

	EUR/USD			BTC/USD		
Period	**D1**	**H4**	**H1**	**D1**	**H4**	**H1**
Total bars in the sample	1035	6195	24747	1335	7887	31374
Training sample	923	5531	22098	1193	7054	28062
Test sample	103	615	2456	133	784	3119
LSTM network metrics						
Training sampling confusion	0.7594	0.6862	0.7043	0.6629	0.6855	0.7001

Table 5, Continued

	EUR/USD			BTC/USD		
Period	**D1**	**H4**	**H1**	**D1**	**H4**	**H1**
Test sample confusion	0.6939	0.6901	0.6994	0.6328	0.6697	0.6900
Test sample accuracy	0.7184	0.5967	0.5318	0.6992	0.6250	0.6015
Training sample MSE	0.22322	0.23576	0.24905	0.20908	0.23442	0.24608
Training sample RMSE	0.47246	0.48555	0.49905	0.45725	0.48417	0.49606
Test sample MSE	0.21206	0.24075	0.24861	0.20454	0.23056	0.24130
Test sample RMSE	0.46050	0.49066	0.49861	0.45226	0.48017	0.49122
Confusion matrix						
Accuracy (ACC)	0.71844	0.59674	0.53175	0.69924	0.63775	0.60147
True positive rate (TPR)	0.75471	0.63036	0.55044	0.77380	0.70204	0.64198
True negative rate (TNR)	0.68000	0.56410	0.49167	0.57142	0.53061	0.47169
Balanced accuracy (BA)	0.71735	0.59723	0.52105	0.67261	0.61632	0.55683

Note: D1 – Daily models, H1 – 24 quotes per day, H4 – 6 quotes per day
Source: compiled by the authors based on the results of using the constructed models

Analysis of the data in Table 5 suggests as follows: in general, the models demonstrated higher accuracy when using the EUR/USD time series than for the BTC/USD. The best results were obtained when using daily quotes. When using four-hour and hourly data, the accuracy on the test sample was higher than on the training one. At the same time, no test data was used during model training. One explanation for this may be the effect of retraining the model. Models predict an uptrend (maximum value of the TPR metric=0.75 for daily EUR/USD quotes) better than a downtrend (maximum value of the TNR metric=0.68 for daily EUR/USD quotes).

In summary, the indisputable advantage of using deep networks is their ability to find hidden complex nonlinear patterns in data, as well as identify influential factors (*feature extraction*). Their disadvantage is that, theoretically, deep networks are essentially "event data recorders", and therefore it is quite difficult to analytically restore the functionality for which the forecast is made. Therefore, the result of their work is too "opaque".

Conclusions

The study proved the prospects of applying deep neural networks of the GRU type to predicting the directions of changes in exchange rates. According to the results of the analysis conducted by the authors of this study, such models were effective both in predicting the exchange rates of fiat and cryptocurrencies. The results of binary classification (forecasting the direction of trend changes) when applying daily and hourly quotes were generally better than time series models, or MLP-based models, or LSTM-based models. According to the findings of this study, the highest accuracy (in terms of the ACC metric) was observed in the model of daily quotes for both EUR/USD – about 72%, and for BTC/USD – about 69%.

When using four-hour and hourly data, the accuracy decreased. Notably, an increase in the training sample usually leads to an increase in the accuracy of forecasts. But if the time series consists of currency quotes, the so-called "noise" also increases at the same time, which leads to the opposite consequences – a decrease in the accuracy of forecasts. To prevent this, it may be efficient to use the Fourier transform, and the Wavelet transform of the original time series. Furthermore, an increase in the quality of classification can be achieved through fine-tuning of the hyperparameters. A promising area of further research may be the development of models based on the synthesis of convolutional neural networks and recurrent neural networks, as well as their further testing for classification tasks and to forecast future values of quotations for different time horizons of bias. Considering the above, the developed models can serve as a basis for creating an automated trading system in the currency market.

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Проблеми відображення операцій із цифровими активами в обліку

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Анотація. На сучасному етапі функціонування цифрової економіки змінюються підходи до використання готівки. Усе більше використовуються для замовлення послуг та оплати товарів в Інтернеті електронні безготівкові розрахунки. Тому важливу цінність цього процесу для облікової системи має відображення таких операцій в обліку. Використовуючи електронні гаманці та середовища електронного бізнесу, відображаючи транзакції з криптовалютою, перераховуючи кошти, майнінг, інвестуючи в активи з високим ризиком – усе це вимагає вивчення способу обліку таких операцій. Основна мета дослідження полягає у науковому обґрунтуванні підходів до відображення операцій із цифровими активами в обліку та визначенні шляхів надходження криптовалюти на підприємство. У процесі наукового дослідження були використані такі методи наукового пізнання як опис, аналіз і синтез. Встановлено, що не існує єдиного підходу до визнання та обліку криптовалют. Доцільно розглядати криптовалюту, яка належить до нематеріальних активів, лише в умовах довгострокових інвестицій. Іншим вектором розвитку є ідентифікація криптовалюти як ресурсу або запасів та облік її як запасів. Визначено, що, насамперед, перед використанням криптовалюти необхідно економічно обґрунтувати певний метод оцінки криптовалюти на законодавчому рівні. Надалі це необхідно для компаній, які будуть використовувати криптовалюту, щоб мати можливість постійно використовувати метод у своїй обліковій політиці. Автор проаналізував форми електронних грошей і виявив, що вони можуть існувати у вигляді інформації посеред комп'ютерних мереж (на основі мережі) і можуть мати додатковий зв'язок із платіжною смарт-карткою (на основі картки). З метою ідентифікації суб'єкта бухгалтерського обліку автор визначає, що криптовалюта має обліковуватись як нематеріальний актив, тоді як гаманці для зберігання криптовалюти варто обліковувати як інші необоротні матеріальні активи

Ключові слова: облік криптовалюти, господарські операції, майнінг, блокчейн, цифрова економіка

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Problems of Reflecting Transactions with Digital Assets in Accounting

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Abstract. At the present stage of functioning of the digital economy, approaches to the use of cash are changing. Electronic non-cash payments are used to order services and pay for goods on the Internet increasingly often. Therefore, reflecting such operations in accounting constitutes an essential value for the accounting system. Using e-wallets and e-business environments, mapping cryptocurrency transactions, transferring funds, mining, investing in high-risk assets – all this requires learning the accounting methods for such transactions. The main purpose of this study is to scientifically substantiate approaches to reflecting operations with digital assets in accounting and determine the ways of receiving cryptocurrency by the enterprise. This study employed such methods of scientific cognition as description, analysis, and synthesis. It is established that there is no single approach to the recognition and accounting of cryptocurrencies. It is advisable to consider a cryptocurrency that belongs to intangible assets only in the context of long-term investments. Another development vector is identifying cryptocurrencies as a resource or inventory and accounting for them as inventory. It is determined that, first of all, before using cryptocurrencies, it is necessary to economically justify a certain method of evaluating cryptocurrencies legislatively. In the future, this will be necessary for companies that will use cryptocurrency to have the opportunity to continuously use this method in their accounting policies. The author of this study analysed the forms of electronic money and found that they can exist as information between computer networks (network-based) and can have an additional connection with a smart payment card (card-based). To identify the subject of accounting, the author determines that cryptocurrency should be considered as an intangible asset, while wallets for storing cryptocurrency should be considered as other non-current tangible assets

Keywords: cryptocurrency accounting, business operations, mining, blockchain, digital economy

Introduction

Modern information technology is changing the world. Blockchain technology is gradually developing, based on which it becomes possible to investigate issues related not only to cryptocurrency, but also to medicine, management, and the conduct of elections. That is, to use blockchain technology for the benefit of humanity. The modern transformation of the economy requires a rapid response to the processes transpiring in it. Such concepts as accounting digitalisation and multi-level digitalisation are being introduced. Therefore, the modern vision of accounting and taxation is changing and improving. The emergence of new digital assets in the form of cryptocurrencies creates a challenge to the accounting system regarding their reflection in it. Any

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activity must be defined, recognised, and transactions – be subject to taxation, since taxes are the source of replenishing the budget [1].

Considering modern approaches to ordering services and paying for goods without leaving the home, non-cash payments become of particular importance, and necessitate the investigation of such approaches to reflect transactions in the conventional accounting system. In the context of conducting e-business, when using electronic (digital) wallets, there is a need for accounting for transactions with them. One needs to establish which ledgers to use to reflect a certain number of such wallets. Furthermore, one needs to understand which ledgers to use to reflect activities such as mining, and how to classify such activities (financial, investment, or basic). Making investments in highly liquid, high-risk assets – all this requires investigating approaches to reflect such operations in accounting.

If an enterprise controls resources based on previous experience and expects to receive economic benefits in the future, then such resources are assets. Disputes continue among researchers regarding the economic nature of cryptocurrencies. Cryptocurrency should be understood as a special type of intangible assets that an enterprise can use for investment. That is, a cryptocurrency constitutes a non-monetary asset that has no material form. An asset can be considered any resource, the value of which can be reliably estimated, and its use is expected to bring benefits in the future. It is advisable to consider whether a cryptocurrency belongs to intangible assets only in the context of long-term investment. Given the high volatility of the cryptocurrency market and its constantly changing value, the process of evaluating such an asset becomes very complex. And determining the real value of one Bitcoin depends on the resources spent (for example, the power of equipment for generating a Bitcoin, internet speed, electricity costs, the complexity of the reward redistribution system, the main characteristics of the pool, etc.) [2].

Apart from the fact that a cryptocurrency can be an intangible asset, under certain conditions it can also be identified as a stock and reflected in other ledgers. That is, if the cryptocurrency is in the process of mining with the subsequent purpose of selling it, then it is proposed to apply the provisions of IFRS 2 "Reserves" [3]. This approach requires some approaches and discussions among researchers. Since cryptocurrency has a high risk, which is inherent in changes in value, it cannot be classified as a standard asset. As part of the company's funds, there are deposit funds, cash in the cash register, funds in the current account, highly liquid investments, securities, precious metals. That is, these are assets that can be quickly converted into cash, or they are cash and have high liquidity.

It is very difficult to make a correct assessment of the value of cryptocurrencies in the accounting system at a certain date of drawing up a balance sheet or conducting a transaction. The exchange rate difference when buying or selling can be significant, since the market value of a cryptocurrency depends on the supply-demand mechanism in the closed market of using this tool [4]. For example, in August 2019, 1 Bitcoin was worth just over 10,000 US dollars and in October of the same year, its value was 8,000 US dollars. About 50-80% of all cryptocurrency mining capacity is concentrated in China, and therefore the ban on cryptocurrency mining in eastern China has adversely affected the value of Bitcoin and digital assets [5]. First of all, before using cryptocurrency, it is necessary to economically justify a certain method of evaluating cryptocurrency at the legislative level. In the future, this is necessary so that companies that will use cryptocurrency can reflect a certain method in their accounting policies. In the academia studying accounting, which include O. Petruck and O. Novak [6], O. Augustova [7], V. Fostolovich [8], S. Lecgenchyc and A. Semenec [9], T. Tarasova, O. Usatenko, A. Makurin, V. Ivanenko and A. Cherchata [10], discussions continue concerning the valuation method to use, since for various purposes of using cryptocurrency, its value plays an essential role. For example, the value of a cryptocurrency can be determined by the cost of resources spent, or by revalued cost; by net realisable value (for mining purposes); by fair value for traders and those who want to conduct certain operations on a crypto exchange. Consequently, the professional competencies of an accountant in the context of blockchain technology are acquiring a fundamentally new level of development.

Among the Ukrainian researchers, it is worth noting O. Petruck and O. Novak, who investigated the essence of cryptocurrency and studied the features of accounting for such an asset. They distinguished the concepts of cryptocurrency and electronic money. These authors also provided examples of accounting for operations related to cryptocurrencies. They proved that cryptocurrency does not correspond to the term "money", and therefore it cannot be reflected in the balance sheet of the enterprise under the item "Cash and their equivalent" [6]. I. Derun, I. Sklyaruk investigated the classification of cryptocurrencies, studied its features and types. The authors analysed the model of decentralised digital currency schemes and covered their main

characteristics. They proposed an original approach to reflecting business operations with cryptocurrency in ledgers [11].

O. Augustova considered the economic and legal essence of cryptocurrencies. She investigated the stages of development of digital currency on the world market. This author suggests defining cryptocurrency as a virtual currency and equating it with the means of payment of business entities [7]. V. Fostolovich investigated the issues of the digital information space and the necessity of solving the issue of accounting and taxation of operations with cryptocurrency [8]. The author suggests considering cryptocurrency as a financial instrument that should be evaluated at fair value. He notes that all operations related to the generation of income and expenses incurred should be controlled by the tax administration, which should also monitor existing wallets for the safety of any cryptocurrency.

Despite all the existing developments of researchers and the increased interest in such a specific asset as cryptocurrency, as well as the rapid development of information technology, requires numerous additional studies of this asset. It is necessary to obtain unambiguous answers to the frequently asked questions related to the recognition, calculation of value, and evaluation, as well as reflection in ledgers and understanding of the tax base to receive tax revenues to the state. Furthermore, the National Bank of Ukraine does not recognise cryptocurrency as a means of payment, which makes its use illegal. But at the same time, converting cryptocurrencies into national monetary units and vice versa does not cause violations in terms of the legislation of Ukraine [8].

Materials and Methods

This study is based on a comprehensive analysis of events in the world of cryptocurrencies. The research was performed in two main areas. The first area is the analysis of previous studies related to the theoretical premise of the emergence of cryptocurrencies. The main method of research is the empirical method, which was employed to observe changes in the attitude of countries towards cryptocurrencies. The measurement process also provided an insight into the scope of the Bitcoin market. As a result of researching the literature, it was established that cryptocurrency as electronic money constitutes a non-personalised payment instrument and rotates outside the banking system in electronic form. Therefore, this is precisely what influences the fact that the state cannot control this process, making the national banks of many countries suspicious of such money.

As for the second area, the study investigated the legal status of cryptocurrencies in Ukraine and abroad. It was established that the lack of state control is conditioned upon the imperfection of the system of legal regulation of the status of cryptocurrencies in Ukraine. The following hypotheses were put forward:

– legalisation and recognition of modern funds as means of payment will make this process more controlled and regulated;

– transparency of cryptocurrency transactions on exchanges will increase confidence, as well as create opportunities for improving the tax system to tax such transactions and this type of activity.

In the course of the study, the description method was used to record certain features of specifying cryptocurrency records in accounting. This provided a greater insight into what the digital assets (cryptocurrencies) should be recognised as. A considerable number of scientific papers were analysed, indicating in them the basics of solving a scientific problem related to the identification of the accounting object. The identification and recognition of an object in accounting as a certain type of asset influences its further accounting and determination of the tax base and further specification in the financial statements.

Results and Discussion

Thanks to gadgets and the global network, business requirements are evolving. A new approach to its management, namely e-business, is being introduced. At the same time, the approach to making payments for goods, works, and services is evolving [12]. Approximately during 1998-2002, the electronic payment system WebMoney and Yandex funds were created. Much later, namely in 2007, the Qiwi settlement service was created Apart from such systems, there are also EasyPay, PayPal, GlobalMoney, Maxi, and many others [13]. In 2008, certain changes were introduced concerning the use of modern cash in the settlement procedures. It was that year when a digital currency, namely Bitcoin, was first used to calculate and exchange 10,000 Bitcoins for two pizzas [12]. When keeping records, it is proposed to separate the concepts of cryptocurrency and electronic money. Focusing on the fact that electronic money can be immediately converted into money from the country where it is used. For example, the authors of this study consider the WebMoney electronic payment system. Until 2018, this system allowed creating a WMU-type wallet, which was the title sign equivalent to the Ukrainian Hryvnia. And WMZ is the equivalent of the US dollar. WMX in this system is designated as an analogue of Bitcoin, where it is possible to exchange 1 WMX for 0.001 BTC (as of October 2019, this is almost 8.2 US dollars).

Having analysed the form of electronic money, it was found that they can exist in the form of information in the middle of computer networks (*network-based*), as well as have an additional connection with a smart payment card (*card-based*). Cryptocurrency is a certain amount of information in electronic form, which is represented using a cryptographic key with a size of 256 bits, in which 33 characters are encoded, for example, 1bq9qza7fn9snscyjqb3zcn46bibtkt4ee – the first digit: one or three is not included in the calculation. Thus, in this matter, cryptocurrency is similar to electronic money [14]. From the standpoint of anonymity, electronic money comes with certain requirements for user identification, i.e., personalisation and without such requirements (anonymous). Yet again, there are some similarities in this issue, namely cryptocurrency is completely anonymous. It is not possible to identify who and to whom such funds were transferred, but users can make sure that they received funds from a particular person.

If one analyses the issuer of funds, then electronic money can be fiat, included in the state financial system as separate payment subsystems and denominated, and always in the national currency of a particular country. At the same time, they can be a private currency that recognises their value in this state, but always needs to be exchanged for the currency of the state, for example, as WMR – roubles and WMU – Hryvnia. Any cryptocurrency has no issuer. This system functions in such a way that it is possible to increase the number of funds in a logarithmic progression until the figure of 21 million is reached. Therefore, to ensure a sufficient amount of funds, bitcoin is divided to the eighth decimal place. The smallest unit of measurement is 0.00000001 BTC and is called Satoshi. On currency exchanges, traders know that the smallest unit of measurement for changes in the exchange rate is 0.0001 and is called Peeps [15].

Most foreign companies use cryptocurrency for investment purposes, or accept it as a means of payment. This has led to an urgent need for managers to develop accounting standards, consider this feature of the modern economic world, and develop mechanisms to regulate how they are reflected in financial statements. The lack of particular guidelines and methodology has led to various accounting methods used in practice, which have created considerable issues for developers of financial statements. This has compelled the management to understand exactly where to reflect cryptocurrency, since independent decision-making destroys such stages of accounting as continuity, measurement, registration, which contributes to the emergence of scraps of accounting procedures on the market. Furthermore, these challenges can lead to revenue management opportunities or increased information asymmetry between stakeholders and organisations. In the future, this leaves a certain imprint on the comparison of enterprises with each other, for example, at the level of income, because some enterprises will use and account for cryptocurrencies, while others will not recognise it. At the same time, any cryptocurrency can be exchanged for real money, that is, get additional income that must be taxed [15].

Currently, there is a debate among researchers about what to consider cryptocurrency assets and the cryptocurrency itself. Two approaches were developed for accounting and taxation of such a specific asset. The first is to recognise cryptocurrencies as commodities that can be exchanged for other commodities. Then such transactions should be subject to the basic value-added tax rate of 20%. The second is to define cryptocurrency as a financial instrument and consider it as a type of modern money. When performing taxation, it is necessary to use the income tax rate of 18% for enterprises or for individuals to apply the personal income tax rate of 18%.

To solve the problems associated with accounting and taxation of cryptocurrencies, it is necessary to define the object. For example, the committee on International Financial Reporting Standards recognised that cryptocurrency cannot be identified with cash or financial assets, but suggested that it should be classified as an intangible asset [16]. The International Financial Reporting Interpretations Committee (IFRIC) is a fairly influential body in the international financial system. According to the IFRIC's conclusions, cryptocurrency constitutes a non-monetary asset without physical embodiment [16]. Cryptocurrency cannot be considered securities, since it does not give the owner contractual exchange rights. The authors of this study emphasise that the IFRS document on the status of cryptocurrencies is of a recommendatory nature and reflects only the Committee's opinion. Back in 2014, the State of New York recognised Bitcoin as intangible property, and the State of Nevada also signed a corresponding agreement on its recognition.

Until the legal status of cryptocurrencies in Ukraine is determined, it is not possible to single out a common opinion among researchers concerning the accounting of transactions with this type of asset. Factually, any cryptocurrency constitutes a source code, which is a cryptocurrency key, and it is this key that is the object of

ownership rights. It can be used as a means of exchange that functions in the blockchain system as accounting units. Furthermore, all assets related to cryptocurrency are stored on separate wallets. For example, Bitcoin – BTC is stored on emcd.io, and the Bitcoin Cash – BCH is stored in the pool.viabtc. In other words, it is necessary to reflect the wallet as a non-current tangible asset, and any cryptocurrency as an intangible asset.

Thus, it can be concluded that in accounting, transactions related to cryptocurrency should be reflected as ordinary intangible assets. That is, the acquired (created) intangible assets must be credited to the balance sheet of the enterprise at the initial cost, comprising the cost (acquisition) and other expenses associated with this asset. The question of the cost of accounting for cryptocurrencies is problematic, since in Ukraine and in the world, there are no clear standards in the field of cryptocurrencies. Valuation of intangible assets constitutes a very complex issue, which is conditioned upon the specificity of this category, the lack of valuation standards, an underdeveloped active market that is ever-evolving, new cryptocurrencies are being designed – all this hinders an adequate assessment. Too strict regulation of the current accounting legislation in developed countries such as the United States, Germany, Canada, and the United Kingdom does not contribute to the development of an objective assessment of the value of cryptocurrencies [17].

Thus, cryptocurrency and the establishment of ownership rights to its use, management of a particular enterprise or individual for accounting purposes is understudied. It is proposed to determine the ways of receipt to understand the historical value of cryptocurrency, registration and its further application. It is established that an intangible asset should be identified by various ways of receipt: exchange, gratuitous receipt, contribution to the authorised capital by a participant, receipt as a result of a merger of enterprises. Table 1 demonstrates the main options for receiving cryptocurrency to the enterprise, reflecting the main ledgers to be used.

Table 1. Main ways of receipt and options for reflecting cryptocurrencies in accounting

Seq. No.	Receipt paths	Rating	Ledgers
1	Exchange	Exchange for a similar IA* Exchange for non-similar IA*	127 "Other intangible assets" – cryptocurrency 117 "Other non-current tangible assets" – cryptocurrency wallet
2	Free receipt	Initial cost-fair value at the date and time of the transaction	424 "Non-current assets received free of charge"
3	Participant's contribution to the authorised capital	Initial cost = fair value agreed by the founders	D 127 K 46
4	Reception as a result of a merger of enterprises	Initial cost = fair value	
5	Cryptocurrency generated by its own information and technological means	The cost of mining expenses (Expenses for ASIC purchases; electricity costs; internet traffic costs)	D 425 K 127

Note: *IA – intangible asset
Source: compiled by the author based on [7; 12]

O. Augustova [7] suggested accounting for cryptocurrency as electronic money, using accounts 315 "Special accounts in national currency", 127 "Other intangible assets". Considering cryptocurrency as a financial investment, it is necessary to use items 143 "Investments to unrelated parties", 352 "Other current financial investments" or account them as part of accounts receivable per item 377 "Settlements with other debtors". And in the balance sheet, the value of such assets should be reflected in item 1165 "Money and its equivalent" [12].

Control over the turnover of cryptocurrencies

should be carried out by the National Bank of Ukraine, and all transactions with it must be taxed. Cryptocurrency is not a completely legal tender, as most companies in the world do not yet work with it. It is also not recognised as a means of payment in many countries at the legislative level. In particular, the Central Bank of Finland stated that Bitcoin is neither a currency nor even an electronic means of payment, since such objects must have an appropriate issuer responsible for their activities. The Central Bank of China also banned any operations with virtual currency, noting that this is an unlawful means of payment that has no legal status. Notably, Bitcoin does not even have a legitimate developer (only their alias is publicly known), and therefore this confirms that this object is outside the legal framework so far [18].

The way cryptocurrency is recognised will directly affect its further accounting, crediting to the company's balance sheet and further operations related to taxation. If a legislative decision is made to recognise cryptocurrency as an intangible asset, then it is worth applying the usual operations for this procedure [19]. And if it is recognised and credited to modern money, then income tax or personal income tax should be used. The solution to the tax process lies in determining and improving the legal status of cryptocurrencies, amending the Tax Code of Ukraine. Introduction of a single mechanism for recognising the object of accounting and the tax base. After certain changes associated with the recognition of a cryptocurrency, it is necessary to determine its place in accounting. For example, if cryptocurrencies are considered money, then it should be reflected in line 1165 "Money and its equivalent" [12]. If cryptocurrency is defined as other current financial investments, then the account 352 should be used, and respective reflection be made in the financial statements in item 1160 "Current financial investments" [7]. For accounting purposes, it is appropriate to identify the value of cryptocurrencies available on the wallet at the disposal of the enterprise at each reporting date [20], which determines further research towards evaluating, re-evaluating, markdown, and revaluation of cryptocurrencies.

Conclusions

Without understanding how to recognise cryptocurrency in accounting, it is impossible to carry out accounting itself. It is impossible to determine the fair value of such an asset, and use certain ledgers with subsequent reflection in the financial statements. Therefore, Ukraine needs to develop and implement regulations that can govern the turnover of digital assets on its territory. Furthermore, it is necessary to change the terminology, since it has not yet been determined what cryptocurrencies, digital assets, and digital currency are and how to distinguish them. It also remains unclear what a cryptocurrency is to be considered as – an intangible asset, a stock, a financial investment, cash, etc. For the development of a transparent cryptocurrency market, it is necessary to create the appropriate legal conditions. The first step, which confirms the state's readiness to work on the development of legislative and regulatory frameworks that will ensure transparency and quality of relations between investors and market participants with cryptocurrencies, was taken in the form of a Concept of State Regulation of Operations with Cryptocurrencies in Ukraine.

Notably, in Ukraine, the issue of developing statutory regulation of cryptocurrency operations and relations is urgent. The lack of legal regulation of operations with encoded currency does not allow the National Bank of Ukraine and other bodies to control, guarantee, and protect against abuse of such operations, although the fact of their implementation in the business sector is indisputable. This requires amendments to the Tax Code of Ukraine and the development of a tax system for this process. The legislative vacuum is a springboard for abuse of power and a hindrance of the country's development. It is crucial that the legal side keeps up with the technological side, for effective scaling of business in Ukraine and interaction of regulatory authorities with such a business. Given the evolution of economic relations in society, the tax system should also evolve. Prospects for further research are to develop the accounting display of cryptocurrency depending on the method of its receipt to the owner, for example, by mining, exchanging for money or another asset. Separate research is required on the taxation of operations with cryptocurrencies.

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Зародження і розвиток фіскального механізму регулювання інвестиційних процесів на українських землях за княжих часів

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Анотація. Вивчення джерел наповнення і напрямів використання княжої казни та їх вплив на розвиток інвестиційних процесів за часів Київської Русі набуває особливої актуальності, адже дозволяє з'ясувати, чи здійснювався цей процес на українських землях хаотично, або ж мав виразні правила і порядок. Мета дослідження полягає у розгляді особливостей формування та функціонування фіскального механізму регулювання інвестиційних процесів на українській території за княжих часів (IX–XIV ст.). Специфіка наукових завдань, що становлять предмет дослідження, вимагала використання комплексу спеціальних методів (емпіричних, теоретичних, теоретико-емпіричних), застосування яких допомогло проаналізувати історичні аспекти розвитку фіскального механізму та його впливу на здійснення інвестицій у період існування Київської Русі. Під час дослідження з'ясовано специфіку функціонування складових фіскального механізму, зокрема доходів і видатків княжої казни. Встановлено, що у Давньоруській державі доходи княжої казни здебільшого формувались із податкових джерел, а також надходили від господарської, судової, військової та торговельної діяльності держави. Виявлено, що видатки княжої казни спрямовувались на забезпечення не лише державних потреб, а й особистих потреб князя та його дружини. Визначено, що існували й додаткові джерела забезпечення державних потреб, зокрема натуральні повинності. Із приходом монголо-татар на українські землі, фіскальний механізм зазнав змін, адже завойовники запровадили власні податкові платежі, які збирались на задоволення потреб Золотої Орди. Видатки бюджету монголо-татарської держави реального впливу на інвестиційний розвиток українських територій не здійснювали, адже забезпечували виключно потреби держави-завойовника. Практична цінність дослідження полягає в тому, що проведений історичний аналіз дозволив з'ясувати механізм впливу фіску на інвестиційні процеси у Київській Русі, елементи якого можуть бути запроваджені і в сучасних умовах. Такий вплив здійснювався за рахунок пільгового оподаткування, запровадження інвестиційно орієнтованих повинностей і виділення коштів із княжої казни

Ключові слова: фіск, інвестиції, княжа казна, доходи казни, податки, видатки казни

Origin and Development of the Fiscal Mechanism of Regulation of Investment Processes in the Ukrainian Lands in Princely Times

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Abstract. The study of the sources and areas of use of the princely treasury and their impact on the development of investment processes in the times of Kyivan Rus becomes particularly relevant, because it allows finding out whether this process was carried out chaotically, or had clear rules and order. The purpose of the study is to consider the peculiarities of the establishment and operation of the tax mechanism for regulating investment processes on the Ukrainian territory in princely times (9th-14th centuries). The specifics of the scientific tasks that make up the subject of research required the use of a set of special methods (empirical and theoretical), the use of which helped to analyse the historical aspects of the development of the fiscal mechanism and its impact on investment during the existence of Kyivan Rus. The study clarified the specifics of the operation of the components of the fiscal mechanism, including revenues and expenditures of the prince's treasury. It is established that in the Kyivan Rus, state treasury revenues were mainly formed from tax sources and came from economic, judicial, military, and commercial activities of the state. It is revealed that the expenses of the princely treasury were directed to meet not only state needs, but also the personal needs of the prince and his wife. It is determined that there were also additional sources of providing for state needs, in particular, in-kind duties. With the arrival of the Mongol-Tatars on Ukrainian lands, the fiscal mechanism changed, because the conquerors introduced their own tax payments, which were collected to meet the needs of the Golden Horde. The budget expenditures of the Mongol-Tatar state did not have a real impact on the investment development of the Ukrainian territories, because they provided exclusively for the needs of the conquering state. The practical value of the study is conditioned by the fact that the historical analysis revealed the mechanism of fiscal influence on investment processes in Kyivan Rus, elements of which can be introduced in modern conditions. This impact was implemented through preferential taxation, the introduction of investment-oriented duties, and the allocation of funds from the princely treasury

Keywords: fisc, investments, princely treasury, treasury income, taxes, treasury expenses

Introduction

The genesis of the Ukrainian state shows that in different historical periods of socio-economic development, individual functional, and structural components of the fiscal mechanism for regulating investment development were formed and implemented together with the state and corresponded to the specifics of a particular historical era: the social structure, methods of farming, sources of filling and areas of using the budget, forms of taxation, and methods of financing the budget. The first manifestations of the establishment and operation of the fiscal mechanism on Ukrainian lands can be observed in the time of Kyivan Rus – the state formation of East Slavic and Finno-Ugric tribes under the rule of princes of the Rurik dynasty, which existed from the 9th to the 13th centuries. Now the study of the fiscal mechanism of Kyivan Rus is of great importance, especially in the context of the fact that it was at that time that the first manifestations of regulation of investment processes appeared due to fiscal instruments that are still relevant today.

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The question of fisc in Kyivan Rus was considered by many Ukrainian and foreign researchers. Thus, direct taxes as elements of the fiscal mechanism of Kyivan Rus were studied by A.Yu. Dvornichenko [1; 2], A.Ye. Shevchenko, S.V. Kudin [3], A.A. Nastyuk [2; 4], F.O. Yaroshenko, V.V. Pavlenko, V.P. Pavlenko [5], P.V. Tsymbal [6], S.N. Temushev [7]. I.I. Berezhniuk [8], K.K. Arsenev [9], and V.V. Piliaeva [10] focused their research on indirect taxes as components of the fiscal mechanism of princely times. Many researchers considered individual revenue components of the fiscal mechanism of Kyivan Rus, in particular, revenues from judicial activities were studied by A.O. Inshakova, and I.A. Turbina [11], A.L. Horoshkevich [12]; military revenues were considered by N.P. Kucheriavenko [13], A.A. Nastyuk [14]; revenues from the princely domain were outlined by I.Y. Boyko [15], S.V. Yushkov [16]. The influence of profitable fiscal instruments on the investment development of Kyivan Rus was studied by V.V. Nebrat [17]. Additional sources of providing for the needs of the state in princely times were investigated by S.M. Solovev [18], K.K. Arsenev [19; 20], V.A. Kliuchevskii [21]. The fiscal mechanism on Ukrainian lands during the Mongol-Tatar invasion was studied by V.M. Lytvyn [22], A.V. Tolkushkin [23], I.H. Berezhniuk [24], S.G. Vereshchagin [25], I.P. Petrushevskii [26], I.I. Podik [27]. Despite a large number of studies, researchers failed to form a comprehensive approach to the operation of the fiscal mechanism in the Kyivan Rus, which determined the relevance and purpose of the study.

The purpose of the study is to investigate the historical aspects of the establishment and operation of the fiscal mechanism for regulating investment processes in princely times, starting with the foundation of Kyivan Rus and ending with the period of its fragmentation. In the furtherance of this goal, the following *tasks* are set: to study the revenue tools of the fiscal mechanism for regulating investment processes in the Kyivan Rus, in particular by sources of development; to investigate the revenue tools of the fiscal mechanism for regulating investment processes in Kyivan Rus, in particular by spending areas; to form a comprehensive approach to the impact of the fiscal mechanism on investment processes in princely times.

Methodology

The research materials are historical literature containing facts that characterise the history and state of functioning of the fiscal mechanism in Kyivan Rus, and serve as a way to create initial ideas and initial concepts about the influence of the fiscal mechanism on investment processes in princely times. A thorough study of the historical literature allowed separating the known from the unknown, recording already developed concepts, established facts, accumulated experience, and clearly outlining the fiscal mechanism for regulating investment processes in the Old Russian state.

Methods of study of the fiscal mechanism of investment processes regulation are ways of theoretical study and practical knowledge of the processes of establishment, distribution and use of financial resources to implement fiscal policy aimed at enhancing investment activity. Methods of research of the fiscal mechanism of regulation of investment processes include methods of empirical, theoretical, and theoretical-empirical level.

Empirical-level methods are directly related to the phenomena under consideration and are used at the stage of forming a scientific hypothesis. In the course of the research, such methods of empirical level as a description (recording of historical aspects of the fiscal mechanism operation), comparison (comparison of historical phenomena and processes that occurred in the fiscal mechanism), observation (survey of historical facts that characterise the operation of the fiscal mechanism).

Methods of the theoretical level allow conducting logical studies of the collected historical facts, formulate concepts, judgments, and draw conclusions. The research was conducted using the following theoretical methods: historical (studying the emergence, establishment and development of the fiscal mechanism in chronological order), logical (producing new statements about the functioning of the fiscal mechanism from already established ones), argumentation (substantiating the construction of the fiscal mechanism with the help of known historical facts, conditioned by the implementation of certain considerations).

Methods of the theoretical and empirical level help to identify certain reliable facts and objective manifestations of reality in the study of processes. During the research, the following methods of theoretical and empirical level were used: analysis and synthesis, induction and deduction, abstraction, generalisation, analogy, concretisation and classification.

Results and Discussion

General characteristics of the fiscal mechanism of the Kyivan Rus

Kyivan Rus as the first early Slavic state went through two periods of development: 9^{th}-10^{th} centuries – the period of land unification under the rule of a single prince, 11^{th}-12^{th} centuries – the period of development and princely feuds caused by the invasion of the

Mongol-Tatars [1, p. 9]. Accordingly, the fiscal mechanism covered two periods of development: the first concerned the income and expenses of the princely treasury of an independent state, and the second characterised the income and expenses of the Khan's treasury of the Golden Horde, under whose power the fragmented lands of Rus fell.

Kyivan Rus, on the one hand, was one of the largest state entities and constantly fought for a dominant position in Europe, so its fiscal mechanism was focused on meeting military and foreign policy needs. On the other hand, Kyivan Rus was a monarchy, so its fiscal mechanism met the needs of the prince and his wife. The impact of the fiscal mechanism on investment development was minimal, which was conditioned by the specifics of the socio-economic development at that time. In general, the fiscal mechanism in Kyivan Rus was at the stage of its origin, so it covered separate revenue and expenditure instruments (Fig. 1). It should be noted that the fiscal mechanism of Kyivan Rus was inextricably linked with the princely treasury, the prototype of the modern budget. Moreover, the private treasury of the prince and the state treasury of Kyivan Rus were a single whole, so the financial resources accumulated in the princely treasury were directed both to meet the personal needs of the prince and his wife, and to meet national needs.

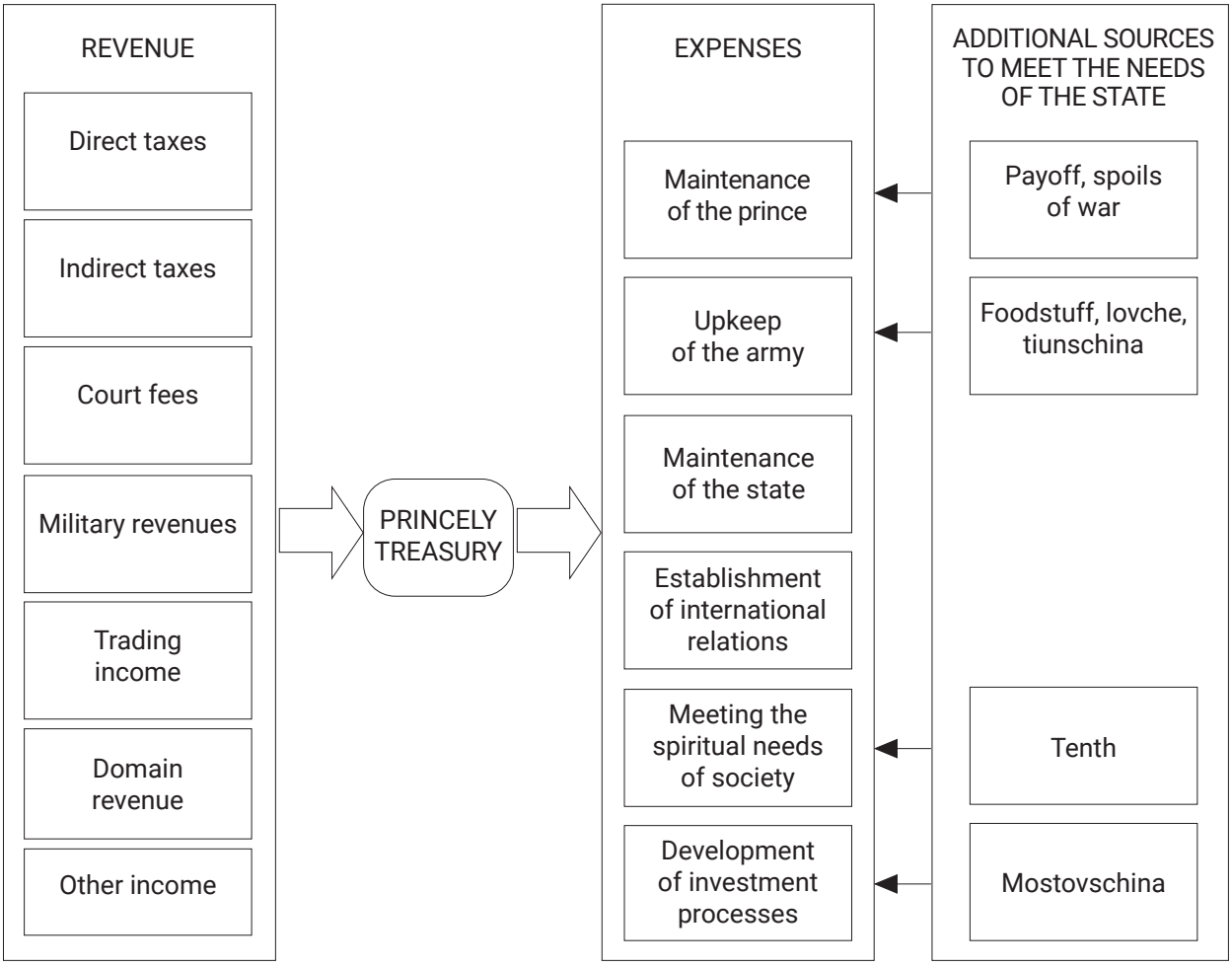

Figure 1. Components of the fiscal mechanism of Kyivan Rus
Source: developed by the author

Revenue instruments of the fiscal mechanism of Kyivan Rus

The profitable instruments of the fiscal mechanism of Kyivan Rus fully corresponded to the socio-political and economic conditions of that time, so the vast majority were formed due to military, trade, and judicial activities. The princely treasury was formed mainly at the expense of taxes, although there were tax and non-tax payments that did not go directly to the treasury ("tenth", "mostovschina", "lovche"), but were managed

to finance specific state needs (spiritual, investment, managerial).

The main direct tax in Kyivan Rus was tribute. Notably, at the beginning of its existence, the tribute was an indemnity from the defeated tribes and was irregular in nature, but over time it was transformed into a systematic direct tax. The specifics of taxing tribute in the Kyivan Rus consisted in two ways of collecting it: "polyuddya" – by equipping the princely army to collect tax and "povoz" – by bringing the tax directly to the prince.

A.Ye. Shevchenko, S.V. Kudin, A.A. Nastyuk suggest that since the time of Prince Oleh, "polyuddya" was carried out by moving four princely troops through the territories of conquered tribes [3, p. 186]. Moreover, the prince himself, as a rule, did not go to collect tribute. He collected tribute personally only when he conquered the lands, while simultaneously setting the amount of tribute, while its further collection was carried out by the princely troops [3, p. 162]. The latter left Kyiv at the end of autumn and went to certain places on the conquered lands, which were called "pogost", for the winter to collect tribute brought there, and for the administration of justice. Tribute was paid in-kind by resources (furs, hides, honey, livestock, grain) that were necessary for trade. The resources that were collected for the prince's army were valuable as a commodity that could be sold abroad. By themselves, the resources did not have value, because they were collected in large volumes, so they could not be sold at a high price on the territory of Kyivan Rus, but they acquired significant value on foreign markets [3, p. 150]

At the beginning of spring, the troops returned to Kyiv, where they left part of the tribute to the prince, and then went to Byzantium to trade goods paid as tribute. The princely troops stayed abroad all summer and returned to Kyiv in the fall, where they paid a tenth of their income from trade to the prince. This process of collecting and then selling tribute by the princely troops was called "kruzhinnya". In general, "polyuddya" was quite spontaneous, which did not differ much from raids to obtain military loot. According to F.O. Yaroshenko, V.V. Pavlenko, V.P. Pavlenko, "polyuddya" had other negative features, in particular, unsettled size, arbitrariness of collection, collection by persons who are personally interested in the maximum income [5, p. 54]. Fiscal pressure, which increased every year, caused not only protests, but also uprisings against princely arbitrariness. One of these uprisings led to the murder of prince Ihor by the drevlyans.

Princess Olga, realising the shortcomings of collecting tribute, in 946-947 carried out the first tax reform in the history of Ukrainian lands, which regulated the collection of tribute and transformed "polyuddya" into "povozne". Olga created administrative and financial centres for collecting tribute based on "pogost", appointed permanent collectors of tribute, established "lessons" and "charters" that determined the content and amount of tribute. As noted bu P.V. Tsymbal, lessons should be understood as a list of duties that established the amount and term of payment of tribute, and charters – the definition and interpretation of the procedure for collecting it [6, p. 15].

"Pogost" turned from places of temporary stops of the princely army into centres of permanent princely administrative and financial management. It was in the pogost that the collection of tribute was concentrated, while the functions of collecting tribute and judicial functions were assigned to special officials – tiuns. S.M. Temushev notes that the pogosts ceased to exist either at the end of the 10th century, due to the transition of their function to cities, or at the end of the 12th century, due to the spread of princely and boyar land ownership [7, p. 110-111]. A.Yu. Dvornichenko notes that despite the introduction of "povozne", some appanage princes of later times continued to collect tribute by the method of "polyuddya" almost until the 15th century [2, p. 189]. In general, Princess Olga's reforms contributed to the institutionalisation of the socio-political life of Kyivan Rus, created a stable tax system that was able to ensure the stability of princely finances. Olga also initiated stable revenues to the treasury from her own princely possession (domain).

The next tax reform took place in the time of Vladimir the Great, who established a fixed distribution of tribute between Kyiv (the princely treasury) and the conquered territories: 2/3 transmitted to Kyiv and 1/3 remained in place. According to A.A. Nastyuk, Prince Vladimir pursued a policy of financial exsanguination of the conquered lands, undermining their financial independence, which hindered the process of disintegration of Kyivan Rus, because it is difficult to fight for independence without having financial resources [4, p. 38]. However, according to the author, the economic development of the conquered territories in the time of Vladimir the Great reached such a level that individual lands could resist Kyiv, and their rulers were tempted not to give two-thirds of their income to the princely treasury. This was one of the reasons for the princely feuds and the subsequent collapse of Kyivan Rus.

Evidently, in such a large state as Kyivan Rus, direct taxes were not enough to meet all its needs. Therefore, to fill the princely treasury, a significant number of indirect taxes were introduced, which were

collected exclusively in monetary form. As noted by Ye.M. Rudnichenko, the first mention of customs payments relate to the reign of Prince Oleh, but the regulation of their collection was carried out by the norms of customary law, until it was finally defined in the Old Russian Law during the reign of Yaroslav the Wise [8, p. 320]. The evolution of customs payments in Kyivan Rus began with the concept of "myt", which meant the place where carts and boats stopped; then it became the generic name of all trade and travel duties. During the Mongol-Tatar invasion, the concept of "tamga" was introduced and the trade meaning of "myt" passes to it, and "myt" turned into an exclusively travel toll levied when transporting goods through internal outposts [9, p. 607-608]. "Myt" was collected for the right to transport goods on carts and carts ("suhyi myt") and for the right to transport goods on boats and ploughs ("vodyanyi myt"). Until the 13th century, tolls were collected only in large cities (Kyiv, Novgorod), and from the 13th century, it spread to smaller territorial entities.

Other customs payments were also introduced in Kyivan Rus, in particular during the transportation of goods. Thus, the toll that was levied on boats moored to the shore was called "berezhne" (coastal), and the duty that was levied on people, goods and animals transported from one bank of the river to the other was called "pereveiz" (transport) [10, p. 53-54].

During the reign of Yaroslav the Wise, the collection of norms of ancient Russian law "Russkaya Pravda" adopted by him defined a number of court fees and monetary compensation in favour of the prince, the judge, and the victim, which were aimed at satisfying the interests, first of all, of the injured party. Later, according to A.O. Inshakova and I.A. Turbina, this goal changed to enriching the state treasury, and later, as state power strengthened and punitive measures developed, judicial monetary sanctions were applied for the purpose of intimidation [11, p.21].

Court fees and monetary compensation included: "vira" (monetary remuneration in favour of the prince, which was paid by a person for the murder of a person or someone else's animal), "dyka vira" (monetary remuneration in favour of the prince, which was paid by the community in case of detection of a human or animal corpse on its territory, if the identity of the criminal was not established), "poluvira" (monetary remuneration in favour of the prince, which was paid by a person for committing injuries to a person), "prodazh" (monetary recovery in favour of the prince, which was paid to the guilty for violating personal other people's rights (except for murder)), "urok" (monetary compensation for causing damage, which was established for most crimes and paid for material damage suffered by the owner of any object because of the crime), "golovshchyna" (monetary compensation to the victim, the amount of which was not determined by law and initially depended on the mutual agreement of the offended person with the offender, and subsequently determined by the court based on a complaint from the offended party), "pomichne" (fee for the introduction of a court case), "zalizne" (fee from the appealed person who was deprived of his liberty and chained in iron shackles), "povynne" (toll from the defendant or a party who pleaded guilty without bringing the case to court) and "peresud" (toll for consideration of the case) [6, p. 19-20; 11, p. 21-22; 12, p. 99].

Since Kyivan Rus was a warlike state, the princely treasury received significant revenues from aggressive activities, including gifts and military loot. Gifts were a reward to the prince from the conquered tribes for protecting and maintaining peace, they were collected in the form of a one-time, extraordinary fee when the prince entered and left any city (area), and when the prince ascended the throne [13, p. 323]. Spoils of war were collected in two cases. The first case involved making peace with a hostile tribe (country) and receiving a ransom. The payoff was provided for each soldier (alive or dead) who participated in military operations and had to cover the costs of maintaining the princely army. A.A. Nastyuk notes that a tenth of the payoff for each soldier should go to the princely treasury [14, p. 51]. The second case involved a military conflict. Under these circumstances, the princely army seized enemy material goods by force. However, how the distribution of military loot between the soldiers and the princely treasury took place is not yet known for certain.

At the end of the 10th century, as noted by I.Y. Boyko, in Kyivan Rus included the princely domain, boyar and church domains, personal domains of church hierarchs, lands of communities, individual family land plots, uninhabited free (state) lands, the supreme owner of which was the Grand Duke as the head of state [15, p. 392]. It was domains that became administrative and economic centres of feudal possessions and one of the sources of filling the state treasury.

At the beginning of its existence, the princely domain covered cities, villages, and lands ("forests", "perevesishche"), but in the 12th century it grew significantly. Thus, on the Old Russian lands, large complexes of princely possessions began to appear, the strongholds of which have become cities. Further development of the princely domain took place through the

gradual consolidation of princely cities and parishes with territorial units that were in the general administrative system of the principalities. The system of power and subordination established in these cities and volosts, the princes tried to expand to all other administrative units. The greatest success in this, according to S.V. Yushkov, was achieved in the 12tg-13th centuries, when all the lands that were not part of the church and boyar domains began to form the princely domain [16, p. 39-40]. Consequently, the princely possessions for a long time were an important source of providing for the needs of the prince and his wife, and therefore a component of the income of the princely treasury, which was inseparable from the state.

In general, the revenue instruments of the fiscal mechanism in the times of Kyivan Rus were focused on filling the treasury, and not on regulating socio-economic processes, in particular investment ones. However, N.O. Gorin claims that for the development of craft settlements engaged in the production and processing of agricultural products, the state provided various tax incentives that were of an investment nature [17, p. 26].

Expenditure instruments of the fiscal mechanism of Kyivan Rus

The expenditure instruments of the fiscal mechanism of Kyivan Rus also corresponded to the socio-political and economic conditions of that time, so they mainly concerned military, administrative, foreign trade, and spiritual goals. At the same time, only the expenses for the maintenance of the prince and his wife and foreign trade expenses were fully financed from the princely treasury, while other expenses were only partially provided.

Thus, the maintenance of the army was carried out in a mixed way. In peacetime, the financing of the army was closely connected with "polyuddya". The organisation of "polyuddya" took place in such a way that subordinate tribes were obliged to support the princely troops, which was called the "obrok" [18, p. 37]. According to A.Ye. Shevchenko, S.V. Kudin, A.A. Nastyuk, such a system allowed the princes to maintain a large army, enrich themselves, weaken the conquered tribes and, ultimately, strengthen the role of princely power in the Old Russian state [3, p.186]. In wartime, the financing of the princely army was carried out by farming of revenues and captured loot.

To finance management costs during the reign of Prince Igor, "kormy" were introduced, which were called the method of keeping the prince of his judicial officers and managers by transferring to them the right to collect additional fees from a certain area or city. At the same time, the localities and cities themselves remained the property of the state (prince). For a long time, "kormy" was carried out in-kind, and during the transition to a centralised state, it was transferred to the monetary form. Initially, the size of the feed was determined either for each day, or for a week, quantitatively and qualitatively, or by human needs. Since ancient times, "kormy" has been paid by the population as a duty, regardless of whether the judge or manager was hungry or not. A well-fed person no longer needed alimentation in-kind; hence the transformation of in-kind service into a monetary form [19, p. 784-785]. In addition, according to V.A. Klyuchevsky, the "kormy" also included certain fees, in particular "entry" (collected when the manager entered the management of the district), "permanent (annual)", paid in the appropriate fixed terms (Petrine, Christmas). "Kormy" had the form of offerings, which took place at the entrance on St. Peter's day and on Christmas holidays by providing an appropriate amount of resources [21, p. 162]. The abuses that were inevitable during the granting of additional privileges to judges and managers caused a number of princely measures to protect the population from insults and untruths of princely agents. Since the 14th century, there were statutory certificates of the local administration, which were issued to the population of the relevant territory and contained a detailed list of various types of feed, court duties and other levies, beyond which judges and managers did not have the right to collect from the population. At the same time, the procedure for judicial liability of feeders for complaints of the population was determined. "Lovche" was charged for the maintenance of princely hunters, which covered not only the in-kind support of hunters, but also the obligations of the local population to take part in hunting [20, p. 786]. "Tiunshina" was introduced to provide for the princely officials – tiuns, which provided for material remuneration to tiuns for the performance of their duties [2, p. 191-192].

Vladimir the Great introduced the church tithe to finance the costs of spiritual needs, that is, the construction of religious buildings, which was a tenth of the prince's income, which was provided for the needs of cathedral churches, in particular the construction and maintenance of the Church of the Dormition of the Virgin (Church of the Tithes). Later, tithing turned

into a church tax, which was paid by the population (it accounted for a tenth of the income of the economy of an individual household) to support the parish clergy;

A number of duties were introduced to finance investment expenses, i.e., for the construction of cities, fortifications, bridges, dams, and roads. Thus, in the time of Yaroslav the Wise, "mostovschina" was introduced, that is, the ancient duty of all those who had land and households to repair roads, build and fix bridges, or pay with money instead. Even persons who were permanently exempt from any taxes and duties did not stop carrying out bridge duty. Sometimes the prince helped his subjects, taking on part of the financing of the "mostovschina" [9, p. 345-346]. "Mostovshchina" ensured the development of cities and the arrangement of trade routes, which allowed turning cities into organised centres subordinate to the princely authorities. This increased the trade turnover, increased the wealth of the population, and contributed to filling the princely treasury, from which funding for further urban improvement was increased. In general, the expenditure instruments of the fiscal mechanism of Kyivan Rus were focused on ensuring the personal and political interests of the prince, while other needs were partially covered by identifying additional sources of financing.

Fiscal mechanism in Kyivan Rus during the Mongol-Tatar invasion

In the 13th-14th centuries, the Ukrainian lands that survived the times of princely feuds were subjected to a Mongol-Tatar invasion. At this time, the fiscal mechanism provided for the needs of not only the Horde treasury, but also the treasury of fragmented principalities of the Rus. Profitable instruments of the fiscal mechanism during the reign of the Golden Horde in the Ukrainian territories can be divided into several categories. *The first category* income contained a one-time, periodic, and systematic tribute. According to V.M. Lytvyn, the regular tribute in favour of the Mongol-Tatars was called "kharja" in Arabic, or "chinysh" in Turkic, or "vyhid" in Old Russian. The tribute was qualitatively and quantitatively fixed and was paid first in-kind, and then in the monetary form [22, p. 274]. In addition, there was a periodic tribute that bore the Mongolian name "alban", and a one-time extraordinary tribute that bore the Mongolian name "kubchir". Only clergy and adult sons of priests were exempt from paying tribute if they lived together with their parents [22, p. 239]. O.V. Tolkushkin notes that in addition to "kharja", tribute was collected from the population, which was sent directly to the princely treasury, that is, a tribute as a state tax did not disappear, but continued to be collected together with the Horde tribute [23, p. 19]. "Kharaj" was collected first by the baskaks – authorised officials of the khans of the Golden Horde, who collected in-kind and monetary duties from the population of the conquered lands, and then by the Russian princes themselves. Moreover, the amount of "kharja" depended on the agreements of the grand dukes with the khans of the Golden Horde. *The second category* income included various indirect taxes (customs payments). During the time of the Golden Horde, the number of indirect taxes expanded significantly, because they were collected not only by Mongol-Tatar conquerors, but also by Russian princes. All indirect taxes of that time, according to V.V. Piliaeva, can be divided into several groups: trade, travel, service, and penalty [10, p. 57-58].

Trade customs payments included, first of all, "tamga", which was paid when trading in the markets from the price of goods determined by the duty collectors. Other trade duties included: "yavka" (for goods presented at customs), "zamyt" (for goods brought for sale, and from money (from arrival) for the purchase of goods), "osmnyche" (trade duty equal to 1/8 cost of goods), "hostynne" (for imported goods that were placed in warehouses), "poryadne" (trade duty on the purchase and sale of certain goods, in particular honey, caviar, fish, salt), "pyatno" (for branding horses, which was charged to both the seller and the buyer), "vuzlove" (for strapping goods with the application of a customs seal or for imposing customs marks), "vescheye" (for selling goods that needed weighing), "pomirne" (for the sale of measured goods, in particular, grain) [10, p. 58-59].

Travel customs payments included: "suhyi myt", "vodyanyi myt", "posazhne" (from a cart or boat loaded with goods, depending on its size in fathoms), "podduzhne" (from the number of carts), "polozove" (from the number of sleds), "berezhne" (from boats moored to the shore), "pogolovschina" (from the number of persons accompanying the goods), "zadniye kalachi" (from merchants who returned after selling goods), "mostove" (for travel (passage) on the bridge), "pereviz" (for transportation of goods across the river by ferries and boats; for transportation across mountain outposts), "proyizdne" (for the use of equipped roads) [8, p. 321; 10, p. 57-58].

Service customs payments included: "komorne" (for renting a warehouse), "gostynne" (for stopping at

guest house), "polavochne" (for renting a trading post), "zvalne" (for unloading a cart when weighing goods at the outpost or for loading goods), "pidyomne" (for lifting goods and installing them on a scale), "pomirne" (for weighing bulk goods in barrels or parts thereof), "vagove" (for weighing goods on a merchant's trade scale), "kontrarne" (from the weight of goods), "prypusk" (for bringing the scales into balance when weighing goods) [10, p. 61-62].

The penalty customs payments included: "promyt" (double duty, a fine that was levied for illegal movement of goods across the borders of a state or city, unauthorised detour of customs storeroom (gateway), and for hiding goods and livestock from customs control to evade customs payments), "zapovid" (additional fine for violation and smuggling (peremytnitstvo, pachkarstvo), which was carried out by foreign or local merchants), "promytne" (penalty for secret transportation of goods without payment of duty), "protamga" (for non-appearance of goods at customs) [10, p. 63-64; 24, p. 306].

S.G. Vereshchagin notes that, despite a large number of customs payments, they were not profitable for the treasury, firstly, based on certificates, clergy, some individuals, some cities, civil servants, etc., were exempt from paying them; secondly, as a result of granting the princes the right to collect customs payments to individuals and state institutions in their favour. Since the introduction of Christianity, some of the customs payments – for measuring and weighing – were collected by the church, but then their collection was again passed to princely officials [25, p. 190].

The third category covered fees and in-kind duties for the maintenance of the Mongol-Tatar army and the horde administrative apparatus. According to I.P. Petrushevsky and I.I. Podik, such tools included: "ihdrajat" (a systematic fee that was paid to reimburse the expenses of state institutions, the expenses of the Khan's army, and the family of the Khan himself), "harijiyat" (an extraordinary fee that was paid to reimburse the expenses of state institutions, the expenses of the Khan's Army, and the family of the Khan himself), "ulag" (the duty to provide postal and courier horses at the request of the heads of the postal service to move from one postal station to another), "ulam" (the duty to bear the expenses of especially important messengers, couriers and other officials who used mail), "ihdrajat" (emergency expenses for the maintenance of the administrative apparatus), "alafe" (fodder, feed for mounted animals of the horde army, and provisions, food, rations for soldiers, supplied at the request of the Mongol-Tatars), "konalga" (duty to feed Khan's messengers, officials, nobles and military personnel, and their retinue, servants and horses that stayed in the houses of the locals), "shiltikat" (not fixed, and arbitrarily established fees for the local population), "daruga" (collection, usually in-kind, for the maintenance of officials), "saveri" (mandatory gifts, offerings to Khan's governors, officials, military), "tagar" (duty to supply wheat, two ropes, one white coin, arrow, horseshoe), "iagar from cattle" (duty to give one out of every 20 heads of raised cattle to the Khan), "nuzul" (duty to support horde ambassadors with their retinue) [26, p.140-144; 27, p. 344].

The fourth category covered the personal duties of the population in favour of the Mongol-Tatar state. These included "bigar" (all kinds of duties imposed by the rulers of regions and districts on peasants, for the needs of the state: the construction of fortresses and palaces, the delivery of building materials, the construction of roads, irrigation channels, field work on the arable land of rulers and rulers, etc.) and "cherik" (conscription of military service as guardians of fortresses, transports, roads) [26, p.146, 149]. Notably, even during the Mongol-Tatar invasion, there was still a personal duty of an investment nature in favour of the Russian princes – "mostovshchina". Fees, personal and in-kind duties in favour of the Mongol-Tatar conquerors were collectively called "tatarschina".

Profitable instruments of the fiscal mechanism during the Mongol-Tatar invasion had an impact on investment development. Thus, V.M. Lytvyn claims that the Muslim tax authorities introduced Kyivan Rus to such a tax method of regulating investment processes as the establishment of settlements (so-called sloboda) with the provision of tax benefits to their population to stimulate their economic development. However, this method of fiscal regulation led to an outflow of the population from the princely lands. There is an assumption that Prince Daniel of Galicia used the example of settlements for the construction and development of his northern capital – the city of Holm [22, p. 276].

Expenditure instruments of the fiscal mechanism did not play a significant role in the investment development of Ukrainian lands during the Golden Horde, because funds were not allocated from the horde treasury for these purposes. At the same time, the weakened principalities did not have significant funds to stimulate investment, which caused its impoverishment and significantly slowed down the development of all socio-economic processes. The Princes received greater freedom in spending only when they began to collect taxes for the Khans on their own, but there were still not enough funds to activate investment processes.

After the decline of the last principality – the Galician-Volhynian state, in the middle of the 14th century, most of the Ukrainian lands were divided between neighbouring countries: Bukovina became part of the Kingdom of Hungary, and later together with the Danube lands became part of the Moldavian Principality; Galicia, Kholm region, Podlasie and Podillia became part of the Polish Kingdom; Volhynia, Kyiv, Chernihiv-Seversk, Pereyaslav lands, and later Podillia fell under the rule of the Grand Duchy of Lithuania.

Conclusions

With the birth of statehood on Ukrainian lands, the development of Kyivan Rus, the establishment of a fiscal mechanism for regulating investment processes took place, which was inextricably linked with the then budget – the princely treasury. The fiscal mechanism consisted of two main components – revenue and expenditure. The revenue component covered directly revenues to the princely treasury and revenues that were directed outside the princely treasury to carry out certain state expenditures. The income of the princely treasury included various direct and indirect taxes, court fees, military and trade revenues, etc. The income that had exclusively targeted areas and did not go to the treasury of the prince, but went to provide specific state tasks, included various duties. The expenditure component was intended not only to ensure the functioning of the state, but also to finance the personal needs of the prince and his entourage. In the days of Kyivan Rus, investment processes were regulated both through taxes and expenses. During the period of princely feuds and the Mongol-Tatar invasion, the fiscal mechanism underwent changes, because elements inherent in the fisc of the Golden Horde appeared. Therefore, new "Horde-era" taxes and duties have appeared on Ukrainian lands. During the time of the Mongol-Tatars, only taxes had an impact on investment processes, because the invaders did not consider it appropriate to finance the development of the conquered territories from their treasury.

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Методичні аспекти проведення комплексного аналізу фінансової звітності підприємства

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Анотація. Глобальні зміни в економічному середовищі, світові процеси стандартизації бухгалтерського обліку зумовлюють необхідність перегляду теоретичних основ, подальшого розвитку методологічних підходів і методичних положень формування фінансової звітності українських підприємств. Якісна економічна інформація, зібрана та опрацьована в межах облікової системи господарюючого суб'єкта за звітний період, має забезпечувати можливість прийняття зважених управлінських рішень, спрямованих на оптимізацію функціонування підприємства і його подальший розвиток. Інформація щодо фінансового стану і результатів діяльності суб'єкта господарювання представляє інтерес для широкого кола учасників господарського процесу. На основі вивчення відкритої звітної інформації її користувачі приймають важливі управлінські рішення. Саме тому питання, пов'язані з удосконаленням методики подання та використанням фінансової звітності є актуальними. У статті розглядається роль всебічного фінансового аналізу підприємства, наводяться теоретичні та практичні основи вдосконалення методології фінансової звітності підприємства. Розглянуто фінансово-господарську діяльність підприємства на прикладі товариства з обмеженою відповідальністю «ЛІЗИНГ ІНВЕСТ», здійснено необхідні розрахунки, що характеризують фінансовий стан підприємства. Аналіз фінансового стану надає можливість отримати оцінку, виявити причини та фактори досягнутого стану, підготувати та обґрунтувати прийняття управлінських рішень. Він відіграє важливу роль у забезпеченні ефективних форм господарювання, відповідає за відбір, оцінку та інтерпретацію фінансових, економічних та інших даних, що впливають на процес прийняття фінансових рішень

Ключові слова: фінансова діяльність підприємства, аналіз фінансового стану, комплексний аналіз, конкурентоспроможність, економічний потенціал, фінансова звітність

Methodical Aspects of Carrying Out Comprehensive Analysis of Financial Viability of Enterprise

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Abstract. Global changes in the economic environment, global processes of accounting standardisation necessitate a revision of the theoretical foundations, further development of methodological approaches and methodological provisions for forming financial statements of Ukrainian enterprises. High-quality economic information collected and processed within the accounting system of an economic entity for the reporting period should provide an opportunity to make informed management decisions aimed at optimising the operation of the enterprise and its further development. Information about the financial condition and performance of the business entity is of interest to a wide range of participants in the economic process. Based on the study of open reporting information, its users make important management decisions. This explains why the issues related to improving the methodology for submitting and using financial statements are relevant. The study examines the role of comprehensive financial analysis of the enterprise, provides theoretical and practical foundations for improving the methodology of financial reporting of the enterprise. The financial and economic activity of the enterprise is considered on the example of the LEASING INVEST LLC, the necessary calculations describing the financial condition of the enterprise are made. The analysis of the financial position enables an assessment to be made, the causes and factors of the achieved position to be identified, and management decisions to be prepared and substantiated. Analysis plays an important role in ensuring efficient forms of management, and is responsible for selecting, evaluating, and interpreting financial, economic, and other data that influence the financial decision-making process

Keywords: financial activity of the enterprise, analysis of the financial condition, comprehensive analysis, competitiveness, economic potential, financial statement

Introduction

Global changes in the economic environment, global processes of accounting standardisation necessitate a revision of the theoretical foundations, further development of methodological approaches and methodological provisions for forming financial statements of Ukrainian enterprises. It is necessary to improve production management, attract investors, and create competitive products to ensure the successful operation of the enterprise. These measures cannot be implemented without a proper information source, which is necessary for making informed management decisions. This source is the financial statements, which disclose reliable, complete, relevant, up-to-date, transparent information about the current state and results of the company activities.

In modern conditions of transition to innovative economic development, it becomes necessary for each enterprise to use the methodology of the comprehensive analysis of financial statements to identify business problems and find their solution in a timely manner. This method is necessary to determine the degree of financial stability of an enterprise, assess its business activity, efficiency and investment attractiveness.

The studies by notable Ukrainian economists are devoted to the investigation of theoretical aspects of the analysis of financial statements of enterprises:

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A.Ya. Bazilinska, I.O. Belebekha, M.T. Belukha, A.M. Herasimovych, S.F. Golov, A.G. Zagorodniy, M.Ya. Demyanenko, T.G. Kireitseva, V.G. Linnik, V.O. Metz, A.V. Rastyapin, R.V. Skasyuk, V.V. Sopka, L.K. Suk, T.I. Teslenko, N.M. Tkachenko, Yu.S.Tsal-Tsalko, M.G. Chumachenko O.V. Chumak, O.E. Shyryagina, V.Ya. Plakeienko, O.V. Chumak et al. The studies by foreign economists also addressed various issues related to the analysis, assessment, and management of the company's financial position, including methodological and practical problems of forming financial statements. The above-mentioned issues are covered by the following foreign researchers: L.A. Bernstein, M.F. Van Breda, T. Warfield, J. Weigandt, D. Kieso M.I. Cooter, M.R. Matthews, V.F. Palia, B.Pounder, M.H.B. Pereri, Ya.V. Sokolov, G.V. Savitskaya, and A.D. Sheremet.

All the above-mentioned researchers have achieved significant results in the process of studying the problems of preparing and submitting financial statements, solving them, and making proposals for improvement. It is important that the experience of foreign researchers is quite significant for Ukrainian scientists, but before using it in practice, it is worth paying attention to the main aspects of the modern development of Ukraine. Despite a significant amount of research in this area, there are still questions that contain unresolved issues. First of all, this concerns ensuring transparent accounting of financial results and the accuracy of the analysis of indicators, which indicates a reliable assessment of the company activities.

Scientific and practical developments require the systematisation of methods for analysing financial statements, especially for assessing the financial condition, to identify the strengths and weaknesses distinguished during practical application.

The importance of information in the modern world is steadily growing, so how financial statements are prepared and evaluated, as the main information source of an enterprise, depends on its financial condition and the vector of managerial decision-making in the future. That is why the issue of the comprehensive analysis of financial statements requires constant attention, study, and improvement.

The purpose of the study is a theoretical substantiation of the economic essence and improvement of the system of accounting and analysis of financial results, their role, significance, and relationship with other economic indicators in the system of enterprise management; development and provision of practical recommendations for improving accounting and analytical support; coverage of theoretical provisions for improving financial reporting and development of practical recommendations aimed at improving the process of forming and analysing its indicators with subsequent use in management.

Materials and Methods

The subject of the research is a set of theoretical, methodological, and practical issues related to the comprehensive analysis of financial statements of enterprises. The study was carried out based on data from the limited liability company LEASING INVEST, whose main activity is wholesale trade in wood, construction materials, sanitary equipment, production of hollow glass products, forming and processing of flat glass. The theoretical and methodological basis of the study are sources of educational, monographic and periodical literature on the chosen topic, research papers by Ukrainian and foreign researchers-economists, professional periodicals, materials of scientific and practical conferences, official statistics, information agencies, reports of analytical companies, and Ukrainian, foreign, and international legislative and other regulatory documents devoted to the organisation of accounting, analysis, and control of financial statements, financial statements of LEASING INVEST LLC. An assessment of the financial condition of the company under consideration was carried out.

The provisions and findings disclosed in the study are based on a dialectical approach to the investigation of phenomena and processes of the surrounding socio-economic reality in general, including those that arise in the course of economic activity of the LEASING INVEST LLC in particular. The tasks set in this paper are solved using a complex of general scientific and specific research methods. The systematic approach allowed identifying and properly considering the essential accounting and analytical aspects of financial statements both when disclosing its theoretical foundations, and when developing a number of methodological and practical recommendations for improving approaches to the presentation and analytical processing of reporting information, taking into account the needs of users. Some terminological contradictions have been established and resolved using the method of hermeneutics. Historical and logical methods were used in the study of the conceptual foundations and methods of preparing financial reporting forms, approaches to evaluating accounting objects. The relationship and mutual consistency of financial reporting indicators were established using the balance sheet generalisation. Analysis, synthesis, deduction, and induction were used to perform individual tasks.

A set of methods of economic research was used to identify methodological aspects of the indicators and their reflection in the financial statements: abstract and logical (for theoretical generalisations, formative conclusions, and suggestions); historical (in the study of the emergence, establishment, and development of the economic category of "financial statements" and "financial results"); method of average and relative values (to determine the level of effectiveness of the considered processes), vertical analysis and horizontal analysis, graphical method, comparative analysis, modelling. The use of vertical and horizontal analysis allows investigating balance Indicators; comparison – used during reconciliation of documentation, for its compliance with established standards; modelling – to perform a control function and represent possible developments. Therefore, each of these methods allows considering the subject matter in more detail. An MS Excel spreadsheet was used to process information and present the results of the study.

The object of research is the financial statements of the LEASING INVEST LLC as a source of information about the financial condition, financial results of activities, and cash flows of the enterprise. The principles of preparation, form, and composition of financial statements, the requirements for recognition and disclosure of its elements are defined by the National Accounting Standard No. 1 "General requirements for financial statements", approved by the order of the Ministry of Finance of Ukraine dated 07.02.2013 No. 73 1 according to Paragraph 1 of NP(C)BU 1, the Financial Statements of the LEASING INVEST LLC consist of: balance sheet (Statement of Financial Position), statement of financial results (Statement of Comprehensive Income), statement of cash flow, statement of equity, and notes to the financial statements. Form No. 5 "Notes to annual financial statements", approved by Resolution No. 302 of the Ministry of Finance of Ukraine dated November 29, 2000, as amended.

Based on the set goal, the study revealed the economic essence of the financial statements of the enterprise and its significance in management; presented the structure and composition of the reporting of enterprises; analysed legislative and regulatory support and theoretical sources; analysed the financial condition of the enterprise for three years, namely: the dynamics and structure of assets, the dynamics and structure of the sources forming the LEASING INVEST LLC; identified areas of improvement and provided suggestions for the presentation of financial statements and use in management.

Results and Discussion

Financial condition is an important component for the company activities in the external environment. It characterises the potential of the enterprise, the ability to compete in a healthy way, so the disclosure of information to external and internal consumers is important for increasing the customer base, including suppliers and contractors. Financial analysis allows determining the state of the company property, the need for additional sources, the ability to increase capital, predict future business results, the rational use of funds raised, and the degree of risk associated with business activities. To calculate financial analysis indicators, it is necessary to consider the data of the annual financial statements of the enterprise, namely: balance sheet, statement of financial results, statement of cash flows, statement of equity, statistical reporting data [1]. In addition, an important factor is the property status of the enterprise, which arises in the course of economic activity. For this purpose, it is necessary to analyse the financial stability, solvency, and liquidity of the enterprise, assess the strengths and weaknesses of the enterprise, create development strategies for the long-term future.

To understand how effectively the company operates, an analysis of its financial condition for 2017-2019 was carried out (Table 1).

Table 1. Analysis of the dynamics and structure of assets of the LEASING INVEST LLC

Indicators	2017 (thousand UAH)	2018 (thousand UAH)	2019 (thousand UAH)	Deviation 2018/2017		Deviation 2019/2018	
				Absolute deviation, thous. UAH	Relative deviation, %	Absolute deviation, thous. UAH	Relative deviation, %
Company assets	142,486	141,547	141,079	-939	-0.66	-468	-0.33
Non-current assets	140,054	139,791	139,495	-263	-0.19	-296	-0.21
Current assets	1,244	917	756	-327	-26.29	-161	-17.56

Table 1, Continued

Indicators	2017 (thousand UAH)	2018 (thousand UAH)	2019 (thousand UAH)	Deviation 2018/2017		Deviation 2019/2018	
				Absolute deviation, thous. UAH	Relative deviation, %	Absolute deviation, thous. UAH	Relative deviation, %
Cash resources	388	39	28	-349	-89.95	-11	-28.21
Other current assets	–	–	–	–	–	–	–

Source: compiled by the authors based on [1]

Based on the results of data analysis in Table 1 a conclusion can be drawn about the overall decrease in the company assets during the analysed period. The value of assets of LEASING INVEST LLC decreases every year: in 2018 by UAH 939 thousand, or by 0.66%, and in 2019 – by UAH 468 thousand, or by 0.33%. The generation of assets depends, first of all, on the operating activities of the enterprise, ensuring that the volume and structure of assets correspond to the volume and structure of production and sales of products. Therefore, such a negative trend indicates a reduction in production and a decrease in sales of products. The change in the value of non-current assets of the enterprise is as follows: a decrease in 2017-2018 by UAH 263 thousand (-0.19%) and a decrease by UAH 296 thousand (-0.21%) in 2018-2019. The dynamics of the value of non-current assets, in general, has a negative trend, which indicates the obsolescence of fixed assets and a decrease in their value [2]. The value of current assets of the company in 2017-2019 changed downwards. Consequently, the overall decrease in the company assets for the period under review was conditioned by a decrease in current assets. The volume of accounts receivable for the considered period remains unchanged. A significant decrease in cash resources at the enterprise is observed in 2017-2018 by UAH 349 thousand, or by 89.35%, in 2018-2019 there was also a decrease in cash by UAH 11 thousand (-28.21%). This indicates the need to increase them in the next period to prevent the impact of possible negative consequences on the operation of the enterprise.

To better see the picture of the financial condition of the enterprise, it is necessary to investigate the sources of the enterprise (Table 2).

Table 2. Analysis of the composition, structure, and dynamics of the company assets and sources of its formation

Indicators	2017 (thousand UAH)	2018 (thousand UAH)	2019 (thousand UAH)	Deviation 2018/2017		Deviation 2019/2018	
				Absolute deviation, thous. UAH	Relative deviation, %	Absolute deviation, thous. UAH	Relative deviation, %
Gross profit	544	231	0	-313	-57.54	-231	-100.00
Other operating profit	859	583	500	-276	-32.13	-83	-14.24
Net income from sales of services rendered	929	232	0	-697	-75.03	-232	-100.00
Cost of sales	-385	-1	0	384	-99.74	1	-100.00
Net financial result	-96	-319	-503	-223	232.29	-184	57.68
Fund intensity	4.92	19.47	-	14.55	295.48	-	-
Fund return	0.20	0.05	0	-0.15	-74.71	-0.05	-100.00

Source: compiled by the authors based on [1]

Table 2 shows that the gross profit of the enterprise decreases every year, which means that the enterprise does not develop and this can be influenced by various factors, such as: reducing the provision of services, not attracting new customers, increasing the cost of services. Having analysed the activities of the LEASING INVEST LLC, not very positive conclusions can be drawn. This is conditioned by the fact that every year accounts receivable remain, and gross profit and cash resources decrease [3]. The company needs to immediately find new ways to increase its profit and reduce the production costs, because one of the main goals of each company is to increase profits and minimise costs.

In the practice of comprehensive financial analysis, the general way to achieve a specific goal is to develop a rating system, when each goal value corresponds to a unique rank, the sum of ratings obtained by a company based on the analysis is the basis for unambiguous determination of its financial and economic condition, development of trends in its changes, and prospects for further actions [4]. Thus, in the overall assessment of the financial condition based on mathematical modelling, a separate assessment of certain aspects of the company's financial and economic activities is organically formed [5].

To build such an assessment of the financial condition, the study used two systems of the hierarchy of indicators: general and with complex assessments of individual functional components of the financial condition of the enterprise (Fig. 1). The most important stage in determining an integral (integrated) assessment of an enterprise for making managerial decisions is the establishment of a system of analytical indicators, which should provide objectivity, content, depth, and soundness of information that characterises the considered socio-economic phenomena and processes [6].

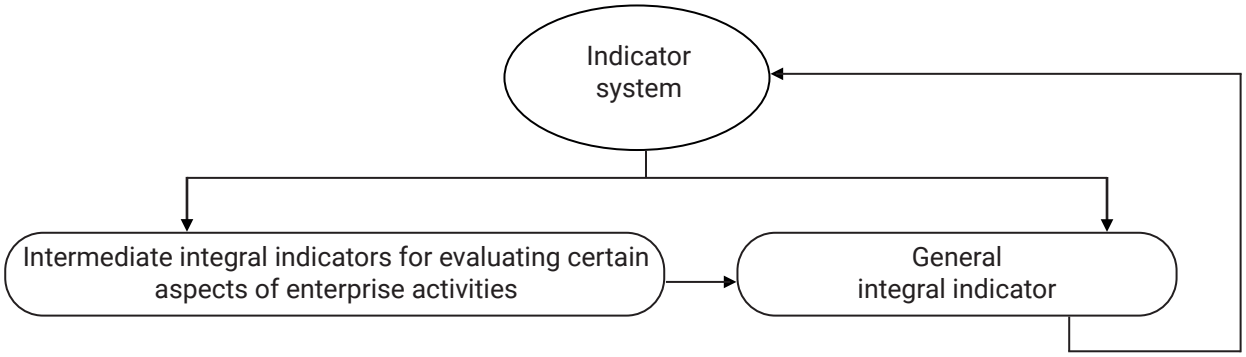

Figure 1. Hierarchy scheme of the system of indicators for determining the integral assessment of the financial condition of the enterprise

Source: compiled by the authors based on [7]

One of the main stages of the comprehensive analysis procedure is the development and construction of a model for processing the input information base. The model organically combines mathematical, statistical, and analytical research methods [8]. In the research of modern researchers-economists, a model is proposed that indicates only four degrees of the comprehensive analysis of financial statements [9]. It is proposed to improve the existing comprehensive analysis of financial statements, which provides for a combination of financial analysis and accounting of financial statements for a comprehensive assessment of the complete and reliable volume of relevant information and the introduction of additional fifth and sixth stages, which is a logical continuation of the previously proposed stages of conducting a comprehensive analysis of financial statements [10]. According to the authors, the algorithm – stages of conducting and processing the input information base in a comprehensive analysis of the financial statements of enterprises of various forms of ownership and various forms of management should be the same as shown in Figure 2.

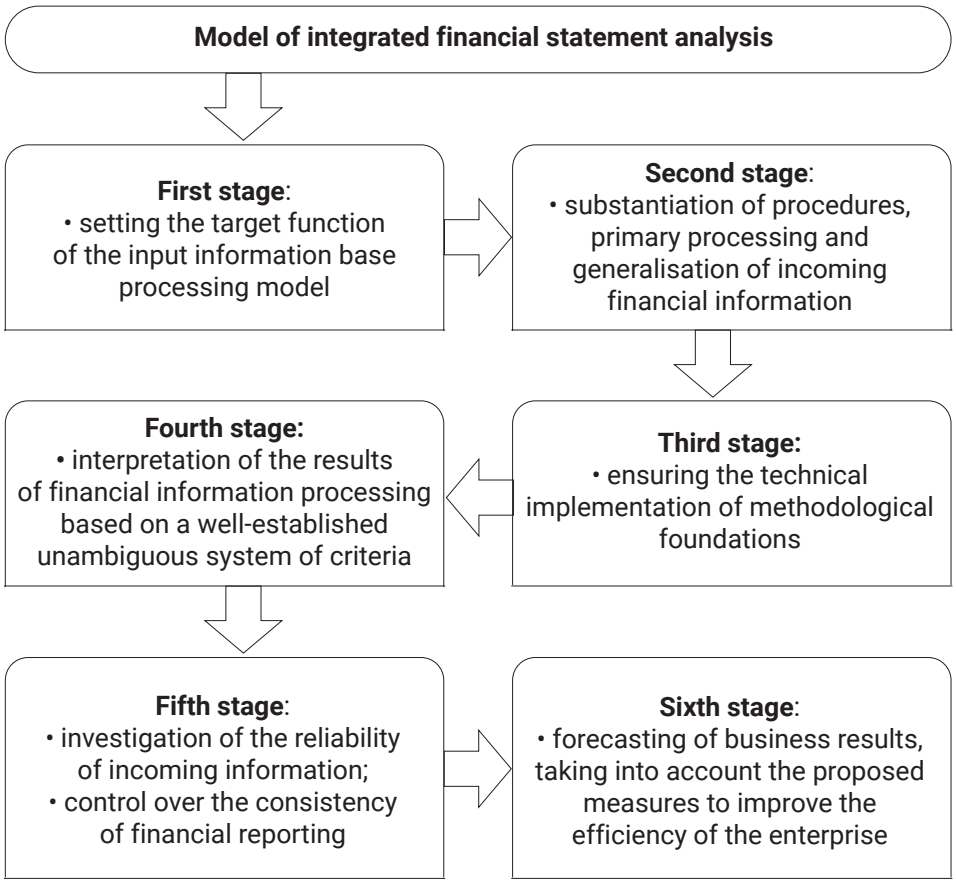

Figure 2. Model of integrated financial statement analysis
Source: compiled by the authors based on [11]

The first stage of the customer's comprehensive analysis is to provide a statement of the purpose of the information processing operation. The statement of objective effectiveness should contain a clear understanding of the purpose of a thorough examination in certain circumstances and the specific details of this case [12].

The second stage involves substantiation of procedures and initial processing, synthesis and consolidation of incoming financial information. The practical implementation of such primary information processing should meet the criteria for design efficiency and obtaining readiness for further mathematical processing of financial information [13].

The third stage is to ensure the technical application of the methodological principles defined at the first stage of the model, based on the substantiation at the second stage of all areas of analysis and research subjects. The choice of the necessary method (a combination of mathematical, statistical and/or analytical models) the combination of the results of primary processing of input information in certain areas of research, determining the structure and procedure for forming the target indicator is presented as the initial information of a comprehensive financial analysis of companies [14].

At the fourth stage, the interpretation of the results of financial information processing should be based on a stable, unambiguous system of criteria that correspond to the areas of the comprehensive analysis of enterprises and the requests of research clients. Thus, the generation of conclusions about the object of research based on calculations not only allows clients to comprehensively get answers to their questions [15].

The fifth stage of a comprehensive analysis of companies' financial statements allows for a more thorough study of the reliability of the initial information for a comprehensive assessment of the financial condition and provide internal and external control over the adequacy of financial statements.

The sixth stage is the process of creating scenarios for further trends in the financial and economic activities of companies, the essence of this stage is forecasting the results of the object under study, taking into account the proposed measures to improve the efficiency of enterprises.

Conclusions

Based on the results of the analysis of the financial condition of the LEASING INVEST LLC, the following conclusions can be drawn: it is the analytical approach to managing the finances of the enterprise, in particular its assets and liabilities, that will allow making informed management decisions, determining the effectiveness of their use and impact on financial results. The volume and structure of the company's assets indicate a significant decrease in them. The share of accounts receivable in the structure of current assets is very high, so the company needs to improve the process of managing it. The company needs to immediately find new ways to increase its profit and reduce the production costs, because one of the main goals of each enterprise is to increase profits and minimise costs.

The improved model of comprehensive financial reporting analysis has been expanded and supplemented, adjustments improve the methodology of comprehensive analysis: the implementation of the fifth stage provides internal and external control over compliance with financial reporting indicators, and the sixth stage provides predictability of planned research activities to improve business efficiency.

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Напрями підвищення ефективності управління підприємством готельного господарства України шляхом реалізації комунікаційної політики

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Анотація. Стаття присвячена вивченню сутності комунікаційної політики підприємств готельного господарства, особливостей використання реклами та напрямів підвищення її ефективності в сучасних умовах. Метою дослідження є розгляд напрямів підвищення ефективності управління підприємством готельного господарства в Україні. Методологія дослідження базується на таких загальнонаукових методів дослідження як: аналіз і синтез, систематизація та узагальнення. Визначено основні цілі управління підприємством через комунікаційну політику, які включають в себе: удосконалення споживчих відносин між споживачами під час процесу обміну інформацією; забезпечення ефективного обміну між суб'єктами й об'єктами управління; створення інформаційних потоків для обміну інформацією між окремими працівниками, групами її координації їх задач і дії; регулювання та раціоналізація інформаційних потоків. У статті обґрунтовано, що для управління підприємством комунікаційні аспекти функціонування підприємств готельного господарства недостатньо адаптовані до даної сфери діяльності. Було розглянуто поняття «комунікаційна політика», а також структуру рекламно-комунікаційних засобів просування готельних послуг. У статті представлено цілі комунікаційної політики ефективного управління готельним господарством України, а також проаналізовано електронні сторінки низки підприємств готельного господарства України. Це дослідження може бути використане з метою вивчення та удосконалення системи управління у сфері готельного господарства. Результати дослідження можуть бути використані науковцями для проведення подальших досліджень, а також менеджерами, що працюють у сфері готельного бізнесу з метою удосконалення робочого процесу та підвищення рівня власних знань

Ключові слова: міжнародні туристичні виставки, готельний менеджмент, рекламно-комунікаційні засоби, ринок туристичних послуг, реалізація маркетингових стратегій

Areas for Improvement of the Hotel Management Efficiency in Ukraine through the Implementation of Communication Policy

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Abstract. The study is devoted to the investigation of the communication policy of hotel industry enterprises, the features of using advertising, and ways to improve its effectiveness in modern conditions. The purpose of the study is to consider the areas of improving the efficiency of hotel management in Ukraine. The study is based on the following general scientific methods: analysis and synthesis, systematisation, and generalisation. The main goals of enterprise management through communication policy are defined, which include: improving consumer relations during the exchange of information; ensuring effective exchange between subjects and objects of management; creating information flows for information exchange between individual employees, groups of coordination of their tasks and actions; regulating and rationalising information flows. The paper proves that for enterprise management, the communication aspects of the operation of hotel enterprises are not sufficiently adapted to this field of activity. The concept of "communication policy" was considered, including the structure of advertising and communication tools for promoting hotel services. The study presents the goals of the communication policy of effective management of the hotel industry in Ukraine and analyses the electronic pages of a number of hotel enterprises in Ukraine. This paper can be used to investigate and improve the management system in the hotel industry. The findings can be used by researchers to conduct further study, and also by managers working in the hotel industry to improve the workflow and the level of their own knowledge

Keywords: international tourism exhibitions, hotel management, advertising and communication eools, travel services market, implementation of marketing strategies

Introduction

Nowadays, the hotel industry in Ukraine is developing quite intensively and dynamically. At the same time, the transformation processes that are taking place in the national economy of Ukraine require the development of qualitatively new approaches to the establishment of effective management mechanisms in the hotel industry [1]. Therefore, for effective management of the hotel industry at all stages of its operation, it is important to find scientifically effective and innovative approaches to the establishment of communication policies of hotel enterprises and improve the means of its implementation. This is also confirmed by the fact that in recent years, simultaneously with the growing role of marketing in the activities of hotel enterprises, the role of marketing communications has also increased [2]. These enterprises constantly promote their services to consumers and customers, trying to fulfil several goals: to inform promising consumers about their services and the conditions for their sale; to convince consumers to give preference to these enterprises and the services that they provide; to force the consumer to act – consumer behaviour is directed at what the hotel services market offers at the moment. The presented goals are achieved through advertising, choosing a good hotel

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name, successful design, distributing free coupons, press releases, and other communication activities. The above data indicate the feasibility of setting up effective management and marketing communications system [3].

Ukraine is a potentially strong competitor in the tourist services market, as it has rich recreational resources that not all countries of the world can boast of, but with the help of other opportunities, it attracts more and more tourists every year. A favourable climate, access to two seas at once, the presence of mountains and a large area of clean, unspoilt nature are the main priorities of the country. The main problem is the inability to provide a sufficient level of financing for tourist infrastructure and superstructures. This issue is extremely relevant due to the reduction of natural resources, the revenues from the sale of which form the budget of a developing country. Thus, the issue of studying the areas of improving the efficiency of management of the hotel industry enterprise in Ukraine through the implementation of communication policy is particularly relevant [4].

The analysis of research papers on this issue has shown that studies on the establishment of marketing policy, which was conducted earlier, did not sufficiently consider the industry specifics of the hotel industry, were not always systematic, did not sufficiently reveal the features of marketing communications management and approaches to the establishment of communication policy, the effectiveness of its means, in particular, advertising, etc. This sets the task of conducting further research in this line, in particular, to improve the effectiveness of advertising services of hotel enterprises in Ukraine. This determined the choice of the research topic, its purpose and task namely: to determine the essence of the communication policy of hotel enterprises, the specifics of using advertising as a means of promoting hotel services and establishing communications between their producers and consumers, to suggest ways to improve its efficiency in modern business conditions [5].

The purpose of the study is to review the areas for improving the efficiency of hotel management in Ukraine, and an analysis of the ways of improving efficiency through the implementation of communication policy.

Literature Review

The theoretical and methodological basis of the study is the fundamental provisions of hotel management through marketing communications and management, the papers by Ukrainian and foreign researchers. Thus, general issues were considered by: H.Y. Roglev [6], O.O. Gudzovata and S.I. Baylik, at the same time the establishment of marketing policy and the study of problems, occupy a prominent place in the papers by J. Burnett and S. Moriarty [7], V.A. Aleksunin [8], L.V. Balabanova, O.V. Krutushkina [9], M.P. Malskaya, V.V. Khudo [10], B. Mattel [11], R.B. Nozdreva [12], E. Romat [13], N. Ponomareva, A.M. Ponomarev [14], T. Prymak [15], and marketing practitioners – F. Kotler, K.L. Keller [16].

Online guest reviews are an important argument when customers choose a hotel. In this regard, foreign researchers [5] conducted a study aimed at investigating how the hotel management's responses to comments posted on online review sites, such as TripAdvisor, affect the perception and choice of customers. This pilot study uses a semi-experimental approach to investigate how a hotel's perceived image, attitude, and hypothetical guest's intention to stay there are affected by three different hotel responses to negative online reviews, including: “no response”, “negative response”, and “answers to the renewal of service”. The results showed that providing a response to the renewal of service improved the hotel's image, attitude, and hypothetical intention to stay there. By comparison, respondents' image and attitude to the hotel were rated the lowest for “no response”, which indicates that any response from the hotel, even a negative one, would be better than not taking any action. This study offers valuable results and developed strategies for researchers and hotel management in terms of addressing negative online reviews [5].

With the development of the Internet, online reviews provide a new perspective for evaluating and finding alternatives. From the standpoint of choosing a hotel as a long-term partner, the comprehensive operation of hotels in the long-term dimension becomes a vital factor. Considering the above factors, the analysed study by foreign researchers [17] offers a multi-stage decision-making method with several attributes: the method is based on online reviews of hotel selection. First, the paper examines hotels in several stages. Second, the paper establishes an aspiration satisfaction function that considers various preferences and aspirations to make the decision-making process more flexible. Third, the paper provides three different development rates for establishing multi-step time aspirations to offer more opportunities. Finally, the paper illustrates efficiency using a practical example and provides management recommendations for both decision-makers and alternatives based on modelling results [17].

In one of the studies reviewed, the author evaluated the social media behaviour of luxury hospitality

establishments and provided suggestions for improving the effectiveness of organic messages [18]. All five-star tourist establishments operating in Turkey were included in the study, and publicly available data from publications on the Facebook accounts of 441 establishments (out of a total of 612) were examined during the peak tourist season for one month. Data on 2012 Facebook posts were obtained manually and filtered to 1,847 posts. The data collected by the author was then encoded using a content analysis form and analysed using ordinal regression. The results highlighted the positive effects of interactive content and engaging content, and the importance of content type for achieving greater interaction between netizens and the institution. The location of the establishment and the category (hotel, resort village, thermal hotel) also turned out to be important factors influencing the interaction between them [18].

Methodology

Effective solution of the problems facing the solution of this problem is carried out in the study using such general scientific research methods as: analysis and synthesis, systematisation, generalisation, and scientific abstraction. In particular, the methods of synthesis and analysis were used to consider the concept of "communication policy", and to analyse the structure of advertising and communication tools for promoting hotel services. The method of systematisation was used to clarify the definitions, namely: marketing policy of hotel enterprises, product policy, sales policy, and communication policy. The method used is the process of combining various knowledge about objects into one scientific system, which establishes their unity and is based on the study of the essential connections that unite these objects. The generalisation was used to present the goals of the communication policy of effective hotel management in Ukraine.

During the analysis of the role of marketing policy in the activities of hotels of various categories, the electronic pages of a number of hotel enterprises in different regions of Ukraine were analysed: Kyiv, Dnipropetrovsk, Odesa, and Lviv. The main criteria for evaluating the quality of web-sites were informative content, availability of a photo gallery, customer reviews about the hotel, relevance and truthfulness of the posted information. Based on the results of the research, pessimistic conclusions were drawn, which were caused by general shortcomings that follow when using the Internet page as a communication channel for the establishment and implementation of communication policies by these enterprises. The theoretical and methodological basis of the study on this problem is the fundamental provisions of hotel management through marketing communications and management, the papers by Ukrainian and foreign researchers. The characteristics and interpretation of the term "communication policy" by modern researchers were presented in the process of analysing the literature. According to the results of the analysis, ambiguity in the interpretation of other concepts that characterise the communication aspects of the operation of hotel enterprises, their insufficient adaptation to this field of activity, was revealed.

The use of tabular and graphical techniques allowed providing a visual interpretation of the research results. Generalisation of the new scientific results obtained, and the formulation of conclusions through in-depth knowledge of the growing role and methods of implementing marketing policy to promote hotel services in the market was carried out using the method of scientific abstraction.

Results and Discussion

According to the analysis of a number of literature sources, the communication policy of hotel enterprises is defined as an effective tool for the manufacturer and consumer of hotel services, because when forming the marketing policy of a hotel enterprise, it is important not only to create a competitive product or service, setting an appropriate price for it that meets the needs of the market, but also to convey detailed and complete information about the hotel product to consumers, its consumer properties and values to the enduser in a timely and fast manner [19]. This is exactly what the communication policy of the hotel industry enterprise should contribute to. Nowadays, there are a significant number of definitions in the scientific literature that reveal the content of the term "communication policy" to one degree or another (Table 1).

Table 1. Characteristics and interpretation of the term "communication policy" by modern researchers

No.	Author	Characteristic
1	F. Kotler [16]	A communication policy is a system that ensures the transfer of information about a product or its organisation itself to potential and existing consumers to promote this product to the sales market
2	R.B. Nozdreva [12]	Communication policy is a certain set of measures for establishing, maintaining and developing connections based on the use of psychological models of communication skills to increase sales of goods and services
3	V.A. Aleksunin [8]	Communication policy is the use of such marketing tools that can be used by carriers of information sent to the market
4	E.V. Romat [13]	Communication policy is a communication mix, namely: the relationship between four elements of marketing communications (advertising, public relations, sales promotion, and direct marketing)
5	Y. Wells, J. Burnett [7]	Communication policy is a promotion structure, namely: a combination of personal sales, advertising, trade promotion, and public relations to create a consistent news structure

In addition, according to the results of the analysis of scientific views, ambiguity was revealed in the interpretation of other concepts that characterise the communication aspects of the operation of hotel enterprises, their insufficient adaptation to this field of activity. This made it necessary to clarify the definitions, namely:

– marketing policy of hotel enterprises is a system of measures for the establishment of communication policy, branding policy, which considers changes occurring in the internal and external environment. It is also aimed at improving the efficiency and management of the hotel industry enterprise, increasing the competitiveness of loyalty management and creating a positive image among consumers;

– product policy of hotel enterprises is a set of its consumer characteristics, competitive advantages of hotel services, the process of forming a hotel product, and the ability of the product to meet the needs of consumers;

– sales policy of hotel enterprises is a complex system of movement of a product or service on the way from the manufacturer (hotel) to the consumer through intermediaries or without their participation, while it is necessary to minimise such types of costs as: financial, time, and human (personnel costs);

– communication policy in the hotel industry is a process that is purposeful, economically justified in transmitting information about a product (service) and its value to the main consumer through channels to form a desire to purchase a certain product or service [9].

Thus, summing up the preliminary results, it is worth noting that the communication policy of the hotel industry enterprise is a component and one of the measures of its marketing policy. In addition, the effectiveness of a communication policy largely depends on the means of its implementation, in particular on the means of communication, among which advertising plays an important role. It is worth noting that the structure of the advertising market for the hotel industry, due to its low profitability, a narrow segment of consumers has a slightly modified system – a significant part of the advertising budget of hotel enterprises belongs to print media, and the global role of online advertising in all its possible types.

Advertising of hotel enterprises is a paid, purposeful, and non-personal message that is carried out through mass media and other types of communication that promotes the services and products provided by the hotel enterprise [15]. Advertising tools are necessary to promote hotel services by the brands of accommodation facilities that provide them. Competent and effective advertising of hotel enterprises can support its good reputation, promote sales of hotel services, and make it known to a wide range of consumers. The main role of advertising in the process of promoting the service is to simultaneously inform about the placement tool, restaurant establishment and its services, the main purpose of which is to convince potential consumers to choose this placement tool and the services that it offers, and to confirm the confidence of consumers who already use the services of this placement tool in their choice.

Analysis of the practical activities of hotel enterprises in Ukraine regarding the effectiveness of their advertising activities, suggests that, sometimes, errors

in setting the goals of marketing communications, determining the target audience, positioning the hotel product, determining the volume of the advertising budget, strategy and tactics of creating an advertising message, and the lack of a single unified system for monitoring and evaluating the effectiveness of an advertising campaign, can carry certain risks associated with significant financial losses.

Analysing the structure of advertising and communication tools for promoting hotel services by enterprises of the hotel industry of Ukraine, it is worth paying attention to a significant drop in almost all advertising volumes that were used earlier to promote a hotel product to consumers of hotel services, in particular, there is a tendency to reduce advertising on regional television, on transport, significantly reduced the number of printed advertising, with the help of which the hotel product was promoted among consumers [14]. At the same time, despite the significant development of information and computer technologies, it is advisable for hotel enterprises to pay more attention to the issues of advertising on the Internet in all its manifestations, which will increase the contact audience and expand the sales channels of the hotel product among consumers of hotel services. Figure 1 graphically presents the structure of advertising and communication tools for promoting various services of Ukrainian hotel enterprises on the market as of 2017.

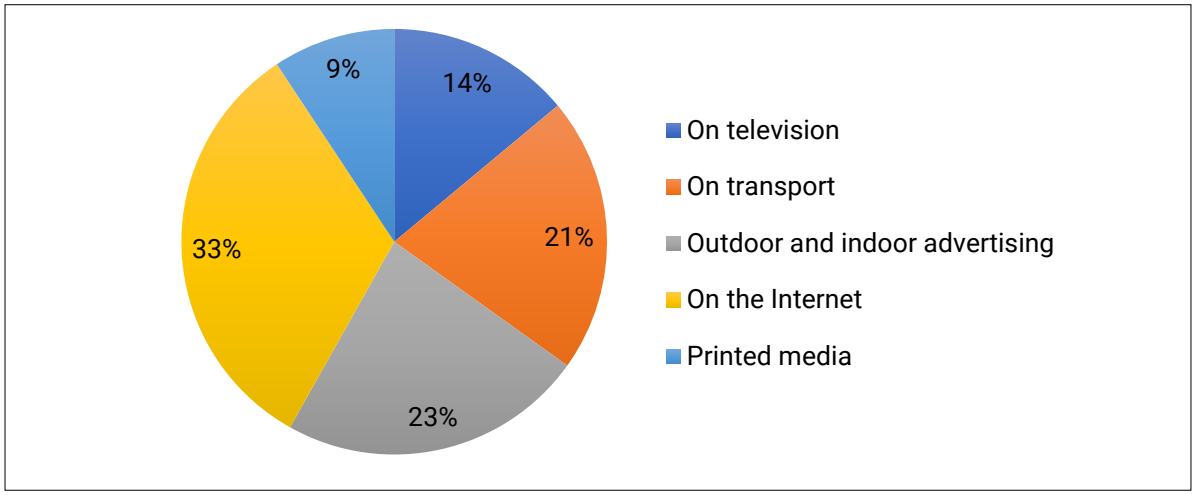

Figure 1. Structure of advertising and communication tools for promoting hotel services of Ukrainian hotel enterprises on the market as of 2017, %

Source: compiled by the authors based on [2]

Nowadays, the promotion of a hotel product through television channels is the most unprofitable means of marketing communication, because, considering the cost of the service, namely from UAH 3,500 for broadcasting a 15-minute video about a certain hotel enterprise, this type of promotion of hotel services can only be used by chain hotels, which are located not only on the territory of Ukraine, but also abroad. In this case, it is due to this type of advertising that it is possible to convey to the consumer of hotel services about accommodation facilities that are located on the territory of other countries, and will be appropriate for travelling tourists. But still, the expediency of this type of advertising is not always effective, since it covers a much smaller number of consumers than advertising hotel services on the Internet. And thus does not restrict the receipt of information by the consumer of hotel services, according to a certain location at the location.

In recent years, the promotion of hotel services has been carried out through the use of internet communications [11]. Most travellers on tourist or business routes use the Internet search and use online booking services. It is for more than 49% of tourists that the Internet is the primary source for finding places to book a hotel and search for recreation. Nowadays, the hotel industry's own electronic page is becoming an increasingly effective communication channel for distributing its services [6]. This service is necessary precisely to provide consumers with the opportunity to choose a hotel product, evaluate its advantages and competitors among all accommodation facilities. It is the hotel's website and its Internet page that is a brandbook, a presentation of services and a product that offers accommodation options and acts as a way of communication between the guest and the accommodation facility. If there are no reviews on the website or any other

information about the location and methods of accommodation, guests do not have confidence in the hotel.

At the same time, after analysing the electronic pages of a number of hotel enterprises in Ukraine, the study came to somewhat pessimistic conclusions that characterise the general shortcomings that manifest themselves when using the Internet page as a communication channel for the establishment and implementation of communication policy by these enterprises:

– information on sites is not updated quickly enough, and sometimes it is irrelevant or outdated;

– information about the hotel product is not always provided in foreign languages, which creates numerous problems when communicating with foreign tourists;

– poorquality photos are presented or there is no photo gallery in general about the hotel and services, which does not allow travellers to get acquainted with the hotel in advance without visiting it;

– false or outdated information about the availability of free additional services and the pricing policy for room accommodation;

– electronic pages are devoid of real reviews about the hotel, are subject to strict censorship, as a result of which all negative comments are removed by the site administrator, which also does not provide truthful information about the hotel's work;

– lack of an online booking system, which is more convenient for using the hotel product by consumers travelling or on a business trip.

The provided characteristics are not typical for accommodation facilities that have the category "***" and "****" stars. However, there are also certain disadvantages here, in particular, quite often there is no complete information about the service provided by the hotel and which would help tourists quickly and conveniently get acquainted with the services of hotel farms in different points of consumer deployment [10]. Figure 2 shows the goals of the communication policy of effective hotel management in Ukraine.

Summing up the research, it should be noted that the communication policy of hotel enterprises in Ukraine plays an important role in promoting hotel services in the market and in implementing marketing policy in general.

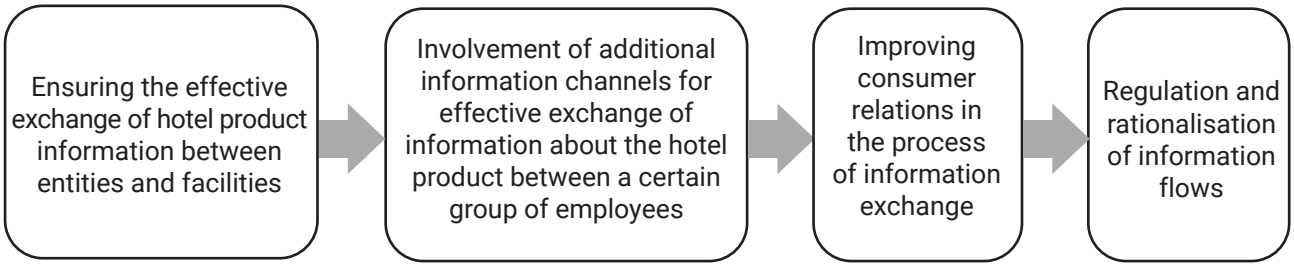

Figure 2. Objectives of the communication policy of effective hotel management in Ukraine

Conclusions

An important role in the implementation of the communication policy of hotel enterprises is played by such a tool as advertising. Notably, the communication policy of Ukrainian hotels plays an important role in promoting hotel services in the market, and in implementing marketing policy in general. At the same time, considering the expediency and urgent need to increase the level of awareness of consumers of hotel services, the development of ways of improving the effectiveness of their advertising now requires considerable attention from the management of hotel enterprises. It is advisable to understand the need to develop an innovative approach to the establishment of a systematic and integrated, economically sound way of conducting marketing policy for effective management of the hotel industry enterprise. Communication policy should be developed considering the seasonality and specifics of providing hotel services. This will be the subject of further study.

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Вплив міжрегіональної економічної диференціації на економічну безпеку регіонів України

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Анотація. Міжрегіональна економічна диференціація властива більшості країн світу. З одного боку економічна диференціація є природнім явищем, з другого показує неефективність бюджетної політики держави. Однак, для формування ефективних механізмів зниження міжрегіональної економічної диференціації першочерговою задачею є об'єктивне її оцінювання. Мета статті полягає у здійсненні аналізу та оцінювання соціально-економічної диференціації регіонального розвитку. У дослідженні розглянуто систематизацію теоретичних положень і методологічних рекомендацій із аналізу та регулювання диференціації соціально-економічного розвитку регіонів у системі їхньої економічної безпеки. Запропоновано метод аналізу для дослідження структури та динаміки диференціації соціально-економічного розвитку регіонів. Доведено необхідність використання комплексу статистичних характеристик і методу кластерного аналізу. Запропоновано методичний підхід розрахунку одномірного відносного показника рангового розкиду, що формує уявлення про розподіл економічної диференціації у середині економічної групи, що досліджується на диференціацію. Проведено аналіз методів, що використовуються у задачах дослідження структури та динаміки диференціації соціально-економічного розвитку регіонів, запропоновано методику оцінки рівня диференціації. Розкрито поняття соціально-економічної диференціації регіонів. Запропоновано напрями регулювання соціально-економічної диференціації та інтенсифікації економічної безпеки регіону. Відповідно до здійсненого кластерного аналізу й використаного адаптивного методу оцінювання економічної безпеки регіонів для моніторингу та стратегічного планування соціально-економічного розвитку регіону було досліджено соціально-економічний розвиток регіонів України. Згідно з результатами аналізу було встановлено, що за багатьма економічними та соціальними показниками спостерігається значна розбіжність, що може підтверджувати диспропорції у регіональному розвитку

Ключові слова: регіональні диспропорції, соціально-економічні показники регіонального розвитку, кластеризація, оцінювання, одномірний відносний показник рангового розкиду

The Impact of Interregional Economic Differentiation on the Economic Security of the Regions of Ukraine

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Abstract. Interregional economic differentiation is inherent in most countries of the world. On the one hand, economic differentiation is a natural phenomenon, on the other hand, it shows the inefficiency of the national budget policy. However, for the development of effective mechanisms for reducing interregional economic differentiation, the primary task is to objectively assess the national policy. The purpose of the study is to analyse and evaluate the socio-economic differentiation of regional development. The study considers the systematisation of theoretical provisions and methodological recommendations for the analysis and regulation of differentiation of socio-economic development of regions in the system of their economic security. A method of analysis is proposed for investigating the structure and dynamics of differentiation of socio-economic development of regions. The need to use a set of statistical characteristics and the method of cluster analysis has been proved. A methodological approach to calculating a one-dimensional relative indicator of rank spread is proposed, which forms an idea of the distribution of economic differentiation within the economic group being studied for differentiation. The analysis of methods used in the tasks of investigating the structure and dynamics of differentiation of socio-economic development of regions is carried out, and a methodology for assessing the level of differentiation is proposed. The concept of socio-economic differentiation of regions is revealed. Areas of regulation of socio-economic differentiation and intensification of economic security of the region are proposed. The socio-economic development of the regions of Ukraine was investigated according to the cluster analysis and the adaptive method of assessing the economic security of regions used for monitoring and strategic planning of the socio-economic development of the region. According to the results of the analysis, it was found that there is a significant discrepancy in many economic and social indicators, which can confirm the disparity in regional development

Keywords: regional imbalances, socio-economic indicators of regional development, clustering, evaluation, one-dimensional relative indicator of rank spread

Introduction

The regional differentiation in Ukraine has reached a scale at which it becomes a factor of violation of economic security. To neutralise such threats, it is necessary to monitor them and develop an effective set of measures to prevent and overcome the most dangerous manifestations of an unbalanced national economy [1]. Reducing the level of differentiation of socio-economic development of regions that differ in type, population composition, different potential, geographical location, and degree of participation in socio-economic processes requires rethinking the key approach to their development. An important condition for regulating excessive socio-economic differentiation is to change approaches to regional development policies, which for a long period were mainly based on centralised principles and an economic concept (in particular, subsidising lagging areas and sectors). The reflexive rather than proactive nature of the established approaches to the national regional policy indicates an urgent need to form and implement a new policy of regional (local) development.

The growing scale of economic differentiation of regional development is an important problem of the

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economic development of Ukraine at the present stage. "Such trends can be traced at all territorial levels: at the country level, as the differentiation of the development of individual regions, and at the level of an individual region, as the differentiation of the development of individual terri-torial units within the region. But economic differentiation cannot be considered as an absolutely negative phenomenon: the country's economic space cannot be completely homogeneous, and a certain level of differentiation is natural" [2]. At the same time, a high degree of regional differences means identifying a group of depressed regions within the country, which can lead to deep social conflicts over the territorial distribution of resources and negatively affect the economic, social, and political stability of the state. In addition, "the lack of an effective and consistent national regional policy further aggravates the situation, which creates an additional level of economic threat. Consequently, there is a natural need to search for possible ways to overcome regional development imbalances, in particular by borrowing the experience of developed countries" [3], which primarily determines the relevance of the study.

There are a large number of research papers devoted to the investigation of trends and uneven territorial development and laws of differentiation, which are reflected in the studies by: Yu.S. Ershov [4], D. Ushakov, M. Vinichenko, E. Frolova [5], A.G. Isaev [6], V.V. Lokosov, Yu.V. Ryumina and V.V. Ulyanov [7], D. Loginov, E. Karanina, M.V. Palkina [8], V.Yu. Maslikhina [9], O. Hrybinenko, O. Bulatova, O. Zakharova [10]. The research was dominated by questions about the scientific, practical, and methodological principles of functioning of territorial communities under the conditions of administrative and financial decentralisation, and questions about their development from the standpoint of deepening socio-economic differentiation as components of an important national regional policy are highlighted to a lesser extent.

Some methodological issues that require a broader scientific understanding and theoretical and empirical research are still not fully resolved. In addition, many issues related to socio-economic development and the methodology of the system of territorial differentiation management remain unclear. Literature analysis suggests that there is no single or established method for identifying problem regions. All this, combined with the relevance of the problem, determined the need to investigate it.

The purpose of the study is an analysis, assessment, and management of interregional economic differentiation of the regions of Ukraine in the system of their economic security.

Materials and Methods

To solve the research objective, the following methods were used: historical method – to identify the conditions and start the process of public administration reform and regional differentiation; formal-logical method – to understand logical relationships with the goals and consequences of regional differentiation; systematic approach – to analyse and evaluate the consequences of a long and incomplete differentiation process.

The initial data for the analysis of socio-economic indicators of economic security of the regions were obtained as a result of statistical processing of information from the State Statistics Service of Ukraine, the Ministry of Finance of Ukraine, the Ministry of Economic Development of Ukraine, the Ministry of the Infrastructure of Ukraine, the Ministry of Social Policy, the Ministry of Development of Communities and Territories of Ukraine, etc. [11-15]. Calculations, in particular establishing relationships between various parameters, analysing various statistical initial data, intermediate and final results, including a graphical representation of these results, were performed in MS Excel and the SPSS (Statistical Package for the Social Science) software suites.

The paper presents the results of a study of interregional economic differentiation of the regions of Ukraine and determines its impact on the economic security of the regions. To identify regional imbalances in the socio-economic development of the regions of Ukraine, a multiparametric cluster analysis was carried out, which revealed the heterogeneity of the development of the regions of Ukraine. The initial data for calculations were indicators of socio-economic development of 24 regions of Ukraine (excluding the Autonomous Republic of Crimea and temporarily occupied territories) during 2014-2019, according to the State Statistics Service of Ukraine [14].

Indicators of socio-economic development of the regions that were selected for clustering are:

– gross regional product (mln. UAH);
– index of physical volume of retail trade turnover compared to the previous year, %;
– export, thous. USD
– import, thous. USD
– consumer price indices by region, %;
– industrial output indices, % compared to the previous year;
– agricultural product indices, %;

– capital investments, mln. UAH;
– number of businesses, units;
– net profit (loss) of enterprises, mln. UAH;
– migration growth, reduction (-) of the population, persons;
– natural growth, reduction (-) of the population, persons;
– average number of available population, persons;
– employment of the working-age population, %;
– household income, mln. UAH.

The corresponding module of the SPSS software suite is used to perform calculations using cluster analysis methods. To visually display clustering results, a dendrogram is used – a tree formed on a matrix of cluster proximity indicators. Tree nodes have subsets of objects. In this case, for each tree level, the set of objects from all nodes is the original set of objects. The connection of nodes between levels corresponds to the union of two sets of clusters. The edge length corresponds to the distance between clusters. The dendrogram was constructed using the intergroup relationship method. That is, the distance between clusters is equal to the average of all distances between all possible pairs of points in two clusters. The information required to calculate the distance is based on all theoretically possible pairs of observations.

Results and Discussion

The development of individual territorial units in the structure of the state is the basis for ensuring its economic and social growth. "Consequently, a policy of stimulating the development of individual territories is being actively implemented all over the world on the way to equalising the existing imbalances in their development. Ukraine is no exception, which includes many border and mountainous areas, including those that track a long path of slow economic and social growth" [3].

The results of cluster analysis are presented in the form of a dendrogram (Fig. 1). The list of regions included in each of the clusters is shown in Table 1.

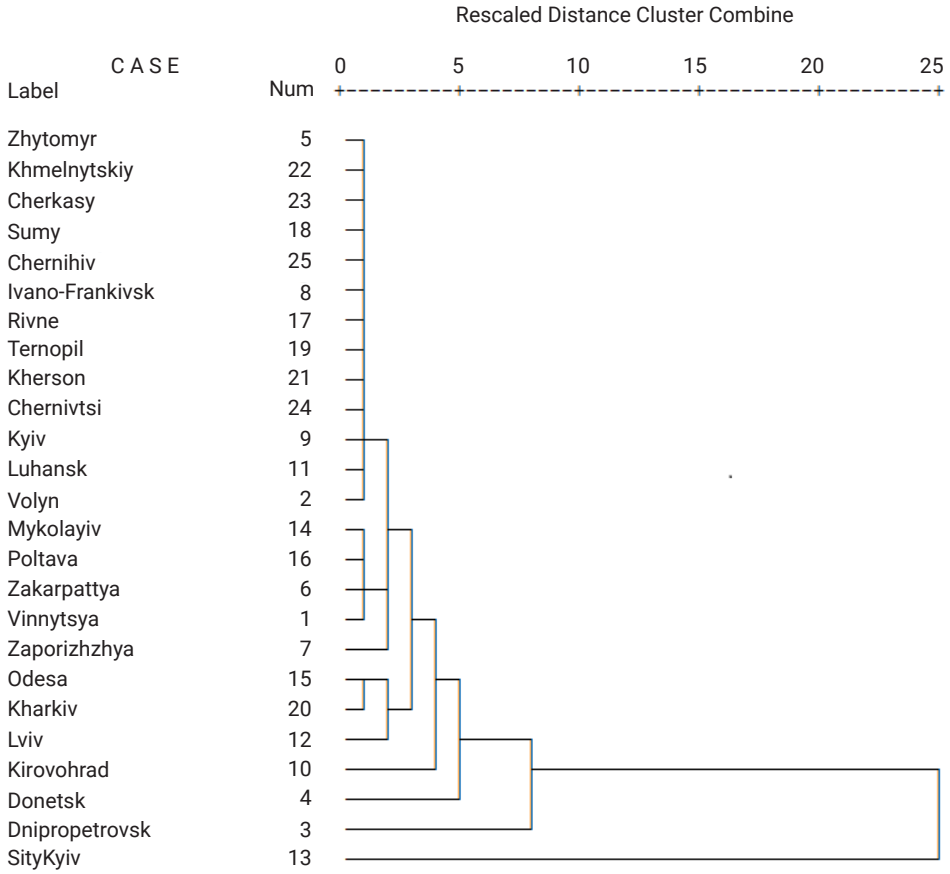

Figure 1. Dendrogram of clustering of regions (oblasts) of Ukraine

Source: compiled by the author

Table 1. Clustering of regions (oblasts) of Ukraine with the definition of total GRP in 2018

Cluster	Oblast	GRP of the oblast, mln. UAH	Total GRP, mln. UAH
Cluster 1	Vinnytska	119,637.354	579,445.009
	Zakarpatska	51,605.88	
	Zaporizka	149,135.064	
	Mykolayivska	83,352.388	
	Poltavska	175,714.323	
Cluster 2	Volynska	56,700.224	971,489.322
	Zhytomyrska	77,649.77	
	Ivano-Frankivska	83,228.023	
	Kyivska	202,321.36	
	Luhanska	36,367.798	
	Rivnenska	61,559.886	
	Sumska	70,680.648	
	Ternopilska	50,017.394	
	Khersonska	56,209.059	
	Khmelnytska	75,494.708	
	Cherkaska	96,301.08	
	Chernivetska	35,394.732	
	Chernihivska	69,564.64	
Cluster 3	Dnipropetrovska	382,029.912	382,029.912
Cluster 4	Donetska	197,639.168	197,639.168
Cluster 5	Kirovohradska	67,335.62	67,335.62
Cluster 6	Lvivska	180,433.374	593,380.206
	Odeska	176,359.338	
	Kharkivska	236,587.494	
Cluster 7	Kyiv city	884,719.278	884,719.278

Source: obtained by the author based on [15]

After analyzing the GRP for 2018 in accordance with the grouped clusters, the following conclusions can be drawn: Cluster 7, Cluster 6, and Cluster 3 account for more than 60% of the country's total GDP for the year. Figure 2 shows the results of cluster analysis for the GDP in 2018.

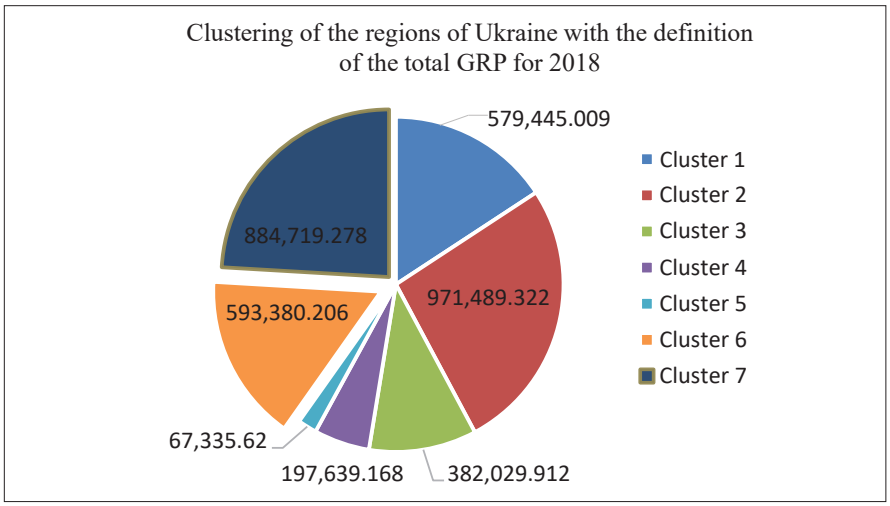

Figure 2. GDP structure in 2018 by specific clusters

Source: calculated by the author based on [15]

Based on the results of regional clustering, the following conclusion can be drawn about the disproportionality of regional development: Cluster 7, Cluster 6, and Cluster 3 together form more than 50% of GDP. In addition, for example, Cluster 1 (5 oblasts) forms 15.7% of GDP, and Cluster 2 (13 oblasts) forms 24% of GDP. All this once again indicates a significant differentiation of the regions of Ukraine from the standpoint of economic development. Figure 3 shows a map of Ukraine with regions plotted on it, which are divided into certain clusters by colours and numbers.

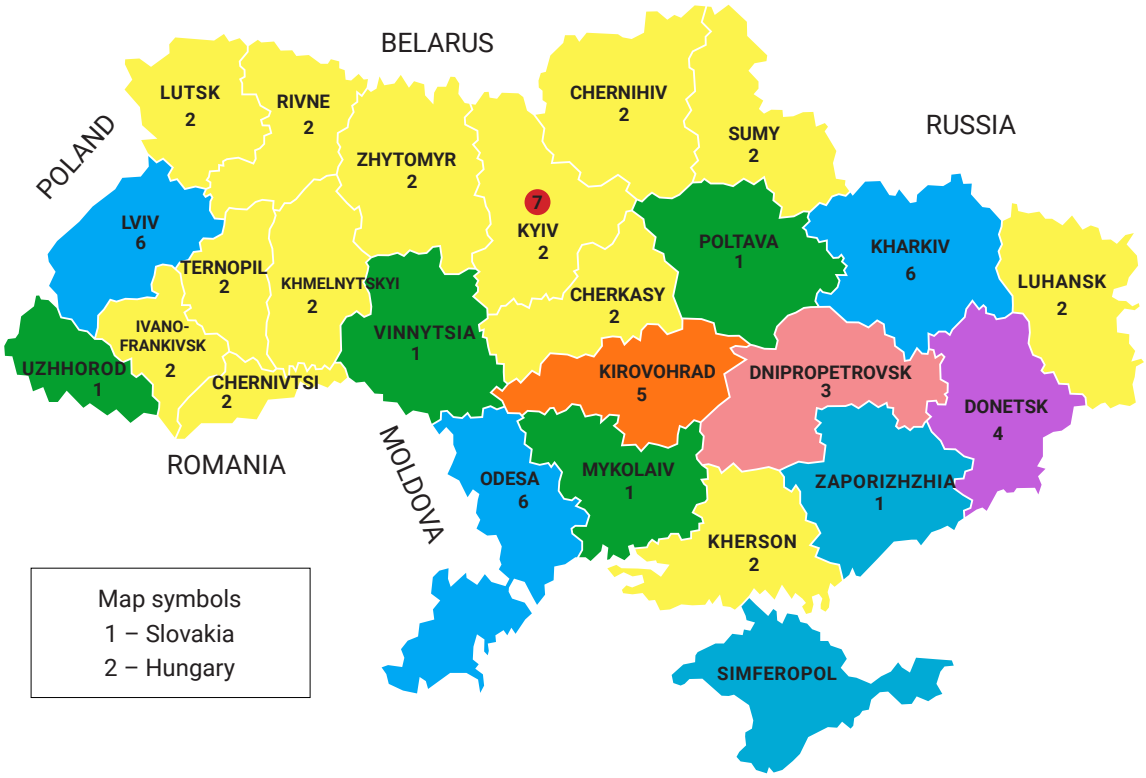

Figure 3. Map of Ukraine with the division of regions into groups of clusters according to the level of socio-economic development

Source: compiled by the author

In fact, a peculiar situation has developed in Ukraine, when most oblasts (recipient oblasts) began to receive subsidised transfers from donor oblasts, and the share of donor oblasts began to steadily decrease. "Structural changes in the Ukrainian economy did not ensure economic growth, as a result of which underdeveloped territories were clearly distinguished, in which basic socio-economic indicators began to differ significantly even from the national average. Notably, a number of such depressed regions also include those oblasts that have long had a high level of industrial and Infrastructure development" [16]. Imbalances in the economic development of the regions of Ukraine are complex in nature and "this factor leads to insufficient effectiveness of the national policy of equalising the economic development of the regions and to the need to take special measures aimed at reducing the asymmetry of the economic development of the regions of Ukraine" [17].

Nowadays, in the practice of economic research, the decile method of estimating differentiation is used, but it does not give an idea of the distribution of economic differentiation within the economic group being studied for differentiation. The study offers a methodological approach for calculating a one-dimensional relative indicator of the rank spread. The calculation of this indicator can be represented as a set of consecutive calculations:

1) selection of a key indicator that reflects the socio-economic development of regions. Some of these indicators are the indicators "GRP" or "value of GRP per capita". Therefore, one of these indicators can be selected for the study and a sample can be formed at a certain point in time or time interval;

2) ranking the selected indicator in ascending order, i.e., placing the values of the indicator in order of the degree of economic development from the smallest to the largest;

3) determining the average value of the spread (gap) between the paired ranks of the selected indicator:

$$\bar{R} = \frac{\sum_{i=1}^{n}(R_i - R_{i-1})}{n} \quad (1)$$

where R_i and R_{i-1} – adjacent ranks, as they grow; n – the number of ranks in the population.

1. Determination of the average value of the selected key indicator ($\bar{X}$);

2. Calculation of a one-dimensional relative rank spread indicator showing intra-group differentiation:

$$D = \frac{\bar{R}}{\bar{X}} \quad (2)$$

Based on the proposed methodological approach, the analysis of differentiation of regional economic development during 2014-2018 by GRP is carried out. The results of the analysis are presented in Table 3.

3. Determination of the level of differentiation according to the scale (Table 2). At the last stage, the level of differentiation is determined in accordance with the proposed scale, obtained empirically.

Table 2. Scale for determining intra-group differentiation of an indicator

Value D	Differentiation scale
D<5%	Weak differentiation
5%<D<10%	Moderate differentiation
10%<D<30%	Significant differentiation
D>30%	High differentiation

Source: compiled by the author

Table 3. Results of calculations of the level of differentiation of oblasts of Ukraine for 2014-2018

2014		2015		2016		2017		2018	
Chernivetska	15,049	Chernivetska	18,506	Chernivetska	21,239	Chernivetska	28,591	Chernivetska	33,903
Ternopilska	21,676	Luhanska	23,849	Ternopilska	31,072	Luhanska	30,285	Luhanska	35,206
Khersonska	23,250	Ternopilska	26,656	Luhanska	31,356	Ternopilska	40,747	Ternopilska	49,133
Zakarpatska	24,120	Zakarpatska	28,952	Zakarpatska	32,390	Zakarpatska	43,043	Zakarpatska	52,445
Volynska	24,195	Volynska	31,688	Volynska	35,744	Khersonska	47,868	Khersonska	55,161
Chernihivska	28,156	Khersonska	32,215	Khersonska	38,743	Rivnenska	48,836	Rivnenska	56,842
Rivnenska	28,724	Rivnenska	35,252	Rivnenska	39,469	Volynska	51,972	Volynska	60,448
Kirovohradska	28,758	Chernihivska	36,966	Chernihivska	43,362	Kirovohradska	53,031	Kirovohradska	64,436
Zhytomyrska	29,815	Zhytomyrska	38,425	Kirovohradska	46,021	Sumska	56,530	Sumska	68,489
Sumska	30,397	Kirovohradska	38,447	Sumska	46,287	Chernihivska	56,672	Chernihivska	70,624
Luhanska	31,393	Khmelnytska	41,088	Zhytomyrska	47,919	Zhytomyrska	61,470	Khmelnytska	75,646
Khmelnytska	32,162	Sumska	41,567	Khmelnytska	48,859	Ivano-Frankivska	63,850	Zhytomyrska	77,110
Mykolayivska	35,408	Ivano-Frankivska	45,854	Ivano-Frankivska	51,404	Khmelnytska	63,882	Ivano-Frankivska	78,443
Ivano-Frankivska	37,643	Mykolayivska	48,195	Mykolayivska	57,815	Mykolayivska	69,371	Mykolayivska	79,916
Cherkaska	38,466	Cherkaska	50,843	Cherkaska	59,412	Cherkaska	73,176	Cherkaska	93,315
Vinnytska	43,990	Vinnytska	59,871	Vinnytska	74,411	Vinnytska	92,427	Vinnytska	111,498
Zaporizka	65,968	Zaporizka	89,061	Zaporizka	104,323	Zaporizka	130,377	Zaporizka	147,076
Poltavska	69,831	Lvivska	94,690	Lvivska	114,842	Lvivska	147,404	Odeska	173,241
Lvivska	72,923	Poltavska	95,867	Poltavska	116,272	Odeska	149,530	Poltavska	174,147
Odeska	74,934	Odeska	99,761	Odeska	119,800	Poltavska	150,904	Lvivska	177,243
Kyivska	79,561	Kyivska	104,030	Kyivska	128,638	Kyivska	157,043	Donetska	192,256
Kharkivska	96,596	Donetska	115,012	Donetska	137,500	Donetska	166,404	Kyivska	198,160
Donetska	119,983	Kharkivska	124,843	Kharkivska	154,871	Kharkivska	187,454	Kharkivska	233,321
Dnipropetrovska	176,540	Dnipropetrovska	215,206	Dnipropetrovska	244,478	Dnipropetrovska	313,830	Dnipropetrovska	369,468
Kyiv city	357,377	Kyiv city	451,700	Kyiv city	559,140	Kyiv city	699,185	Kyiv city	833,069
$\bar{R}$	14,263	$\bar{R}$	18,049	$\bar{R}$	22,412	$\bar{R}$	27,941	$\bar{R}$	33,298
$\bar{X}$	63,476	$\bar{X}$	79,541	$\bar{X}$	95,414	$\bar{X}$	119,355	$\bar{X}$	142,423
D	0.2247	D	0.2269	D	0.2349	D	0.2341	D	0.2338

Source: compiled by the author

Based on the calculated differentiation indicator in the period from 2014 to 2018, its average value can be calculated ($\bar{D}$), which for this period is 0.2309, which indicates a significant interregional economic differentiation. Among the main reasons for interregional differentiation are the following:

– agglomeration factors;

– effect of concentration of production and economic activity on the urbanisation principle;

– development of transport and geographical conditions;

– narrow specialisation of economic activity in some oblasts of Ukraine;

– inefficient distribution of the national budget, which does not contribute to proportional regional development.

Based on the conducted research, it is possible to identify positive and negative factors of differentiation of interregional economic development. Positive factors include:

– push effect for less developed regions;

– influx of the working-age population to more developed regions, which allows increasing the income of the migrating population without changing the country;

– increase in the efficiency of allocating and using available resources;

– availability and growth of regional competitiveness;

– capital inflows to more developed regions;

– increase in the level of national activity.

The negative consequences of significant differentiation of interregional economic development include:

– increase in the level of social injustice;

– increase in social discontent of the population;

– reduction in the level of economic security;

– rise in unemployment and incomes in less developed regions;

– population migration growth;

– significant urbanisation and overpopulation of large cities;

– growing political conflicts and crime;

– weakening of economic ties between regions;

– reduced competitiveness and investment attractiveness of regions with less economic development;

– the emergence of the "problematic" regions.

As can be observed, the negative consequences are much greater than the positive ones and they have a greater impact on national and regional economic security, so the differentiation of interregional economic development has a negative role for the national economy as a whole. Comparison of certain clusters of regions with the level of economic security of these regions, which is estimated by the adaptive method [18], shows a significant impact of differentiation on economic security and regional development. With the help of the developed methodological approach and tools for its implementation, it will be possible to create a management system that can identify the causes of the dangerous state of the region and develop measures to eliminate these provisions, and take actions to improve the economic security of the region.

In a previous study [18], an adaptive method for assessing the economic security of regions was developed for monitoring, evaluating and planning the economic and social development of the region. Testing of the proposed method based on data on the state and development of the regions allowed us to assess the state of economic security of the regions of Ukraine in 2018 (Table 4).

Table 4. Levels of economic security of the oblasts of Ukraine in 2018 by cluster

Cluster	Oblast	Level of economic security
Cluster 1	Vinnytska	0.24
	Zakarpatska	0.21
	Zaporizka	0.22
	Mykolayivska	0.21
	Poltavska	0.15
Cluster 2	Volynska	0.09
	Zhytomyrska	0.05
	Ivano-Frankivska	0.15
	Kyivska	0.1
	Luhanska	0.03
	Rivnenska	0.07
	Sumska	0.12
	Ternopilska	0.16
	Khersonska	0.03
	Khmelnytska	-0.04
	Cherkaska	0.01
	Chernivetska	0.09
	Chernihivska	-0.3

Table 4, Continued

Cluster	Oblast	Level of economic security
Cluster 3	Dnipropetrovska	0.25
Cluster 4	Donetska	0.10
Cluster 5	Kirovohradska	-0.2
Cluster 6	Lvivska	0.24
	Odeska	0.26
	Kharkivska	0.27
Cluster 7	Kyiv city	0.4

Source: obtained by the author based on [18]

The most critical situation from the standpoint of economic security is observed in the regions of Cluster 2, and separately in 4 and 5, which can confirm the relationship between the differentiation of regions and the level of economic security. Based on the cluster analysis and the applied adaptive method of assessing the economic security of regions for monitoring and strategic planning of socio-economic development of the region, the socio-economic development of the regions of Ukraine is considered. Based on the analysis, a general conclusion can be drawn that there is a significant discrepancy in many economic and social indicators, which can confirm the disparity in regional development, which ultimately affects the economic security of these regions.

Conclusions

The analysis of methods used to investigate the structure and dynamics of differentiation of social and economic development of regions demonstrated the need for the integrated use of cluster analysis and statistical characteristics of differentiation to study and ensure a high level of economic security of regions and the country as a whole. A methodology for determining the degree of differentiation of socio-economic development of regions is proposed. The importance of the task is to reduce imbalances in the social sphere, which is a prerequisite for improving the economy to ensure economic security in the region.

Interregional economic differentiation is already systemic in nature and reaches critical indicators for ensuring the economic security of the regions. Therefore, it is necessary to introduce a model that can ensure the coordination of socio-economic interests of the regions, will contribute to the or-ganisation of favourable conditions for maintaining a high-quality level of economic security of the regions in the country. The development and implementation of a long-term strategy in this area are necessary to interrupt the process of economic imbalance.

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Маркетинговий механізм організації харчування дітей у закладах загальної середньої освіти

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Анотація. Актуальність дослідження питання організації та якості харчування дітей у закладах освіти пов'язана з необхідністю визначення потенціалу застосування маркетингових підходів з метою підвищення рівня організації харчування дітей. Мета статті полягає у виявленні методологічних методів щодо формування концептуальної моделі маркетингового механізму організації харчування дітей у закладах загальної середньої освіти. Теоретико-методологічною основою дослідження стали загальнонаукові та специфічні методи, за допомогою яких були сформульовані теоретичні положення напрямів проблематики організації харчування дітей у закладах загальної середньої освіти. У статті аналізується внутрішня структура маркетингового механізму шляхом аналізу її основних функцій: планування, організація, мотивація та контроль. Розкрито зміст ключових функцій маркетингового механізму та охарактеризовано їх зміст, а також розроблено концептуальну модель маркетингового механізму організації харчування дітей шкільного віку на основі взаємодії суб'єктів маркетингу на соціальному, системному та особистому рівнях управління. Автором запропоновано розглядати ядро моделі маркетингового механізму як систему взаємодії суб'єктів маркетингу, які є ключовими стейкхолдерами на ринку продуктів і послуг харчування дітей шкільного віку. Встановлено, що стратегічним пріоритетом запровадження маркетингового механізму організації харчування дітей є сприяння комплексній реалізації довгострокових програм у цій сфері на основі державно-приватного партнерства. Практична цінність дослідження полягає у всебічному аналізі структури маркетингового механізму, спрямованого на організацію взаємодії суб'єктів процесу, яка сприятиме досягненню максимально можливого рівня якості та безпечності харчування дітей за наявних умов

Ключові слова: маркетинг, стейкхолдер, послуги харчового сервісу, концепція соціально-етичного маркетингу, ринок продовольства

Marketing Mechanism of Children's Nutrition in General Secondary Education Institutions

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Abstract. The relevance of the study of the organisation and quality of children's nutrition in educational institutions is related to the need to determine the potential for applying marketing approaches to improve the level of child nutrition organisation. The purpose of the study is to identify methodological approaches for the establishment of a conceptual model of the marketing mechanism for organising children's nutrition in institutions of general secondary education. The theoretical and methodological basis of the study was general scientific and specific methods, with the help of which the theoretical provisions of the directions of the problem of organising children's nutrition in institutions of general secondary education were formulated. The study analyses the internal structure of the marketing mechanism by considering its main functions: planning, organisation, motivation, and control. The content of the key functions of the marketing mechanism is revealed and their content is characterised, and a conceptual model of the marketing mechanism for organising food for school-age children is developed based on the interaction of marketing entities at the social, systemic and personal levels of management. The study suggests considering the core of the marketing mechanism model as a system of interaction between marketing entities that are key stakeholders in the market of food and nutrition services for school-age children. It is established that the strategic priority of introducing a marketing mechanism for organising children's nutrition is to promote the comprehensive implementation of long-term programmes in this area based on public-private partnerships. The practical value of the study is conditioned by a comprehensive analysis of the structure of the marketing mechanism aimed at organising interaction between the subjects of the process, which would contribute to achieving the maximum possible level of quality and safety of children's nutrition under existing conditions

Keywords: marketing, stakeholder, food services, food market, the concept of social and ethical marketing

Introduction

One of the most important tasks of society is to create conditions for preserving and improving the health of children. Children starting from the age of 6 are full-fledged consumers in the market of food and food services and get the right to make small transactions. In fact, students of general secondary education institutions find themselves in the adult market segment, but they do not have a stable model of consumer behaviour, which makes them vulnerable to the intensive marketing activity of food manufacturers and suppliers. Regulating the organisation of children's meals is of great importance, however, it does not provide guaranteed effectiveness in solving existing problems, it requires the involvement of a wide range of stakeholders and innovative approaches based on the marketing mechanism.

Theoretical principles of marketing in the market of food products and services were investigated by B.I. Paskhaver [1], J. Pomeranz and S. Adler [2], E.P. Golubkov [3], G. Kundeyeva, T. Mostenska and I. Yevseeva [4] et al. Practical bases of implementation of marketing activities in the markets of food products and services have become the subject of study by

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Ukrainian researchers. In particular, N.L. Savitska revealed the marketing aspects of providing full-fledged nutrition to the population [5]. The study by D.G. Legeza [6] examined the logistics aspects of organising the marketing of business entities in the market of food products and services. Aspects of the functioning of the food market are revealed by V.V. Lagodienko [7].

The study by H. Shin and S.J. Lee, Yu.-N. Lee, and S. Shon [8] was devoted to the organisation of children's nutrition and developing strategies for improving its level in the villages of the Kyrgyz Republic. The authors considered this issue based on an analysis of the impact of tactics and support for state health programmes. The results were generally negative and indicated an insufficient level of nutrition for children, despite more than 10 years of support from state health programmes. At the same time, other foreign researchers [9] reviewed and comprehensively analysed the results of the implementation of the European Food and Nutrition Action Plan for 2015-2020 among the member states of the European Regions. The researchers found generally positive dynamics in some areas of nutrition in the field of health care, in particular the organisation of nutrition for school-age children.

Findings of researchers who have studied various aspects of the organisation of nutrition for school-age children mainly reveal the factors of influence of the nutrition system of children on their health and well-being; study the problems of quality control of food products supplied by manufacturers to the secondary education institutions (SEI); the main provisions for informing, educational work, popularising the principles of healthy nutrition; aspects of the functioning of economic entities during the food chain "from producers to the table" [10]. Despite the significant contribution of researchers to the study of the problems of organisation of child nutrition in SEIs, it is necessary to further investigate the potential of applying marketing approaches to improving the level of child nutrition organisation.

The purpose of the study is to define methodological approaches to the establishment of a conceptual model of marketing mechanism of catering for children in institutions of general secondary education.

Methodological

The theoretical and methodological basis of the research are the studies by Ukrainian and foreign specialists on marketing activities of the food and food services market, and the conceptual foundations of the theory of marketing management. In the process of writing the paper, the author used the following general and special methods, with the help of which the research problems were formulated and new ways for their solution were substantiated: theoretical generalisation, structural and functional analysis, system analysis, synthesis, monographic method, and scientific abstraction. The content of the research consists of the following stages: identification of actual needs and thematic area; selection of methodological techniques and tools for information processing and analysis of results; development of the theoretical foundations of the marketing mechanism to formulate the vocabulary; determination of ways for diversification of marketing product policy; determination of prospects for further study.

In particular, using the method of theoretical generalisation, the theoretical foundations of the functioning of the marketing mechanism of the public catering service sector as an objective process of interaction between market entities are formed, and its key characteristics are outlined. The monographic method served as the basis for a comprehensive and in-depth study of factors, tools, and methods of interaction of subjects of the marketing mechanism of child nutrition organisation in SEIs in Ukraine and individual countries of the world, identifying the features of their interaction in conditions of achieving the maximum possible level of quality and safety of nutrition for school-age children. To systematise and generalise global trends in the process of managing the child nutrition system, and explication the functions and content of the marketing mechanism, the method of structural and functional analysis was used. The method of system analysis and synthesis allowed establishing structural links between all subjects of the process of providing children with food.

Using the method of scientific abstraction, the study results were generalised and conclusions were formulated through an in-depth knowledge of the structure and functions of the marketing mechanism, and a conceptual model of interaction between marketing subjects. Tabular and graphical techniques provided a visual interpretation of the obtained scientific results of the study on the established problem.

Results and Discussion

The key person in the market is the consumer, whose needs determine the content and areas of marketing activities. Consumer stereotypes are formed in childhood, so marketing influence on children is part of the business strategy of brand penetration into the child's mind [11]. Based on the analysis of the consumer status of a child, it is determined that at school age the buyer and consumer of food products and services is

a child, their consumer choice is guided by their own needs and makes decisions about the purchase and consumption of food under the influence of external and internal factors [12]. In the recommendations for healthy nutrition for adults dated 08.12.2017, the minister of health of Ukraine noted that "cultivation of healthy dietary choices for children of school age is based on the joint participation of parents, other family members, teachers, and the powerful influence of the external environment" [13].

Optimisation of approaches to the organisation of nutrition for children during the school day at the present stage is one of the priority tasks of society [4]. Changing the ways of forming cultural values, mental attitudes, and decision-making by modern children makes it necessary to find innovative approaches to improving the level of their conscious consumer behaviour in the food market based on the functioning of the marketing mechanism. The introduction of an effective marketing mechanism in the system of catering for children in SEIs requires a scientifically based conceptual framework with the use of modern information technologies and innovative approaches.

It is advisable to consider the marketing mechanism of catering for children as a multi-level marketing system that considers the state of the market of food products and services, interaction with the internal and external environment of marketing entities in the field of providing nutrition for children in organised groups, helps them adapt to changing business environment conditions. Given the focus of the marketing mechanism for organising children's meals in SEIs on solving an important social problem, it should provide for comprehensive regulation based on the interaction of key marketing entities. The marketing mechanism provides for the following components:

– "input" to the system;
– "output" of the system;
– internal structure of the marketing mechanism, which, for its part, contains the subject of management, the target purpose of the functioning of the mechanism, the object of management, marketing subjects (who participate in the functioning of the mechanism) and the existing relationships between them; levers of influence of marketing subjects on the object of management, methods of influence and key principles underlying its functioning [14].

The functioning of the marketing mechanism provides for the manageability of processes occurring in its internal structure, which is reflected in the availability of subjects and objects of management. For the most part, such elements provide for state support for the development of a particular sphere or industry. According to the principles concepts of social and ethical marketing, marketing activity management should involve the process of making managerial decisions that meet the expectations and requirements of the market (consumers) and the needs of society, so the managerial aspect of the marketing mechanism should be considered through management functions.

Modern science of economics and enterprise management identifies four main management functions: planning, organisation, motivation, and control. A special feature of the marketing mechanism for managing the children's nutrition system is the implementation of specific managerial functions through the use of specific marketing tools and levers of influence. The marketing mechanism of catering for children in SEIs should also provide for the performance of general management functions, the content of which is conditioned by the specifics of the object of management and its marketing nature (Table 1).

Table 1. Functions of the marketing mechanism for catering in SEI

Functions of marketing mechanism	Content of functions of the marketing mechanism for managing the child nutrition system in SEIs
Planning	
Setting a goal	Setting the goal is to achieve the highest possible level of quality and safety of food for school-age children under existing conditions
Identification of tasks that need to be completed to achieve the goal	Identification of operational tasks that need to be performed to improve the quality and safety of children's food
Choice of a strategy and means to achieve a goal	Establishment of a national strategy for modernising the catering system for school-age children. Development of interdepartmental and regional programmes for the implementation of measures aimed at using the existing potential to improve the quality and safety of food for school-age children

Table 1, Continued

Functions of marketing mechanism	Content of functions of the marketing mechanism for managing the child nutrition system in SEIs
Organisation	
Distribution of tasks among the subjects of the marketing mechanism	Distribution of programme tasks on the organisation of children's nutrition among the subjects of the marketing mechanism
Coordination of the activities of marketing mechanism entities	Implementation of systematic coordination of the activities of subjects of the marketing mechanism within the framework of programmes. Creation of an integrated management system within the field of interaction of subjects of the marketing mechanism and coordination of levers and methods of their influence on the model of consumer behaviour
Motivation	
Encouragement of participants to implement the tasks necessary to achieve the goal	Encouragement of marketing entities at different levels of management of the catering system for school-age children to perform tasks necessary to achieve the goal
Provision of consistency in the functioning of subsystems of the marketing mechanism	Creation of a system for operational coordination of key parameters of the functioning of subsystems of the marketing mechanism
Control	
Determination of the degree of achievement of the goal	Fixation of current parameters and determination of the degree of achievement of the goal and performance of tasks based on them. Identification of deviations and the reasons that caused their occurrence
Introduction of corrective measures	Implementation of corrective measures, correction of strategy and programmes

Source: compiled by the author based on [15]

The basis for the functioning of the marketing mechanism is the interaction of subjects whose participation is considered at the personal (consumer level), social (contact audience), and system (institutional mechanism) levels. According to the proposed hierarchy, the personal level of the organisation of the nutrition system is implemented at the level of the individual (child). It is manifested in their conscious choice of high-quality and safe food products and conscious motivated refusal to consume food that can harm their health. This level coincides with internal factors in an integrated approach to modelling consumer behaviour. The social level provides for the development of an appropriate environment, which will contribute to the establishment of healthy eating habits and increase the child's motivation for a personal conscious attitude to their own nutrition system. The group of marketing entities of this level includes the family, reference groups, the public, membership groups, which include the child, SEI, and extracurricular institutions, etc.

The system level of management of catering for school-age children should provide for the involvement of all marketing entities in the market of food products and services for school-age children, except for state authorities and local self-government. The system level provides for the involvement of operators of the food service sector, food producers, the retail system, the management of the SEI, utilities and business entities that provide catering for children in the SEI, etc. Interaction of stakeholders ensures in the long term the gradual development of an innovative consumption culture among the growing generation with a vector on its quality and food safety.

The strategic priority of implementing a marketing mechanism for organising children's nutrition in SEIs is to promote the comprehensive implementation of long-term programmes in this area based on public-private partnership [15], which is economically and socially substantiated. A conceptual model of the marketing mechanism for managing the organisation of children's nutrition is developed (Fig. 1), which provides for the diagnosis of a problem in the existing system of child nutrition organisation and consideration of it as a potential for improving the level of quality and safety of children's nutrition in the SEIs to the maximum possible extent.

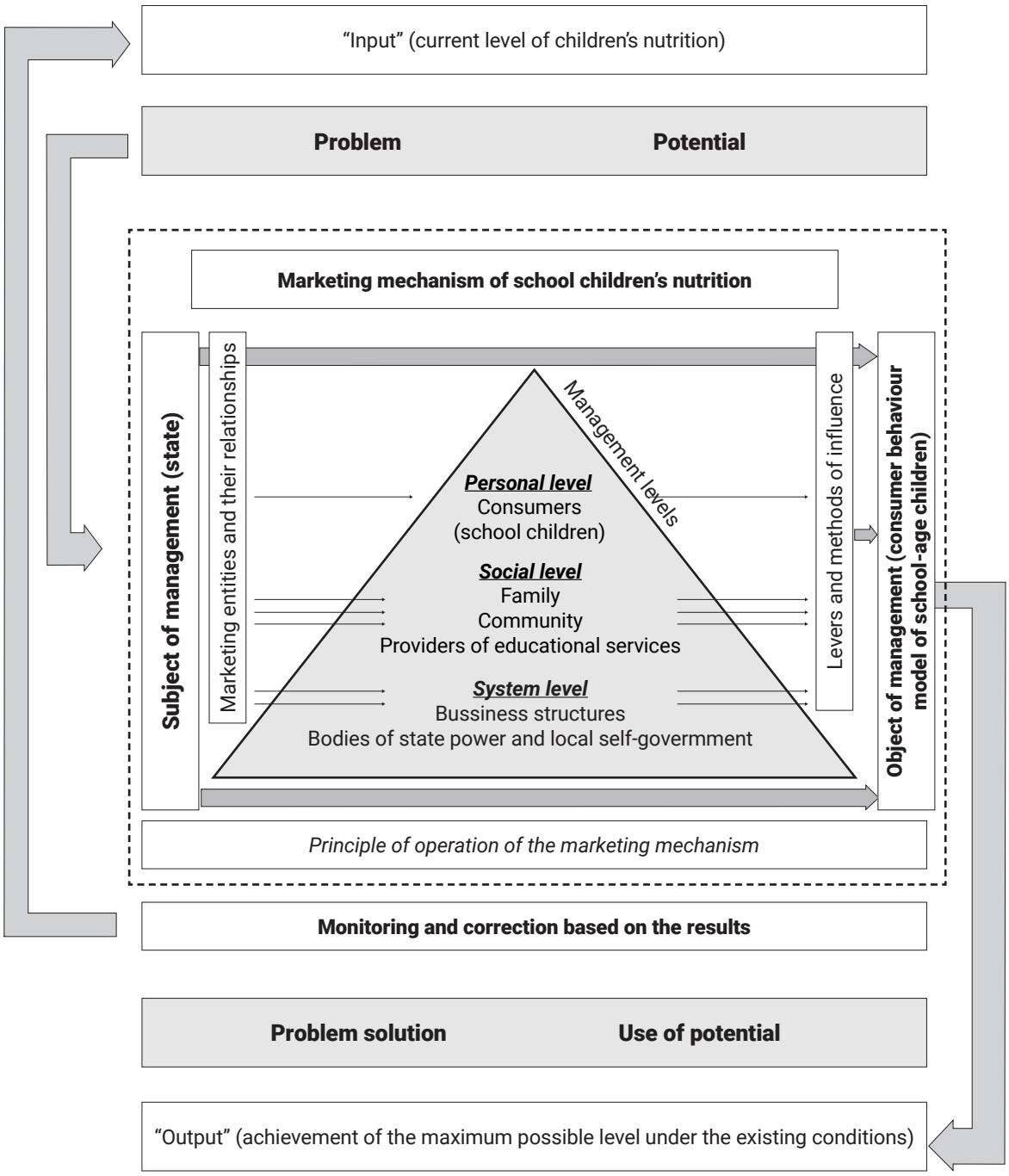

Figure 1. Conceptual model of the marketing mechanism

Source: developed by the author

A prerequisite for creating an open, reliable, and transparent system of catering for school-age children in the SEI is responsibility for the state of quality and safety of nutrition for school-age children, all subjects of the process of providing children with food. Well-coordinated interaction of all subjects of the marketing mechanism of catering for school-age children implies their purposeful activity to achieve the target goal in the form of the expected result. State regulation, in this case, performs the function of a marketing subject at the system level, which implies an active position on the use of specific tools and levers of influence (Fig. 2).

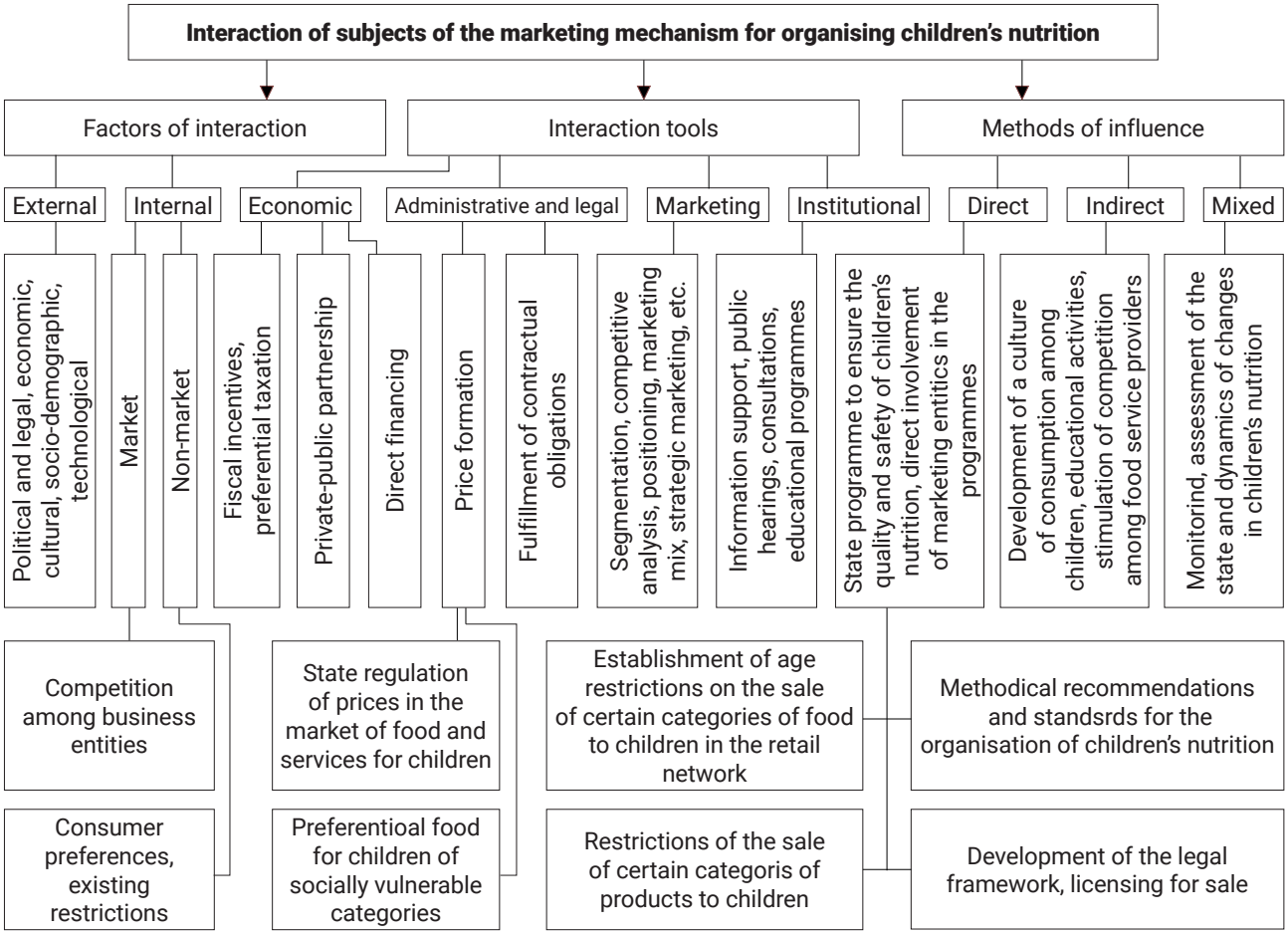

Figure 2. Factors, tools and methods of interaction of subjects of marketing mechanism for organising children's nutrition in secondary education institutions

Source: developed by the author

The conceptual model of functioning of the marketing mechanism for catering school-age children is determined by its key characteristics:

– the functioning of the marketing mechanism is a controlled process, the subject of management forms the field of interaction of the subjects of the marketing mechanism and reasonable restrictions;

– the core of the marketing mechanism is the system of interaction of marketing entities, the level of group interaction of which affects the effectiveness of using the potential to improve the efficiency of catering for children to the maximum possible (guaranteed) level in the existing conditions [16];

– the interaction of marketing subjects is characterised by the presence of chain reactions caused by the existence of relationships between subjects;

– the functioning of the marketing mechanism is aimed at obtaining a specific effect (target result) and the overall goal of marketing entities;

– the purpose of the functioning of the marketing mechanism is to improve the level of quality and safety of children's food through a qualitative change in the model of consumer behaviour of children and strengthen the inner conviction of children to give preference to healthy eating in the process of making decisions about the purchase and consumption of food, and the choice of food service providers;

– subjects of the marketing mechanism use appropriate levers (marketing tools and resources) and methods of influence to achieve the target goal.

The complexity of a marketing mechanism depends on the complexity of the processes that occur in it, the scale and number of links. In this case, the opinion of researchers who argue that the more complex the social process, the more complex the mechanism of its regulation, is correct [15]. However, the well-established functioning of an effective marketing mechanism can provide a synergistic effect due to the creation

of conditions for innovative development based on the introduction of the latest approaches by marketing entities to solving existing problems of society, the development of the market for food products and services and the activities of individual business entities. The implementation of the marketing mechanism for organising children's nutrition is aimed at organising the interaction of marketing entities that would allow achieving the maximum possible level of quality and safety of children's nutrition under the existing conditions.

Conclusions

Based on the study results, the structure of the marketing mechanism, its functions and the conceptual model of interaction between marketing entities at the system, social and personal levels of management are determined. It is established that the strategic priority in the introduction of a marketing mechanism for catering for school-age children is to promote the comprehensive implementation of long-term programmes in this area based on public-private partnerships. At the same time, it is worth noting that the functioning of the marketing mechanism is based on the interaction between the subjects of this process. In this regard, the study comprehensively analysed and identified the factors, tools, and methods of interaction of subjects of the marketing mechanism for organising children's nutrition in general education institutions.

Insufficient attention to the problem of organising children's nutrition in institutions of general secondary education can lead to a complex of negative consequences, including violations of the food regime, the creation of distorted eating habits, etc., which are difficult to correct in the future. Therefore, promising areas of implementation of the marketing mechanism in practical activities related to catering in institutions of general secondary education to improve food service in educational institutions and increase the level of consumer loyalty require further study and scientific substantiation.

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