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Address for contacts:

Lviv Polytechnic National University
79013, 12 Stepan Bandera Str., Lviv, Ukraine

E-mail: info@eem.com.ua

www: <https://eem.com.ua/en>

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Anna Loi*

State University of Trade and Economics

02156, 19 Kyoto Str., Kyiv, Ukraine

<https://orcid.org/0000-0002-4092-887X>

Identification of investment attraction strategies to increase the economic potential of a trading enterprise

Abstract. In the current conditions of globalisation and rapid development of market competition, effective investment attraction is becoming a critical success factor for enterprises in the trade sector. The purpose of this study is to analyse ways to attract investment in the development of the economic potential of commercial enterprises and substantiate the areas for potential development. In the course of the study, methods of statistical analysis of enterprise reporting data, methods of abstraction and generalisation were used. The paper discusses such strategies as the active use of digital technologies for business promotion, focus on startups and innovative projects, environmental responsibility and social orientation of businesses, new methods of attracting investment, such as crowdfunding and the use of cryptocurrency and blockchain technologies, and attracting corporate investments and partnerships. Various areas of attracting investment were compared, including bank lending, private placement of shares, initial public offering of shares, and raising venture capital. These advantages and disadvantages of each area help businesses understand which approach might be most appropriate for their specific needs. The factors influencing the choice of investment attraction strategy for commercial enterprises are considered. First of all, the company must define its goals and needs for investment, analyse the market situation, assess financial stability and solvency, and assess risks and potential profitability. Next, the company can choose the most suitable investment attraction tool in accordance with its goals and market conditions. The company METRO Cash and Carry Ukraine is analysed as one of the leaders among commercial enterprises in Ukraine. METRO Cash and Carry Ukraine uses an innovative policy of investing in economic potential, actively raising funds for automation and optimisation of activities, and uses leasing to expand its network with minimising risks. In general, attracting investment is very important for the growth of an enterprise and the successful implementation of its economic potential, the choice of investment attraction strategy is crucial for the growth of trading enterprises, helping to secure the necessary financial resources and increase their competitiveness.

Keywords: economic potential of the enterprise; trade; investment; financial analysis; enterprise development

INTRODUCTIOS

Investment is a key element in the development of a trading enterprise. Attraction of a sufficient amount of investment allow expanding business, increasing product range, introducing new technologies, and improving product quality. However, attracting investment is a complex and

competitive process that requires a trading company to carefully prepare and develop a strategy.

For modern retail enterprises, the need to attract investment is becoming particularly urgent due to the growing competition in the market, rapid changes in the tastes and

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*Corresponding author



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requirements of consumers, and the growing cost of advertising and marketing. Thus, the study of this topic is important for the economic development of commercial enterprises and the entire business as a whole (Gerasimov *et al.*, 2018).

K.I. Kurpayanidi (2020) emphasised the importance of addressing the challenges that entrepreneurs face when implementing investment projects in the industrial sector. The researcher discusses the issues of attracting investment, increasing the competitiveness of industries, developing the investment environment, and emphasises the importance of entrepreneurial potential in economic development. The results of the study provide insight into ways to improve the investment climate and promote economic growth.

Other researchers have explored approaches to improving the investment environment by developing a comprehensive approach to analysing investment attractiveness (Sabirov *et al.*, 2021). The authors discussed the problems of creating a favourable investment climate, identified factors affecting investment attractiveness, and analysed the impact of institutional reforms on investment attractiveness. Practical recommendations were also proposed to improve the investment climate by addressing issues related to institutional quality, macroeconomic stability, and human capital development.

O.O. Sosnovska & M.O. Zhytar (2018) highlight the importance of an enterprise's financial architecture for ensuring its financial security. The paper discusses the main elements of financial architecture, including financial strategy, organisational structure, financial management, and financial control. The researchers provide practical recommendations for developing a reliable financial architecture to ensure the financial security of the enterprise in the long term.

H. Dzwigol *et al.*, (2020) highlight the importance of the Industry 4.0 concept, which is an approach to the introduction of information and communication technologies in modern entrepreneurship, aimed at creating a competitive business environment in the global economy. The paper discusses the main elements of the concept, namely advanced technologies, smart manufacturing, digitalisation and automation. Industry 4.0 allows businesses to use modern information technologies to optimise processes, improve product quality, and reduce costs. The researchers provide practical recommendations for implementing Industry 4.0 in enterprises to increase their competitiveness in the global market.

E.J. Contractor *et al.* (2020) examine the impact of national legislation and the business environment on investment inflows. The researchers analysed the impact of the regulatory framework, corruption, and political instability on investment inflows, and discussed the role of institutions and governance in attracting investment.

M.B. Bulturbayevich (2021) investigated the importance of improving the mechanisms of strategic management of innovation processes in enterprises. The purpose of the study was to identify the best practices for Strategic Management of innovation processes to achieve effective operation of enterprises. The researcher focused on the

need to create and implement a comprehensive innovation management system to activate innovation processes and improve the efficiency of the enterprise.

The relevance of this particular study lies in the fact that attracting investment is an important element in the development of commercial enterprises, but the process of attracting them can be complex and competitive. However, a well-chosen strategy for attracting investment can significantly increase the economic potential of a trading enterprise and help increase its competitiveness in the market. Therefore, the purpose of this study was an investigation of ways to attract investment in the economic potential of a commercial enterprise and identification of priority areas for increasing the economic potential of a commercial enterprise.

MATERIALS AND METHODS

To achieve the goal of the study, an analysis of existing research papers on attracting investment, determining the economic potential, and development strategies of commercial enterprises was carried out. The method of statistical analysis of enterprise reporting data was used. To determine the economic potential of an enterprise, financial analysis methods were used, such as analysis of the balance sheet, income statement, analysis of profitability, liquidity, and financial stability indicators.

There are two fundamental approaches to economic potential research: analytical and survey methods. Each of these methods has its own advantages and disadvantages. Their main difference is their view of the enterprise. According to the analytical approach, the enterprise is considered more objectively due to the established approach to the assessment of the enterprise by using statistical analysis, economic and mathematical modelling, or regression analysis. However, this approach does not consider the specifics of industries, business processes, and approaches to doing business in the region. In this situation, it is correct to use a survey of business owners, company management, or stakeholders. However, given the conditions of martial law, it is a priority to apply the first approach, considering the fact that the official financial statements of the enterprise are available as of 2021.

RESULTS

Current trends in attracting investment for retail enterprises are determined by the rapid development of technologies, changes in consumer behaviour, and a growing interest in startups and innovative projects. To attract investment and support the development of their business, trading companies use a number of strategies that help them stand out in the market and attract the attention of potential investors.

One of the main trends is the active use of digital technologies to promote trading business and attract investment. With social media, e-commerce, and mobile apps, businesses can reach and interact with a larger audience. Online marketing, content marketing, and the use of video and virtual reality are becoming increasingly popular methods of attracting investment (Block *et al.*, 2021).

Another important trend is the focus on startups and innovative projects. Investors are increasingly interested in supporting innovative ideas and technologies that can change the market. Retail businesses that offer new solutions for efficient inventory management, process automation, or the development of environmentally friendly goods and services are more likely to attract investment (Sabirov *et al.*, 2021).

There is also an increase in interest in environmentally responsible and socially oriented businesses. Investors are increasingly aware of the importance of sustainability and are turning their attention to companies that adopt eco-friendly practices, reduce their carbon footprint, and produce goods and services tailored to the social needs of consumers. Such enterprises can attract investment from impact investors who want to make a financial profit, but also contribute to the development of a sustainable society (Morozova *et al.*, 2019).

New methods of attracting investment are also emerging, in particular crowdfunding, where companies can raise

funds from the general public through online platforms. This approach allows attracting small amounts from many individuals, creating a broad support base for the business. In addition, cryptocurrencies and blockchain technologies provide new opportunities for attracting investment.

An important trend is attracting corporate investments and partnerships. Many large companies actively cooperate with startups and innovative enterprises, providing financial support, expert knowledge and market access. This creates benefits for both commercial enterprises that gain resources for growth, and for corporations that gain access to new innovations and technologies (Buckley *et al.*, 2018).

There are various ways to attract investment in the market, each of which has its own advantages and disadvantages. To better understand the different ways to attract investment, Table 1 compares the advantages and disadvantages of methods such as bank lending, private placement, initial public offering (IPO), and venture capital.

Table 1. Comparison of investment attraction areas

Advantages:	Disadvantages:
Bank lending:	
<ol style="list-style-type: none"> 1. Faster access to financial resources. 2. Maintaining control over the enterprise, since creditors do not acquire rights to a share of ownership. 3. Payments and repayment schedules are set, which makes it easier to plan financial flows. 	<ol style="list-style-type: none"> 1. The need to pay interest on the loan. 2. Risk of losing future income on interest payments and loan repayments. 3. Restriction of access to credit in case of insufficient credit history or insufficient solvency.
Private placement of shares:	
<ol style="list-style-type: none"> 1. Raising capital from a limited number of investors. 2. Maintaining control over the company by retaining the majority of shares in ownership. 3. Ability to attract investments without public disclosure of financial information. 	<ol style="list-style-type: none"> 1. Difficulty finding potential private investors and negotiating with them. 2. Possibility of raising a large amount of capital is limited compared to a public offering of shares. 3. Requirement to comply with the rules and regulations related to private placements of shares.
Initial public offering (IPO):	
<ol style="list-style-type: none"> 1. An opportunity to attract significant financial resources from a wide range of investors 2. Attracting a significant amount of capital to finance business expansion, investment in new projects and increase the economic potential of the enterprise. 3. Increasing the company's profile and increasing its market share. 4. Increase investor interest and make it easier to attract future investments. 	<ol style="list-style-type: none"> 1. High costs and complexity of the IPO process, including legal, financial, and regulatory aspects. 2. Requirements for public disclosure of financial information and reporting, which may reduce the confidentiality of certain aspects of the business. 3. Loss of a certain level of control over the enterprise due to the alienation of a share of shares to new investors.
Raising venture capital:	
<ol style="list-style-type: none"> 1. Additional resources for developing innovative products, technologies, or services. 2. Access to the experience and connections of a venture investor, which can contribute to the rapid growth and development of the company. 3. The ability to raise venture capital at an early stage of enterprise development, when other sources of financing may not be available. 	<ol style="list-style-type: none"> 1. There is a high risk of losing control of the enterprise due to a large share of ownership transferred to venture investors. 2. High demands and expectations of venture capital investors for rapid growth and profitability. 3. Limited flexibility in decision-making, as venture investors can have an impact on the company's strategy and management.

Source: developed by the author based on R.M. Grant (2021), K.I. Kurpayanidi (2020) and O. Liubkina *et al.* (2019)

The choice of investment attraction method should consider the specific needs of the company, its financial stability, development strategy, and other factors that may affect the success of the project.

Identifying the main factors that influence the choice of investment attraction strategy is crucial for trading enterprises, since the success of their investment strategy depends on it. Several key factors can be identified when determining the optimal strategy for attracting investment:

1. Goals and needs of the enterprise. First of all, the company must define its goals and needs to attract investment. Whether funds are needed to expand production, launch a new product, develop marketing campaigns, or enter new markets. This will determine the required amount of investment, and the time horizon, priorities, and risks that the company is willing to accept.

2. Market situation. Analysis of the market situation is an important step in choosing a strategy for attracting investment. It is necessary to consider market conditions, the degree of competition, changes in consumer trends, technological innovations, and other factors that may affect the success of an investment project. Taking these factors into account will help the company choose the best investment attraction strategy that meets the needs of the market.

3. Financial stability and solvency. Investors pay great attention to the financial stability and solvency of the enterprise. Before attracting investment, the company must assess its financial situation, including profitability, liquidity, debt, and overall financial condition. This will help

determine how attractive an enterprise can be to potential investors and what investment attraction strategy to choose.

4. Risks and profitability. It is important to assess the risks associated with an investment project and potential profitability. Investors are looking for a high level of return on their investment, but they also consider the possible risks associated with the project. Therefore, the company must ensure an adequate risk assessment and establish an investment attraction strategy that balances profitability and risks for potential investors.

5. Selection of investment attraction tools. Based on the above factors, the company can choose the most suitable tool for attracting investment. These can be conventional methods such as issuing stocks, bonds, or bank loans, or modern approaches such as crowdfunding, corporate investment, venture capital, or token placement through blockchain technology. The choice of instrument should consider the company's goals, market conditions, and investment needs

One of the leaders among large commercial enterprises in Ukraine is the company METRO Cash and Carry Ukraine, based on which the attraction of investment in economic potential was analysed. The analysis of economic potential should be carried out by its components, among which it is worth starting with the technical one. Here it is worth considering the dynamics and structure of assets and liabilities in the balance sheet. Thus, there was an increase in the introduction of intangible assets for the period 2018-2021 almost three times from UAH 7,532 thousand (2018) to UAH 27,660 thousand (2021) (Fig. 1).

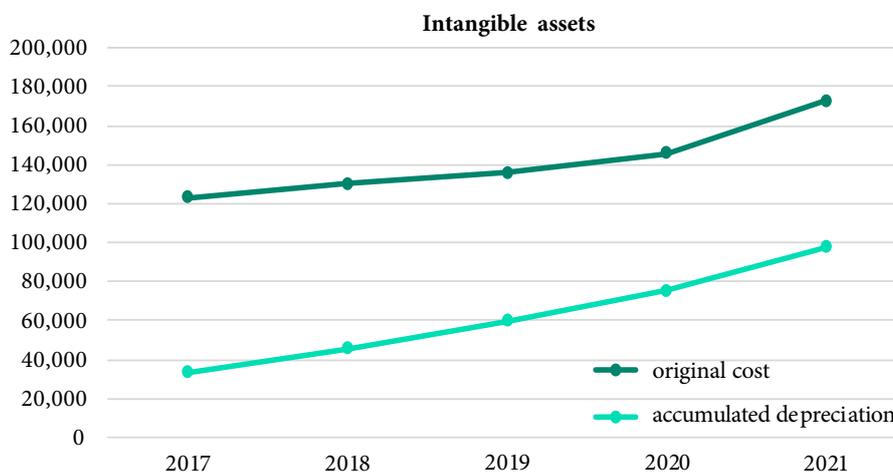


Figure 1. Dynamics of intangible assets of METRO Cash and Carry Ukraine

Source: developed by the author based on Official reporting of METRO Cash and Carry Ukraine (n.d.)

The dynamics of intangible assets allows providing preliminary conclusions that the company used these funds for licenses and programmes, which indicates an increase in investment in the information component of the economic potential and at the same time will be reflected at the professional level of the company's personnel, especially administrative ones. The next step was to consider capital investments in progress (Fig. 2).

Capital investments in progress as an indicator indicates the dynamics of changes in the technical and technological component of the economic potential. This dynamic indicates the expansion of the network, and the modernisation/expansion of existing facilities. This allows for the conclusion that the role of the technical component of the economic potential for activities has been increased almost 5 times.

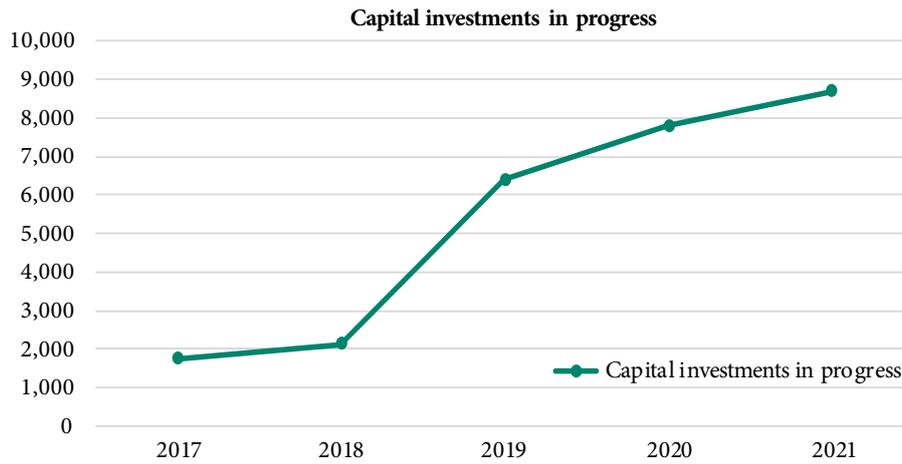


Figure 2. Dynamics of capital investments in progress at METRO Cash and Carry Ukraine

Source: developed by the author on the basis of Official reporting of METRO Cash and Carry Ukraine (n.d.)

This is also confirmed by the dynamics of fixed assets (Fig. 3). If the company's land resources received UAH 34,000 thousand for the year, then office equipment revenues increased from UAH 116,128 thousand in 2018 to UAH 257,754 thousand in 2021. These data indicate the

process of automating activities and optimising business processes in the enterprise.

This approach corresponds to the policy of building economic potential through technical and informational components.

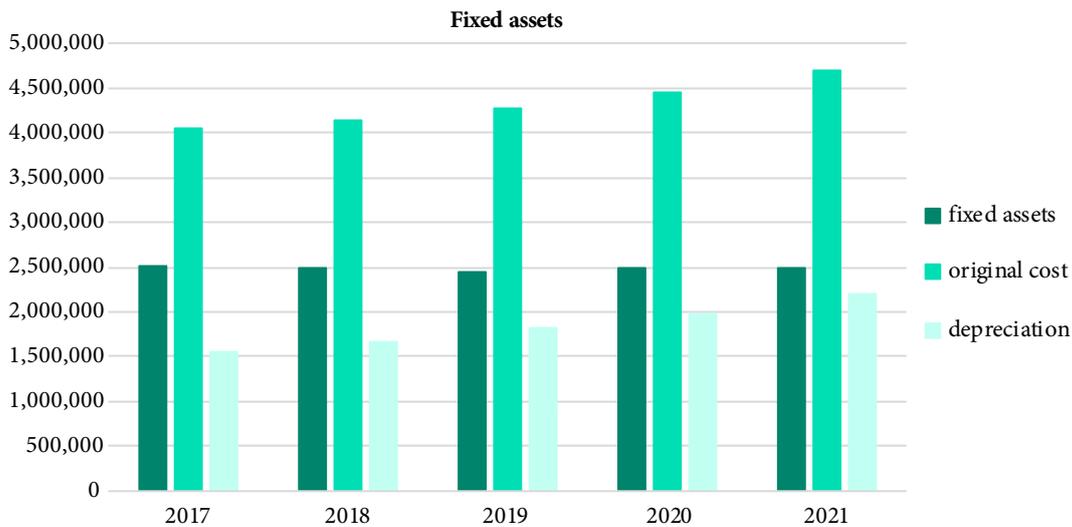


Figure 3. Dynamics of fixed assets of METRO Cash and Carry Ukraine

Source: developed by the author on the basis of Official reporting of METRO Cash and Carry Ukraine (n.d.)

Assessing the state of fixed assets, there are stable dynamics of updating fixed assets, characterised by an increase in the initial cost. At the same time, during the selected period, the wear and tear of equipment and the initial cost increased by about UAH 600,000 thousand.

This approach points to a policy of optimising the costs associated with updating unsuitable fixed assets through clear current control.

Next, it is necessary to analyse the dynamics of changes in cash flows (Fig. 4)

The dynamics of the balance sheet indicator “Money and its equivalents” is quite contradictory. The trading industry has a policy of maximising the attraction of funds to the product in order to generate income. As of 2022, the dynamics of accumulation of free funds is monitored, which indicates either the approach of closing terms for long-term loans, or an increase in solvency before the interruption of attracting large amounts of funds (new points or large batches of goods from abroad). When evaluating financing, long-term liabilities should also be considered (Fig. 5).

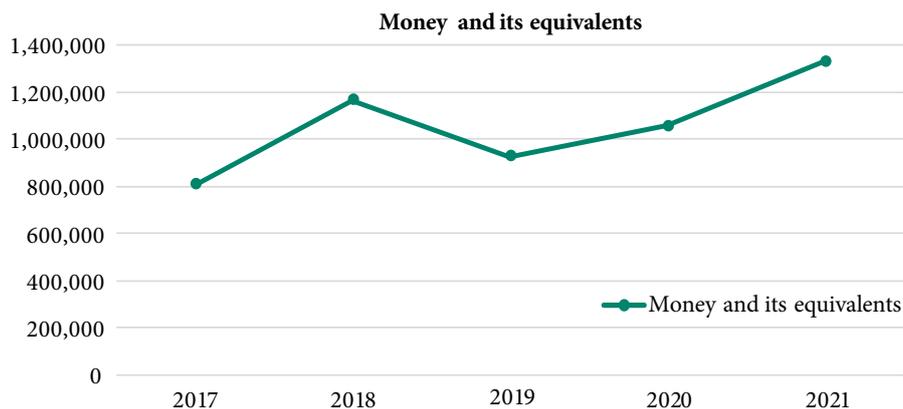


Figure 4. Dynamics of monetary assets of METRO Cash and Carry Ukraine

Source: developed by the author on the basis of Official reporting of METRO Cash and Carry Ukraine (n.d.)

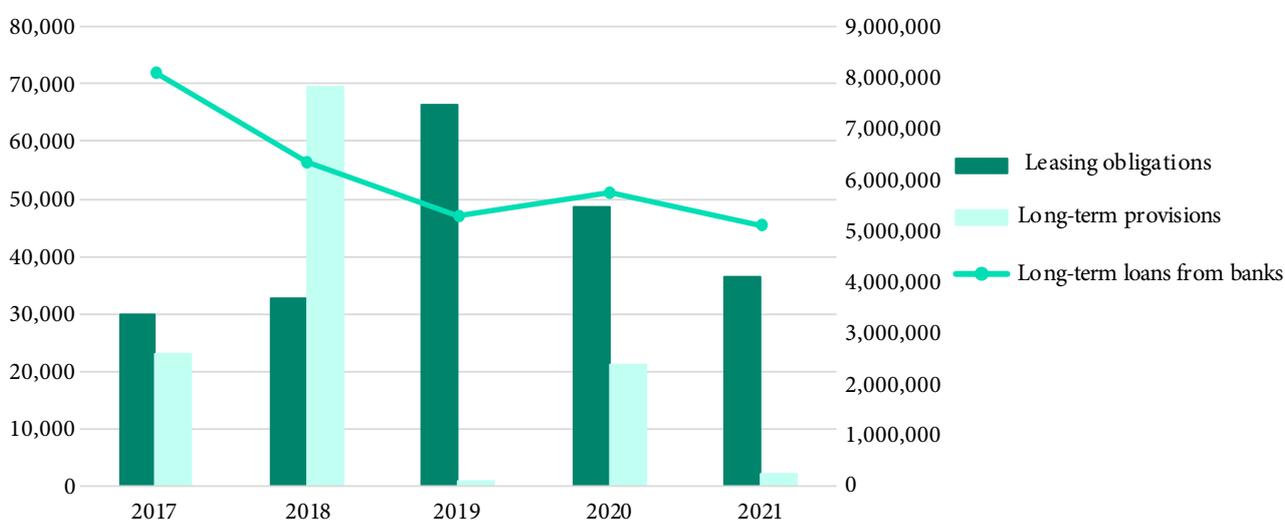


Figure 5. Dynamics of long-term financial support for METRO Cash and Carry Ukraine

Source: developed by the author on the basis of Official reporting of METRO Cash and Carry Ukraine (n.d.)

There is a certain feature of the indicators of long-term financial support of METRO Cash and Carry Ukraine, which include leasing obligations, which is not a typical solution in the trade industry of Ukraine. This approach indicates the development of the managerial component of the economic potential associated with reducing risks and financial costs. Returning to the analysis of assets, this approach indicates that the company is developing new retail outlets, while minimising the cost of launching them.

Summing up the above, METRO Cash and Carry Ukraine applies an innovative policy of investing in economic potential, which consists in actively attracting funds to processes and tools for automating activities and optimising costs. At the same time, to expand the existing network, the approach of attracting leasing is chosen to minimise economic risks.

DISCUSSION

S. Asongu *et al.* (2018) examined important determinants of foreign direct investment in the fast-growing economies of BRIC (Brazil, Russia, India, and China) and MINT

(Mexico, Indonesia, Nigeria, and Turkey). The study revealed important factors that influence the attraction of foreign investment to these countries. Although the region is remote from Ukraine, however, the approach that was to minimise the role of the state with the development of infrastructure has its place in the post-war economy.

N. Bailey (2018) examined the relationship between institutional factors and the attractiveness of foreign direct investment. Although the study included a meta-analytical review of research on this topic, the conclusions were contradictory. The importance of the legal and institutional framework for attracting investment is noted, and in the case of weak institutions, risks should overlap with profitability. However, this approach requires basic development of state institutions. In the case of countries with a high development of corruption, such theses remain questionable.

An important issue is improving ways to increase a favourable investment environment that promotes business development and investment attractiveness. This approach allows ensuring the arrival of investments in the regions for

a long period and in a larger volume (Sabirov *et al.*, 2021). For the case where corruption risks dominate among entrepreneurial ones, R. Kgoroadira *et al.* (2019) conducted an important study of online small business crowdfunding. As a result, the factors that affect the financing of small businesses through crowdfunding were identified.

Also important in this area is the work of J.H. Block *et al.* (2021), which compares two markets for entrepreneurial financing of the future – crowdfunding and initial coin offering (ICO). The study reveals the difference between these two forms of financing and their impact on entrepreneurship. Another important aspect that was overlooked is the possibility of implementing such an approach to investment in corrupt economies or economies with a high share of illegal business.

K. Brockova *et al.* (2021) examined the economic mechanism for optimising the programme of innovative investments in the development of agricultural production. The authors investigated what factors influence the development of innovative programmes in agriculture. It is important to clearly pay attention to industry specifics as an important element of the success of the enterprise and consider investments and innovation programmes in the context of a component of the economic potential of the enterprise.

P.J. Buckley *et al.* (2018) conducted an important retrospective analysis and a fundamental basis for future research on Chinese foreign direct investment. The study reveals the peculiarities and trends of China's investment activity, taking into account its reforms and the political specifics of the regime. An important stage here is the analysis of investment in the context of the dominance of politics in the economy, and a specific regime with regional corrupt elites.

T.H. Chen *et al.* (2019) analysed the relationship between the investor's personality and the results of their investment. The study used statistical methods and machine learning to investigate this relationship. Its results contain many important conclusions for the development of investment culture, but do not address in detail the reasons for the failure of investments. Continuing this topic, H. Dzwigol & M. Dzwigol-Barosz (2020) investigated the sustainable development of the company on the basis of an expert assessment of the investment strategy, an important element of which is the analysis of the potential of the enterprise and the ability of management personnel to realise the accumulated potential.

B.N. Gerasimov *et al.* (2018) identified factors of economic potential of trading companies based on a modular approach. The researchers investigated various potential modules and identified the factors that affect them. Continuing the study of economic potential, it is worth focusing on the paper by Ş.C. Gherghina *et al.* (2020), which analyses the potential of small and medium-sized enterprises as an engine of economic growth through investment and innovation. The research focuses on the role of investment and innovation potential of the Ministry of social policy of Ukraine in economic development. Investment issues are also considered by R.M. Grant (2021). This study covers

various aspects of strategic management and may include analysis of investment strategies.

Returning to the role of the state, S. Haggard (1997) examined business theories and the state in developing countries in the context of economic development. An important element here is to focus not only on the role and functions of the state, but also on the role of business as a driving force for change in the development of economic potential.

In addition to the role of the state, it is worth considering the concept of globalisation. L. Karpenko & P. Voronzhak (2018) explored the basic alternatives and paradigm of investment development, considering globalisation changes and European integration. The opposite of this is the study by M.A. Witt (2019), dedicated to the analysis of the process of de-globalisation and its impact on business and trade.

L. Kurznack *et al.* (2021) and O. Liubkina *et al.* (2019) have done important work to develop a long-term value creation model, considering various factors such as financial results, social responsibility, and environmental sustainability. An important element of these studies is the review of financial instruments that stimulate the innovation activity of enterprises and suggest ways to improve them.

Review work by I.A. Morozova *et al.* (2019) allows assessing at a fundamental level the role of economic potential on the sustainable development of global entrepreneurship, its development and dynamics. Concluding the issue of investment and sustainable development, it is worth noting the contribution of J.M. Puauschunder (2019). The researcher explored the issues of long-term investment in the potential of an enterprise using the approach of sustainable development and partnership to achieve the UN Sustainable Development Goals.

Summing up the views of previous authors, it should be noted that the issue of investing in economic potential has received a dualistic assessment. For one group of authors, this is the result of a well-coordinated institutional policy and the development of the state. For others, it is an element of an exclusively entrepreneurial nature that reflects the riskiness of entrepreneurship. At the same time, when talking about investments, classical approaches dominate the studies, while poorly developed or corrupt economies have been able to attract investment funds through crowdfunding platforms or by implementing cryptocurrencies. In the context of this study, the author agrees with the opinion of B.N. Gerasimov *et al.* (2018). Although the research approach is different, both results are equally effective.

CONCLUSIONS

Thus, the issue of attracting investment to the economic potential is an important component for the growth of the enterprise. The economic potential within the enterprise allows using the available resources of the enterprise as efficiently as possible. Approaches to attracting investment should be considered in the context of the needs of the enterprise, its size and scope of activity. In the case of commercial enterprises, it is advisable to attract bank lending or place a share. Identifying investment attraction strategies is

crucial for increasing the economic potential of a trading enterprise. Investments can provide the necessary financial resources for the development of the enterprise, the introduction of new technologies, the expansion of sales markets, and increasing competitiveness.

Before choosing a strategy for attracting investment, a trading company should conduct a detailed analysis of its current state, development potential, and financial needs. This will help determine the optimal strategy that will meet the specific needs of the enterprise. In the case of METRO Cash and Carry Ukraine, a combined investment option was chosen in the economic potential, which consists in attracting long-term loans in UAH and EUR to expand the

existing network and modernise it, along with short-term loans and leasing for automation, and changes in customer service business processes. In further research, it is worth reviewing approaches for enterprises of all sizes in Ukraine and comparing them with the practice in the EU, Latin America, and "Asian Tigers". A separate issue is conducting a survey among enterprises in the context of this study.

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CONFLICT OF INTEREST

None.

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Анна Володимирівна Лой

Аспірант

Державний торговельно-економічний університет

02156, вул. Кіото, 19, м. Київ, Україна

<https://orcid.org/0000-0002-4092-887X>

Визначення стратегій залучення інвестицій для збільшення економічного потенціалу торговельного підприємства

Анотація. У сучасних умовах глобалізації та швидкого розвитку ринкової конкуренції, ефективне залучення інвестицій стає критичним фактором успіху для підприємств у торговельній сфері. Метою даної роботи є аналіз шляхів залучення інвестицій у розвиток економічного потенціалу торговельних підприємств та обґрунтування напрямів для розвитку потенціалу. У ході дослідження використані методи статистичного аналізу даних звітності підприємств, методи абстрагування та узагальнення. У статті розглянуто такі стратегії, як активне використання цифрових технологій для просування бізнесу, спрямованість на стартапи та інноваційні проекти, екологічна відповідальність та соціальна орієнтація бізнесів, нові методи залучення інвестицій, такі як краудфандинг та використання криптовалюти та блокчейн технологій, а також залучення корпоративних інвестицій та партнерств. Здійснено порівняння різних напрямів залучення інвестицій, включаючи банківське кредитування, приватне розміщення акцій, ініціальне публічне розміщення акцій та залучення венчурного капіталу. Вказані переваги і недоліки кожного напрямку допомагають підприємствам зрозуміти, який підхід може бути найбільш підходящим для їх конкретних потреб. Розглянуто фактори, що впливають на вибір стратегії залучення інвестицій для торговельних підприємств. Перш за все, підприємство повинно визначити свої цілі та потреби щодо інвестицій, аналізувати ринкову ситуацію, оцінювати фінансову стійкість та платоспроможність, а також оцінювати ризики та потенційну рентабельність. Після цього підприємство може обрати найбільш відповідний інструмент залучення інвестицій відповідно до своїх цілей і ринкових умов. Проаналізовано компанію "METRO Cash and Carry Ukraine" як одного з лідерів серед торговельних підприємств України. Компанія "METRO Cash and Carry Ukraine" використовує інноваційну політику інвестування в економічний потенціал, активно залучаючи кошти для автоматизації та оптимізації діяльності, а також використовуючи лізинг для розширення своєї мережі з мінімізацією ризиків. Загалом, залучення інвестицій є дуже важливим для зростання підприємства та успішної реалізації його економічного потенціалу, вибір стратегії залучення інвестицій має вирішальне значення для росту торговельних підприємств, допомагаючи забезпечити необхідні фінансові ресурси та підвищити їхню конкурентоспроможність.

Ключові слова: економічний потенціал підприємства; торгівля; інвестування; фінансовий аналіз; розвиток підприємства

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Olena Shandrivska*

PhD in Economics, Associate Professor
Lviv Polytechnic National University
79000, 12 Stepan Bandera Str., Lviv, Ukraine
<https://orcid.org/0000-0002-4335-2423>

Yana Kizlyak

Lviv Polytechnic National University
79000, 12 Stepan Bandera Str., Lviv, Ukraine
<https://orcid.org/0000-0002-6461-7128>

Features of the functioning of express delivery market in Ukraine during the war

Abstract. The express delivery market is one of the most dynamic sectors of the economy, without which the effective functioning of business, e-commerce, retail, etc., is impossible. Under the influence of external factors, such as the military invasion of the territory of Ukraine by the Russian Federation in 2022, the parameters of the activity of express delivery market operators have changed, which actualises the issues of analysing the performance indicators of the express delivery market and studying changes in consumer behaviour in the field of express delivery services. The purpose of the study is to present the results of a comprehensive investigation of the features of transformation of the Ukrainian express delivery market in conditions of instability. To achieve the research goal, a set of scientific methods was used: system, statistical analysis, and index method. To identify changes in the structure of needs of consumers of express delivery services in the context of disturbances, a marketing study and an express survey of end users were conducted. The dynamics of the development of the Ukrainian express delivery market during a full-scale war is studied in terms of identifying the competitive positions of enterprises in the segment and distributing “market power” among the participants of the market under study. The enterprises that form the “core” of the market and their role in shaping the intensity of competition in the express delivery market in Ukraine are identified. The results of a marketing study on changes in consumer purchasing behaviour during the war in Ukraine are presented and the profile of the target audience of services before and during the war is established. The high adaptive capacity of enterprises providing express delivery services to conditions of instability in terms of restoring operational activities and adjusting the parameters of logistics activities in accordance with changes in the needs of consumers was noted. Consumer needs, business digitalisation, and life safety remain the determining factors for the development of the sector under study in the context of disturbances. The results can be applied in practice by the heads of the marketing and logistics department, the planning and economic department of enterprises in the express cargo transportation sector, and interested groups of stakeholders in the express cargo delivery market

Keywords: express transportation; economic environment; concentration; marketing research; end users

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*Corresponding author



INTRODUCTION

The express cargo delivery market plays an important role in the modern economy and is necessary for the efficient operation of many industries. This sector is one of the most dynamic and essential components of economic development. However, a full-scale invasion of the territory of Ukraine poses significant challenges for the postal and logistics sector. Military operations and possible threats of missile strikes impose restrictions on the work of logistics companies. The Russian invasion caused global changes around the world. One of them is the transformation of the logistics sector and the distribution of supply chains. This became the basis for increased competition in the express cargo delivery market, complication of logistics of export-import operations, decrease in the efficiency of logistics supply chains of express cargo in territorial markets close to the war zone and uncontrolled territories. Consequently, it actualises the need to investigate the severity of competition in the express cargo delivery market in Ukraine during riots. The relevance of the study of individual needs of consumers of express services through marketing research is caused by the need to adapt companies to changes in the market conditions for express cargo delivery and optimisation of business processes with prioritisation of conditions for ensuring the safety of enterprises in this market.

Study of the problems of the express cargo delivery market is the field of research interests of many researchers around the world. In particular, A. Gautam & P. Pareek (2022) indicate that the demand for express delivery of goods through e-commerce channels has increased rapidly since the 2000s, and this trend has increased significantly due to the ongoing coronavirus pandemic. Given the situation, the requirements for predicting demand for express delivery through e-commerce channels and evaluating applied logistics solutions are expanding. However, they do not consider alternative express cargo delivery routes and their specifics, which customers encounter when placing orders through e-commerce channels.

Given the relevance of applying the principles of sustainable development, and one of its main components – environmental development, for express cargo delivery companies that consider operational cycles from the moment of identifying the demand for express cargo delivery to the stage of recycling packaging waste after the consumption of services, the study by H. Duan *et al.* (2019), who investigated the outlined issues in China, is of value. Authors D. Lazarević *et al.* (2020) assessed the demand for round-the-clock courier delivery services in Belgrade, the so-called “post express nonstop”, and predicted potential demand based on the bass diffusion model, considering the environmental factor.

The topics of innovative solutions in the development of “last mile” delivery in the e-commerce market in cities from the standpoint of various stakeholders are outlined in the paper by M. Kiba-Janiak *et al.* (2021). The researchers analyse new technological and organisational solutions,

such as autonomous vehicles, crowd delivery, parcel storage rooms, and focus mainly on analysing the behaviour of electronic customers.

I. Cárdenas *et al.* (2017) analysed the spatial distribution of e-commerce supplies in Belgium. Using comparative analysis technologies, the authors compared the consumption of e-commerce services per capita in rural areas with the country’s cities.

Marketing technologies for market segmentation were used A. Griva *et al.* (2022). These researchers analysed the features and ways to improve the consumer segmentation system using e-commerce data on courier delivery in Greece. Customer segmentation was performed based on order information and geographical location to identify consumer segments with similar characteristics.

O. Fedirko *et al.* (2021) analysed the nature of socio-economic effects of e-commerce in Ukraine, Poland, and Austria using the Cobb-Douglas mathematical model and Markov chain methodology. The study showed a significant positive impact of e-commerce on employment and gross domestic product in three countries.

This allowed the authors of this paper to form the goal of the study – to present the results of a comprehensive investigation of the specifics of transforming the functioning of the Ukrainian express cargo delivery market in conditions of disturbances. The objectives of this study were:

- conduct research on the express cargo delivery market and determine the concentration levels of the express cargo delivery market based on a quantitative assessment of competition levels in the industry;
- identify changes in the behaviour of the consumer of express services under the influence of war based on a marketing study of consumer behaviour in the market of express cargo delivery in war conditions;
- develop directions for adapting the activities of express cargo delivery network operators to disturbances in order to ensure the safety of functioning and restore the operational efficiency of the defined networks.

LITERATURE REVIEW

The dynamics of the development of the logistics services market and its segment of express cargo delivery under the influence of various dominant factors (in the context of the financial crises of 2008-2009, digitalisation of the economy, the impact of the pandemic, etc.) were considered by a significant number of Ukrainian researchers.

Authors O. Shandrivska *et al.* (2014) structured express cargo delivery services in Ukraine, considering the offer of services in a highly competitive environment. Scientific contribution of O. Shandrivska *et al.* (2015) was supplemented by an analysis of the segment of express cargo delivery in Ukraine in stable operating conditions, according to which the authors focused on identifying the problems of segment development with further development of recommendations for improving the activities of enterprises, in particular, on the use of progressive forms of customer

service and proposed technical, technological, organisational, and economic areas for ensuring the improvement of the activities of express cargo delivery service providers.

I. Romanych (2018) studied such a criterion for the quality of services of a postal and logistics company as the speed of delivery of postal items in terms of assessing the attitude of consumers to it. The results were the identification of parameters of the quality of the postal and logistics company's service that are not related to the speed of delivery. Forms for calculating and accounting for the quality parameters of service provision by a postal and logistics company are constructed. Current trends and innovative technologies for the development of postal and logistics services in Ukraine are outlined. The researcher also presented a conceptual model for optimising the operational activities of a postal and logistics company, in which he provided a comparative description of socio-economic and e-commerce factors affecting the operational activities of a postal and logistics company (Romanych, 2019).

O. Prokopenko *et al.* (2016) investigated modern internet platforms for providing logistics services in Poland and Ukraine and carried out a comparative analysis of the features of e-commerce in these countries. As a result of the analysis, such advantages of the development of e-commerce as the growth of sales of goods via the internet due to increased consumer confidence in e-commerce; saving money and time by transaction participants; accelerating the exchange of information due to the logistics information system, which also allows minimising inventory, increasing capital turnover, and reducing logistics costs of producers were identified. The most popular internet platforms have been installed in Poland (Allegro) and Ukraine (Aukro). It is argued that the development of modern online trading platforms, which are a promising alternative to traditional logistics tools, is a driver for the development of the express cargo delivery sector in the analysed countries.

Substantiation of the conditions for the emergence of a synergistic effect in the supply chains of consumer goods of special dimensions was considered by L. Yakymyshyn (2017). In the paper, the researcher claims that new opportunities for the development of the logistics services market sectors are provided by IT technologies that support innovative solutions provided by technical and organisational systems, which include: electronic data interchange (EDI), electronic systems for monitoring and tracking moving stock (GPS) and supplies (tracking and control), automatic identification of goods, integrated information systems, etc. In terms of cargo handling, flowlogistics, cross-docking, and e-commerce systems are offered for use. The researcher concludes that the primary importance in the process of creating or improving an existing supply chain should be assigned to the identification of consumer needs and features of the market that serves a particular supply chain. It is recommended to expand the cooperation of consumer goods producers with major logistics operators, since the

supply chain formed in this way gains competitive advantages in establishing partnerships between supply chain participants (Yakymyshyn, 2017).

Features of logistics management of the warehouse system of an express cargo delivery enterprise were studied by N. Ptytsia & K. Kovtsur (2022). The researchers argue that the mechanism of operation of express delivery ensures uninterrupted logistics services to consumers, which in modern market conditions should be ensured by the efficient operation of the warehouse at express delivery enterprises, the working conditions of which are not fully investigated. As suggestions, the authors proposed parameters of the warehouse operation that consider the specifics of the logistics management of the express cargo delivery system.

O. Taranenko (2020) investigated trends in the development of the express delivery market in Ukraine. The subject of the study was courier and postal services that provide express delivery services. It is established that despite the negative trends in the Ukrainian economy, the e-commerce market continues to develop rapidly as an alternative to self-employment of the population in quarantine. Based on the application of the five forces competition model by M. Porter (1985), the main threats in the transportation market are analysed.

Authors L. Hlinenko & Y. Daynovskyy (2018) and Y. Petrunya & T. Pasichnyk (2018) examined e-commerce business models in Ukraine and the impact of e-commerce on changing traditional supply chains. E-commerce is seen by these authors as the driving force behind retail. Consequently, the effect of complementary development of adjacent and tangential industries is fully consistent with the concept of complementary development of the territories adjacent to the transport system developed by Y. Krykavskyy *et al.* (2020).

A. Dieke *et al.* (2021) investigated the changing needs of consumers of postal services and evaluated the provisions for improving the quality of postal services in the EU (Directive of the European Parliament and of the Council 97/67/EC, 1997), considering the digitalisation of business (expansion of broadband, digital skills of end users and enterprises; readiness of government agencies to implement e-government applications). Based on the results of the analysis, recommendations are given to increase the value of postal services for the end user by ensuring the universality of postal services, improving the quality level, regulating prices, competitive conditions, and access to the postal services market.

O.Ya. Kobylukh & O.B. Hirna (2022) investigated the main trends in the express cargo delivery market and, in order to harmonise the activities of express delivery market operators, developed a number of recommendations for the successful functioning of the sector's enterprises in crisis situations.

Despite the diversity of the conducted research, the issues of specific transformation of the functioning of the Ukrainian express cargo delivery market in conditions of

disturbances, isolation of dominant factors influencing the development of the express cargo delivery market in war conditions, identification of the main competitive advantages against the background of increased competition and the dominance of counterparties in the core of the market under study remain insufficiently covered; identification of actual requirements of consumers of express cargo delivery services based on primary marketing information.

MATERIALS AND METHODS

To achieve the purpose, a set of scientific methods that ensured the conceptual integrity of the study was used, in particular: systematic – to highlight the general principles of the functioning of the Ukrainian market for express cargo delivery; comparative and statistical analysis of the results of enterprises' activities by type of economic activity in accordance with the classification of types of economic activity (Order of the State Consumer Standard of Ukraine No. 457, 2010): sections H "Transport, warehousing, postal and courier activities", in particular, sections H 49.2, H 49.4; H 49.5; H 50.2; H 50.4; H 51.2; H 52.1; H 52.2; H 53.2 – to investigate the dynamics of development of enterprises of the Ukrainian express cargo delivery market; index method – to assess the concentration levels of the Ukrainian express cargo delivery market.

To determine the market share of express cargo delivery, which is occupied by a separate enterprise, the equation was applied:

$$S_i = \frac{D_i}{M}, \quad (1)$$

where D_i – net income from sales of products by a separate enterprise, thous. UAH.; M – capacity of the Ukrainian express cargo delivery market, thous. UAH.

To assess the level of concentration of the Ukrainian express cargo delivery market, the Herfindahl-Hirschman index was used, which is determined by the equation:

$$HHI = \sum_{k=1}^n p_k^2, \quad (2)$$

where p_k^2 – market share of the k-th enterprise in the express cargo delivery market, %; n – number of firms for which the indicator is calculated, units; $k = 1, \dots, n$.

According to the results of the assessment, the market for express cargo delivery is considered low-concentrated if the $HHI < 0.1$. If the $HHI < 0.18$, then the market under study is moderately concentrated. If the HHI index values are > 0.18 – the express cargo delivery market will be considered highly concentrated. An alternative to the Herfindahl-Hirschmann index is the market concentration coefficient, which is calculated using the equation:

$$IPK = \sum_{k=1}^n p_k. \quad (3)$$

If the value of this coefficient approaches 100%, the express cargo delivery market will be characterised by a high level of monopolisation, and if the index is close to zero, then the express cargo delivery market will be considered competitive.

The paper calculates the market concentration coefficient for Nova Poshta LLC, Ukrposhta JSC, and Meest Express Trading House LLC.

The Lind index was calculated to determine the number of enterprises that dominate the express cargo delivery market (the boundaries of the oligopoly). This index is used to identify leading companies in the express cargo delivery market and track the emergence of monopolists. The Lind index for two businesses is determined by the equation:

$$IL2 = \frac{p_1}{p_2} \cdot 100\%, \quad (4)$$

where $IL2$ – Lind index for two businesses in the sector; p_1 – market share of the first enterprise, %; p_2 – market share of the second enterprise, %.

The Lind index for three enterprises in the express cargo delivery sector is determined by the equation:

$$IL3 = \frac{1}{2} \cdot \left(\frac{s_1}{\frac{p_2+p_3}{2}} + \frac{p_1+p_2}{p_3} \right). \quad (5)$$

The Lind index for four enterprises is determined by the equation:

$$IL4 = \frac{1}{3} \cdot \left(\frac{s_1}{\frac{p_2+p_3+p_4}{3}} + \frac{p_1+p_2}{\frac{p_3+p_4}{2}} + \frac{p_1+p_2+p_3}{p_4} \right). \quad (6)$$

The index is calculated to the value $L_{m+1} > L_m$, which is called "violation of the continuity of the indicator L ", that is, before the calculation of a small share of the enterprise in the express delivery market.

The Gini coefficient is calculated to determine the degree of uneven income of enterprises with express cargo delivery, which reflects the degree of deviation of the value of the actual distribution of shares of experimental enterprises in the express cargo delivery sector from the value of the uniformity of the distribution of shares. As the values of the Gini coefficient approach unity, the distribution of income of enterprises in the express cargo delivery sector becomes more uneven.

The Gini coefficient is determined by the equation:

$$G = 1 - 2X \sum_{i=1}^n x_i X_{cum} y_i + \sum_{i=1}^n x_i X y_i, \quad (7)$$

where x_i – share of the i-th enterprise in their total number; y_i – share of the i-th enterprise's revenue in the structure of the express cargo delivery market capacity.

To identify the change in the structure of needs of consumers of express delivery services in the context of disturbances and identify the profile of the target consumer of express delivery services, the following methods were used: an express survey of 135 respondents in four regions of Ukraine in the period from September 4 to October 7, 2022, based on a form created using Google Forms and

shared on social media such as Instagram, Telegram, and Viber. The geographical breadth of the study consisted of all regions of the country, of which the largest number of participants was from the Western region (70%), the rest from the Central region (20%), the Southern region (5%), and the Northern region (5%).

The main questions asked to respondents included the following:

1. How often did you use express delivery services before the full-scale invasion?
2. Which express delivery service operator did you prefer before the full-scale invasion?
3. For what needs did you use express delivery services before the full-scale invasion?
4. Did you use express delivery services in the first days after the full-scale invasion?

5. Which express delivery service operator did you prefer after the full-scale invasion?

6. How often did you start using express delivery services after three months of full-scale intrusion?

7. What needs do you use express delivery services for after a semi-large-scale invasion?

Marketing research was conducted in accordance with the rules of the Helsinki Declaration (2013). During the survey, the authors observed all ethical standards when working with people. The survey was conducted on the basis of anonymity and confidentiality, so that the results of the survey are used in a generalised form, and with the consent of the person concerned in the processing of personal data. An integral component of the development of a marketing survey is the development of marketing research hypotheses, which are presented in Table 1.

Table 1. Goals, questions, and hypotheses of marketing research of the needs of consumers of express cargo delivery services in war conditions

Study objectives	Hypothesis
1. Identify the features of the transformation of demand for express cargo delivery services, investigate the structure of shipments, and determine which operator of express delivery services consumers preferred before and during the invasion (during the “shock” and after it).	1. The use of such methods of collecting primary information as surveys and monitoring the actions and behaviour of consumers of express cargo delivery should reveal the specifics of consumer preferences in terms of identifying needs that are met with express delivery, the structure of orders, and the characteristics of regular consumers before and during the war. In addition, it will help identify the parameters of the target profile of the consumer of express cargo delivery services before the war and change their behaviour during the “shock” from the war and after it.
2. Identify the profile of the target audience (observation and survey at the points of delivery of express orders to consumers) before and after the war.	2. The experience of studying the specifics of the express cargo delivery market, the analysis of the literature on the research topic and the results of marketing research on the needs of individual consumers of express cargo delivery services and in-depth interviews with the heads of express cargo delivery departments allowed the authors of the study to assert that the express cargo delivery market is closely connected with the field of e-commerce. Therefore, it is expected that the share of online orders for the B2C sector will prevail in the structure of cargo turnover for the segments (B2B; B2C; C2C; B2G; D2C). The share of orders to meet individual needs is expected to decrease in favour of increasing the flow of humanitarian and military cargo, considering war adjustments.

Notes: B2B – business-business relationship; B2C – business-consumer relationship; C2C – consumer-consumer relationship; B2G – business-government relationship; D2C – direct sales

Source: developed by the authors

Quantitative assessment of factors and trends in the development of the Ukrainian express cargo delivery market is supplemented by a qualitative assessment of the subject of research.

RESULTS AND DISCUSSION

Estimates of the concentration of the Ukrainian express cargo delivery market. In accordance with the results of the study by P. Klaus & C. Kille (2007), the express cargo delivery sector is a structural segment of the logistics services market that specialises in providing logistics services for parcel delivery, courier services, and specialised express transportation.

In 2020, the global express delivery market capacity was estimated at USD 262.86 billion (Express delivery global market report, 2023). In the same year, the capacity of this market in Ukraine reached UAH 28.2 billion (State Statistics Service of Ukraine, n.d.) that is, USD 1.046 billion

at the average annual exchange rate of the National Bank of Ukraine (NBU) for 2020. Accordingly, the share of the Ukrainian express cargo delivery market in the global express cargo delivery market is 0.4%. In 2021, the global express delivery market capacity was USD 279.68 billion (Express delivery global market report, 2023), while the same indicator in Ukraine amounted to UAH 34.4 billion or USD 1.26 billion at the average annual exchange rate of the NBU for 2021 (State Statistics Service of Ukraine, n.d.). That is, the authors of this study calculated that the share of the Ukrainian express cargo delivery market in the world market reached 0.45%, which in comparison with the previous period indicates an increase of 0.05%.

The Ukrainian express cargo delivery sector is one of the most sensitive industries regarding the impact of external disturbances. Such disturbances include the consequences of the global financial crisis of 2008-2009, the spread of the pandemic, and the invasion of Ukraine by

the Russian Federation. However, despite the above-mentioned factors of influence, the express delivery market has a high growth potential in the face of disturbances. This is confirmed by the growth of the express cargo delivery market capacity during 2020-2021: the capacity of the express cargo delivery market in 2020 amounted to 432 million shipments worth UAH 28.2 billion, while in 2021 the vol-

ume of shipments increased by 15.97% and amounted to 501 million shipments worth UAH 33.4 billion (State Statistics Service of Ukraine, n.d.).

The analysis of the capacity of the express cargo delivery market and the shares of the five main counterparties-leaders of the express delivery market is presented in Table 2.

Table 2. Analysis of the capacity of the express cargo delivery market and the share of counterparties in Ukraine, thous. UAH

No.	Enterprise	Net income from sales of products and the company's share, thous. UAH.				Relative deviation of net income 2021/2020, %
		2020	%	2021	%	
		1	Nova Poshta LLC	16,902,857	59.94	
2	Ukrposhta JSC	9,180,000	32.55	11,200,000	32.56	122.00
3	Meest Express Trading House LLC	353,082	1.25	451,752	1.31	127.95
4	Delivery LLC	244,592	0.87	265,685	0.77	108.62
5	Just In LLC	36,192.7	0.13	133,521.6	0.39	368.92
6	Other	1,483,276.3	5.26	1,505,539.4	4.38	101.50
7	Capacity of the express cargo delivery market	28,200,000	100	34,400,000	100	-

Source: calculated according to the State Statistics Service of Ukraine (n.d.), Delivery Group (n.d.), Justin (n.d.), Meest Express (n.d.), History of “Nova Poshta” company (n.d.), Ukrposhta (n.d.), Reporting of Ukrainian enterprises (n.d.), K. Khutorna (2022)

The largest relative deviation in net income (368.92%) is typical for Just In LLC, which entered the express delivery market as a new operator in 2018, and in 2020 increased cargo turnover to 7 million shipments per year (Taranenko, 2020). This indicates increased competition in the express cargo delivery market.

Consequently, it actualises the need to assess the severity of intra-industry competition between participants in this market. Identification of changes in the specifics of production and economic processes of express delivery operators under the influence of the invasion factor on the territory of Ukraine is shown in Table 3.

Table 3. Changing the specifics of production and economic processes of express cargo delivery operators in war conditions

Parameters	Before / after the invasion	Enterprise				
		Nova Poshta LLC	Ukrposhta JSC	Meest Express Trading House LLC	Delivery LLC	Just In LLC
Number of delivery points	Before	22,256	11,000	5,500	420	480
	After	19,743	6,300	4,000	400	450
Delivery speed, h	Before	23	72	48	24	36
	After	32	72	48	30	40
Number of localities served	Before	All cities in Ukraine	All cities in Ukraine	Regional centres and major cities of Ukraine	340	128
	After	All cities except the occupied ones	All cities except the occupied ones	Regional centers and major cities of Ukraine, except for the occupied territories	340	128
Average delivery cost, UAH.	Before	70	45	70	50	60
	After	120	55	100	60	60
Focus on the segment	Before	B2C	C2C	B2C	B2B	B2C
	After	C2C	C2C	B2C	B2B	B2C

Notes: B2B – business-business relationship; B2C – business-consumer relationship; C2C – consumer-consumer relationship

Source: compiled according to Taranenko (2020), Express delivery global market report (2023), State Statistics Service of Ukraine (n.d.), Delivery Group (n.d.), Justin (n.d.), Meest Express (n.d.), History of “Nova Poshta” company (n.d.), Ukrposhta (n.d.), Reporting of Ukrainian enterprises (n.d.), K. Khutorna (2022)

The results of calculating the dynamics of changes in the Herfindahl-Hirschman index and the market concentration index of the express cargo delivery market in Ukraine are presented in Table 4.

Table 4. Analysis of the dynamics of changes in the Herfindahl-Hirschman index and the market concentration coefficient of the express cargo delivery market in Ukraine

No.	Enterprise	Market share, %			
		2020 P_k	P_k^2	2021 P_k	P_k^2
1	Nova Poshta LLC	59.94	35.9271	60.59	36.7134
2	Ukrposhta JSC	32.55	10.5971	32.56	10.6003
3	Meest Express Trading House LLC	1.25	0.0157	1.31	0.0172
4	Delivery LLC	0.87	0.0075	0.77	0.0060
5	Just In LLC	0.13	0.0002	0.3	0.0015
6	Other	5.26	0.2767	4.38	0.1915
	Herfindahl-Hirschmann index	-	46.8242	-	47.5300
	Market concentration index	94.74	-	95.62	-

Source: compiled by the authors

In 2020-2021, the Herfindahl-Hirschman index for the express cargo delivery market was 46.8242 and 47.5300, respectively ($HHI > 0.18$); the market concentration index – 94.74 and 95.62, respectively, which indicates

a high degree of monopolisation of the express cargo delivery market in Ukraine. The results of calculating the Lind index for the express cargo delivery market are presented in Table 5.

Table 5. Results of calculating the Lind index for the Ukrainian express delivery market for 2020-2021, %

Lind index	Year		Relative deviation of indicators 2021/2020, %
	2020	2021	
For two companies, IL2	184.14	186.08	101.05
For three companies, IL3	20.28	19.56	96.45
For four companies, IL4	28.24	30.31	107.33

Source: compiled by the authors

The value of the Lind index decreases to indicator L3 (2020-2021), at the level of which there is a “violation of the continuity of the indicator L” ($L_{m+1} > L_m$). Thus, in 2020-2021, two of the most profitable enterprises (Nova Poshta LLC, Ukrposhta JSC) formed a “hard” oligopoly. That is, Nova Poshta LLC in 2020-2021 with a share of 59.94% and 60.59%, respectively, as well as the state delivery service of Ukrposhta JSC with a share of 32.55% and 32.56%, respectively, form the “core” of the Ukrainian express cargo delivery market. Calculation of the differentiation indicator and Gini coefficient in the Ukrainian express cargo delivery market in 2020 and 2021 is given in Tables 6 and 7, respectively.

The Gini coefficient in 2020 was: $G = 1 - 2 \cdot 0.251583 + 0.1667 = 0.6635$. In 2021, according to similar calculations, the Gini coefficient was 0.6657. There is an increase in the value of the Gini coefficient in the express cargo delivery market during 2020-2021. The resulting Gini coefficient estimate characterises the express cargo delivery market as a market with an uneven distribution of market shares between enterprises in the sector. The higher the Gini coefficient, the higher the uneven distribution of market shares between enterprises, and therefore the higher the level of concentration of the express cargo delivery market in Ukraine.

Table 6. Calculation of the differentiation indicator and Gini coefficient in the Ukrainian express delivery market in 2020

Enterprise	y_i	x_i	Differentiation indicator, y_i/x_i	$\Sigma(x_i)$	$\Sigma(y_i)$	$x_i \cdot y_i$	$x_i \cdot \Sigma(y_i)$
Just In LLC	0.0013	0.1667	0.0078	0.1667	0.0013	0.0002	0.000217
Delivery LLC	0.0087	0.1667	0.0522	0.3333	0.01	0.0015	0.001667
Meest Express Trading House LLC	0.0125	0.1667	0.075	0.5000	0.0225	0.0021	0.003750
Other	0.0526	0.1667	0.3156	0.6667	0.0751	0.0088	0.012517
Ukrposhta JSC	0.3255	0.1667	1.953	0.8333	0.4006	0.0543	0.066767
Nova Poshta LLC	0.5994	0.1667	3.5964	1.0000	1.0000	0.0999	0.166667
Total	1.00	1.00	-	-	-	0.1667	0.251583

Source: compiled by the authors

Table 7. Calculation of the differentiation indicator and Gini coefficient in the Ukrainian express delivery market in 2021

Enterprise	y_i	x_i	Differentiation indicator, y_i/x_i	$\Sigma(x_i)$	$\Sigma(y_i)$	$x_i \cdot y_i$	$x_i \cdot \Sigma(y_i)$
Just In LLC	0.0039	0.1667	0.0234	0.1667	0.0039	0.0007	0.000650
Delivery LLC	0.0077	0.1667	0.0462	0.3333	0.0116	0.0013	0.001933
Meest Express Trading House LLC	0.0131	0.1667	0.0786	0.5000	0.0247	0.0022	0.004117
Other	0.0438	0.1667	0.2628	0.6667	0.0685	0.0073	0.011417
Ukrposhta JSC	0.3256	0.1667	1.9536	0.8333	0.3941	0.0543	0.065683
Nova Poshta LLC	0.6059	0.1667	3.6354	1.0000	1.0000	0.1010	0.166667
Total	1.00	1.00	-	-	-	0.1667	0.250467

Source: compiled by the authors

According to the analysis of the core of the express delivery market and determining the specifics of the activities of leading counterparties, it is established that oligopolists in the express delivery market quickly adapt to changes in the market conditions under study due to the influence of environmental factors. For example, Nova Poshta LLC adapted to the disturbances of the external environment caused by the pandemic and increased its net income from sales of products by 23% in 2021 compared to the previous year, which amounted to UAH 20.8 billion. For 2022, the development strategy of Nova Poshta LLC provides for a plan with a development budget of UAH 5 billion (Khutorna, 2022). Despite the full-scale invasion, the company does not stop operating, but has narrowed and reduced logistics supply chains, transformed product supply chains towards safe regions. The following parameters of the company's activity were adjusted:

- increase in the average cargo delivery time from 23 hours (pre-war period) up to 32 hours during the war, which amounted to 139.13% ;
- decrease in cargo turnover from 1.2 million up to 100 thousand express invoices per day, which is 12 times less than in the pre-war period;
- due to curfew restrictions, a ban on night shifts in sorting centres has been introduced, which makes it impossible to carry out effective urban and intercity movement of elements of the suprastructure of companies (Khutorna, 2022).

A direct industry competitor, which is at the core of the express cargo delivery market, Ukrposhta LLC, due to a wide range of services, such as courier delivery, issuance of pensions, cash, payment of utility bills, reduced the work of its branches from 11 thousand to 5 thousand branches and 1.3 thousand mobile branches during the war to a state of improvement in the security situation (Ukrposhta, n.d.).

Results of the conducted marketing research on the transformation of the needs of end users of express cargo delivery services in Ukraine during the war. Since the full-scale invasion of the Russian Federation on the territory of Ukraine significantly changed the market conditions of express delivery, it was decided to conduct a marketing study, the purpose of which was to identify the change in the structure of needs of consumers of express delivery services in the context of disturbances. The profile of the target audience of express cargo delivery confirms that

before the war, the dominant users of express delivery services were the younger generation aged 16-28 years – active internet users who are used to analysing a huge amount of information at the same time. Therefore, they have up-to-date information *from applications* and make purchases on various online marketplaces in order to optimise their own time. As delivery operators, companies are involved in the express delivery of goods to the places of nearest consumption of the ordered goods. On average, the frequency of express cargo shipments is monthly.

According to the results of a marketing study conducted by the authors in this study, after the correction of the military invasion, consumers between the ages of 18 and 50 became active users of express delivery services: internally displaced persons, entrepreneurs, and volunteers. They are characterised by large-sized shipments that are associated with the intensification of humanitarian cargo transportation in war conditions.

Consequently, based on the conducted research, it was established that the purchasing behaviour of consumers has undergone a significant correction due to the invasion of Ukraine. Prior to the invasion, 47% of respondents used delivery on a monthly basis, 38% – several times a year, and 11% – weekly. However, the express delivery market changed dramatically in the first weeks of the invasion. According to the question: “Did you use express delivery services in the first weeks of the war?”, 73% of respondents answered: “No”.

The appeal to the expert assessment confirmed the representativeness of the results obtained and the general trend of decreasing demand for commercial cargo transportation. In particular, according to an expert assessment provided by the Chief Operating Officer of Nova Poshta LLC, a month after the invasion, the number of orders for express cargo transportation decreased to 300-400 thousand units per day, depending on the day of the week and the military and civilian market conditions for express cargo delivery. At the beginning of the war, during the shock period, e-commerce stopped: the volume of shipments per day was 30 – 40 thousand shipments. The main senders were customers of the C2C sector, whose needs were structured into bulky cargo and heavy humanitarian aid (Khutorna, 2022).

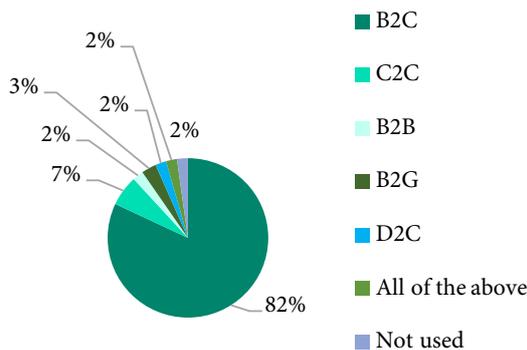
At the end of the shock period (February-March 2022), cargo turnover parameters gradually returned to pre-war

indicators (Khutorna, 2022). Based on the results of a survey conducted by the authors, the number of respondents who did not use express delivery services after the invasion increased by 18%. At the same time, the share of consumers who send or receive parcels on a monthly basis increased by 10%. It is worth noting that there is a sharp decrease in “inactive” consumers of services in the

delivery market: before the war, their number was 38%, while after the invasion – 2%. Such data indicate that the share of regular users has not changed and is constant regardless of military operations.

An infographic of the percentage of consumer needs in the express delivery market before and after the invasion is shown in Figure 1.

For what needs did you use express delivery services before the full-scale invasion?



For what purposes do you use express delivery services six months after the invasion and up to now?

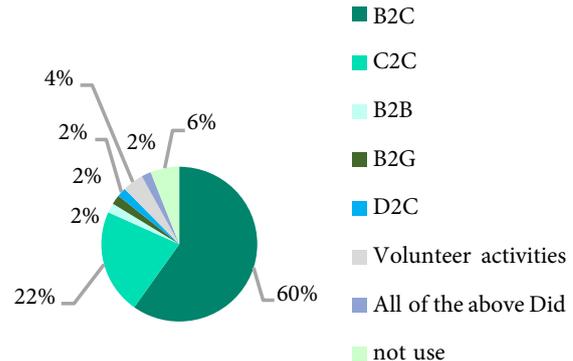


Figure 1. Comparison of changes in consumer needs in the express delivery market before and after the invasion based on market research

Note: B2C – business-consumer relationship; C2C – consumer-consumer relationship; B2B – business-business relationship; B2G – business-government relationship; D2C – direct sales

Source: compiled by the authors

As a result of the invasion, the percentage of online cargo orders in the B2C segments decreased by 22% and amounted to 210 thousand orders per day, while in the pre-war period this figure was 1,050 thousand orders per day (Hlinenko & daynovskyy, 2018). The share of cargo on the transfer of personal belongings (C2C segment) increased: from 7% to 22%, which is due to the growth of internally displaced persons in the Western region of Ukraine. It is worth noting that during the war, demand in the B2G segments decreased due to the security of documentation transfer, especially in uncontrolled territories and close to the war zone. Demand in Ukraine was distributed not only by geolocation, but also by gender. SimilarWeb report (n.d.) showed that 61% of e-commerce consumers are men, while 39% are women. Data on the audience of the social network Facebook also confirm this information: in March 2021, the percentage of women was 61.64%, men – 37.65%. In March 2022, the percentage of men increased to 51.97%.

According to Figure 1, the percentage of volunteer activity during the war appears in the structure of cargo turnover – 4.4%. It should be noted that the volunteer movement has been particularly relevant since 2014. In particular, within the framework of the corporate social responsibility strategy, Nova Poshta LLC implemented the project “Humanitarian post of Ukraine” in 2014, due to which volunteer organisations transport humanitarian goods to the active combat zone for free. In 2014-2016, more than 15,000 tonnes of cargo were transported for

300 volunteer groups in Ukraine (History of “Nova Poshta” company, n.d.). In the process of a full-scale invasion, the volume of international humanitarian cargo increased to 600 thousand tonnes (as of July 2022), according to information provided by the State customs service of Ukraine (n. d.).

Ukrposhta JSC, which follows the leader and is at the core of the express cargo delivery market as a state-owned operator, has its own advantages in international trade, unlike commercial operators. As a member of the Universal Postal Union (VSP), Ukrposhta JSC has benefits for transit tariffs, which significantly reduces the price and increases the speed of delivery. Therefore, the privilege of international delivery provides opportunities for effective transportation of humanitarian aid in war conditions. In particular, as part of the charter programme, Ukrposhta JSC delivers humanitarian cargo via the logistics route New York – Warsaw – Lviv to its final destinations in Ukraine.

The main competitive advantages of Courier, Express and Parcel Services (CEP) enterprises that should be considered due to the sharpness of intra-industry and inter-industry competition and digitalisation of business are high automation and mechanisation of production processes; expansion of supply and value formation for the end user, compliance with quality standards (dominant in time) on a marketing and logistics basis (for example, fulfilment and door-to-door service provision); the level of geographical coverage of the network.

In the course of the study, the growth of the express delivery market capacity was predicted by the leaders of Nova Poshta LLC and Ukrposhta JSC, which remain in the “core” of the express delivery market during the pandemic and during the war. Further consolidation of business and exit from the market of weak counterparties should be expected due to their low solvency, limited access to resources, and other factors that form a favourable institutional environment for operators in the cargo delivery sector, which will contribute to the recovery of activity and the Ukrainian economy as a whole.

The analysis of the express cargo delivery market is devoted to most of the scientific papers, the authors of which focused on the quantitative assessment of the development of the express delivery market using the results of research by industry or international associations (Ukrainian Retail Association, n.d.; Pro-Consulting, n.d.). This allowed determining the dynamics and features of individual components of the express cargo delivery market and identifying trends in the development of the express cargo delivery market, considering certain areas of the research subject.

The analysis of the economic situation of the Ukrainian express cargo delivery market and the dynamics of the development of its individual segments identified the main types of competition in the market under study, namely: significant competition between Ukrainian enterprises providing express cargo delivery services. Until the end of active hostilities in Ukraine, there are no expectations of potential foreign players in the express cargo delivery market, investors, and activation of other stakeholders. As a factor in the development of the market for express cargo delivery during the war, the development of enterprises of related industries (for example, the food delivery sector, retail chains) and other industries (for example, the military-industrial complex in war conditions), whose development strategies relate to the future entry into the market of express cargo delivery; increasing intra-industry pressure due to technical and technological innovations in transportation and increasing the efficiency of operational activities (due to the speed of decision-making, optimisation of cargo transportation routes, etc.); competition of individual logistics supply chains for express cargo delivery due to the growth of flexibility, territorial presence and the width of the offer of express cargo delivery; competition for dominance in the core of the express cargo delivery market, considering the possibility of dictating competition conditions, forming barriers to access to this market, etc.; pressure from consumers who are often dissatisfied with the level of logistics services and have access to the distribution and exchange of marketing information.

In the competitive struggle, enterprises should focus on increasing the value of express cargo delivery services for the end user due to non-price parameters, identifying the profile of the target consumer, and improving the quality of services provided, considering the achievements of business digitalisation (expansion of broadband, digital skills of end users and enterprises, etc.). In related sectors,

further business consolidation and withdrawal from the market of weak counterparties is expected due to their low solvency, limited access to resources and other factors that form a favourable institutional environment for the active use of cluster technologies and models in the express cargo delivery market.

The difference between this and the previous studies is:

- investigation of the specifics of adapting the functioning of enterprises in the market of express cargo delivery to the conditions of war in Ukraine using secondary marketing information. In previous studies, the authors A. Gautam & P. Pareek (2022) noted the impact of the coronavirus pandemic on the complexity of logistics decision-making on the example of Japan and other countries. Other researchers, such as M. Kiba-Janiak *et al.* (2021), I. Cárdenas *et al.* (2017) O. Fedirko *et al.* (2021) presented the results of studies of individual components of the express cargo delivery market in stable conditions, without revealing the specifics of the transformation of models of market behaviour of business entities in the express cargo delivery market in conditions of disturbances;

- identification of changes in the needs of end-users in Ukraine through the analysis of primary information based on the conducted marketing research, where the tool was a questionnaire using Google Forms software, which allowed forming a profile of the target audience in the Ukrainian market of express cargo delivery and providing recommendations to enterprises regarding the value approach in the formation of the offer of express cargo delivery services and a customer-oriented approach in business. For comparison, other researchers focused on identifying areas for improving the marketing system of consumer segmentation on the example of Greece (Griva *et al.*, 2022). Ukrainian researchers O. Prokopenko *et al.* (2016), N. Ptytsia & K. Kovtsur (2022), O. Taranenko (2020), although disclosed the specifics of marketing and logistics activities of enterprises in the express cargo delivery sector, did not reflect the provisions of the functioning in the context of neutralising the consequences of the spread of the pandemic and war;

- analysis and assessment of the concentration of the Ukrainian express cargo delivery market using index methods, which contributes to the deepening of approaches to studying the specifics and assessment of competition in the analysed market, structuring the core of the express cargo delivery market, and identifying enterprises that dictate the conditions of competition in it. Studies by other researchers, although they reflect the specifics of the express cargo delivery market, however, relate to separate ones that are completely different from this subject of research.

CONCLUSIONS

Based on the results of calculations that clearly show the specifics and level of concentration of the express cargo delivery market for the period 2020-2021, it is stated that the Ukrainian market is characterised by a high degree of monopolisation, as evidenced by the market concentration coefficient CR_3 at the level of 94.74 and 95.62, respectively.

According to the values of the Lind index, in 2020-2021, Nova Poshta LLC and Ukrposhta JSC entered the core of the express cargo delivery market. These enterprises have the opportunity to create competitive conditions and put pressure on other counterparties of the express cargo delivery market. The obtained values of the Gini coefficient characterise the express cargo delivery market as a market with an uneven distribution of market shares between enterprises of the sector. Despite the ability to exert pressure and create competitive conditions, the high adaptive ability of enterprises providing express delivery services to changes in the market conditions under study and adaptation to customer requirements due to the influence of environmental factors has been established. According to the results of a survey of end users of express cargo delivery services, it was found that the latter reacted sensitively to various kinds of disturbances, such as the spread of a pandemic or the war in Ukraine. It was noted that the profile of the active target audience of express cargo delivery aged from 16 to 28 years in stable conditions, and from 18 to 50 years in war conditions, which expanded due to the appearance of segments of internally displaced persons, entrepreneurs, and volunteers in it. Consumer demand, digitalisation of business, and life safety, research shows, remain determining factors in the development of the express cargo delivery sector in the face of disturbances.

The use of index methods for evaluating the Ukrainian express cargo delivery market allowed identifying characteristics that differ from the developments of other authors in the results: in terms of identification, evaluation, and analysis of the core of the express cargo delivery market and to characterise the distribution of “market power” between the subjects of the market under study. Conclusions are drawn about the intensification of competition in the target markets of express cargo delivery enterprises due to the need to retain regular customers during disturbances, which collectively cause the need to activate aggressive marketing activities by market participants. The active hostilities have complicated the economic situation in the express delivery market and transportation logistics, which has affected the efficiency of supply chains. These conclusions should be interpreted as elements of the scientific originality of the study, and this actualises the need to develop alternative competitive strategies, considering the risks of their marketing and logistics activities in the target sales markets, which should be the subject of a separate study.

None.

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CONFLICT OF INTEREST

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Олена Євгенівна Шандрівська

Кандидат економічних наук, доцент
Національний університет «Львівська політехніка»
79000, вул. Степана Бандери 12, м. Львів, Україна
<https://orcid.org/0000-0002-4335-2423>

Яна Юріївна Кізяк

Національний університет «Львівська політехніка»
79000, вул. Степана Бандери 12, м. Львів, Україна
<https://orcid.org/0000-0002-6461-7128>

Особливості функціонування ринку експрес-доставки в Україні в умовах війни

Анотація. Ринок експрес-доставки є одним із найбільш динамічних секторів економіки, без якого неможливе ефективне функціонування бізнесу, електронної комерції, ритейлу тощо. Під впливом зовнішніх чинників, таких як військове вторгнення на територію України з боку Російської Федерації у 2022 році, змінилися параметри діяльності операторів ринку експрес-доставки, що актуалізує питання аналізу показників діяльності ринку експрес-доставки та дослідження змін у поведінці споживачів у сфері послуг експрес-доставки. Метою роботи є представлення результатів комплексного дослідження особливостей трансформації функціонування українського ринку експрес-доставки в умовах нестабільності. Для досягнення мети дослідження використано комплекс наукових методів: системний, статистичного аналізу, індексний метод. З метою виявлення змін у структурі потреб споживачів послуг експрес-доставки в умовах збурень, було проведено маркетингове дослідження та експрес-опитування кінцевих споживачів. Досліджено динаміку розвитку українського ринку експрес-доставки в період повномасштабної війни з точки зору ідентифікації конкурентних позицій підприємств у сегменті та розподілу «ринкової влади» між учасниками досліджуваного ринку. Визначено підприємства, які формують «ядро» досліджуваного ринку та їх роль у формуванні інтенсивності конкуренції на ринку експрес-доставки в Україні. Представлено результати проведеного маркетингового дослідження щодо зміни купівельної поведінки споживачів під час війни в Україні та встановлено профіль цільової аудиторії послуг до та під час війни. Відзначено високу адаптаційну здатність підприємств, що надають послуги експрес-доставки, до умов нестабільності в частині відновлення операційної діяльності, коригування параметрів логістичної діяльності відповідно до змін у потребах споживачів. Потреби споживачів, діджиталізація бізнесу та безпека життєдіяльності залишаються визначальними факторами розвитку досліджуваного сектору в умовах збурень. Результати досліджень можуть бути застосовані на практиці керівниками відділу маркетингу і логістики, планово-економічного відділу підприємств сектору експрес-перевезень вантажів та зацікавленими групами стейкхолдерів на ринку експрес-доставки вантажів

Ключові слова: експрес-перевезення; економічна кон'юнктура; концентрація; маркетингове дослідження; кінцеві споживачі

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Natalia Horbal*

PhD in Economics, Associate Professor
Lviv Polytechnic National University
79000, 12 Stepan Bandera Str., Lviv, Ukraine
<https://orcid.org/0000-0003-1448-5603>

Yulia Makarova

Master's Student
Lviv Polytechnic National University
79000, 12 Stepan Bandera Str., Lviv, Ukraine
<https://orcid.org/0000-0003-0287-031X>

Eco-innovations for sustainable development of Ukrainian enterprises

Abstract. The successful development of enterprises is based on many factors, and today, global environmental problems, the depletion of natural resources, global warming, and overpopulation are highlighting the importance of eco-innovation for sustainable development. The purpose of the study was to investigate the essence and significance of eco-innovations for the sustainable development of Ukrainian enterprises, in particular, considering the consequences of the 2022 military aggression against Ukraine. Research is generally based on methods of analysis, synthesis, abstraction, generalisation, and explanation. Prerequisites for the introduction of eco-innovations are established by the following groups of factors that put pressure on business: economic, regulatory, market, and socio-environmental. Three key groups of effects of eco-innovations (environmental, economic, and social) are identified and the advantages and disadvantages of their implementation for business are analysed in detail. As the analysis and successful global examples have shown, eco-innovations provide an increase in customer and employee loyalty, increase sales and improve the brand image, and so on. At the same time, the following disadvantages are mentioned: significant costs; technical, technological, and regulatory difficulties; rising prices for goods, and in addition, there are additional specific obstacles in Ukraine. Although many Ukrainian companies successfully introduce innovations, in general, it is shown that they lag behind firms in developed countries in terms of technological efficiency and sales of high-tech products. Ukraine has already achieved quite significant positions in the Environment Performance Index 2022 on the way to implementing the European Green Deal. However, the Russian invasion of Ukraine in 2022 negatively affected the state of its economy, environment, science and innovation. The practical value of the study is to provide recommendations for the sustainable development of Ukraine based on the European Green Deal and innovative global eco-approaches

Keywords: ecology; ESG principles; business model; eco-marketing; European Green Deal

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*Corresponding author



INTRODUCTION

The planet's resources are rapidly being depleted. According to forecasts, by 2050, humanity (about 9.6 billion people) will need three planets like Earth to maintain a modern way of life. In total, half a trillion tonnes of primary resources were used to meet public needs in 2018-2023, which is 70% more than land can safely replenish (Horbal & Lomaga, 2022). Accordingly, today sustainable development (which "meets the needs of the current generation without compromising the ability of future generations to meet their own needs") is a global trend. Especially profound changes in values and behaviours based on the ideas of sustainability, organicity, and environmental friendliness can be observed in young people. On the one hand, consumers of eco-products want to contribute to the protection of the environment, on the other – to improve their own health (Musina & Kvasha, 2018).

Environmental innovations for sustainable development should concern not only goods or companies, but also industries, regions, countries, and, accordingly, combine their economic success with environmental and social added value for consumers, workers, and society. At the same time, the United Nations (UN) Climate Change Conference COP27 in Egypt and the biodiversity conference COP15 in Montreal highlighted the critical role of business in reducing the impact of humanity on nature and climate. The COVID-19 pandemic, Russia's attack on Ukraine and, as a result, another wave of refugees, rising inflation and a lack of energy resources have further increased doubts about the ability of governments to ensure sustainable and inclusive development of countries. In addition, investors and rating agencies monitor the ESG (*environmental, social, governance*) performance of firms and hold them accountable (Horbal & Lomaga, 2022; EPI Results, 2022; European Commission, 2022). Accordingly, business will play an increasingly important role in ensuring sustainable development globally.

The topic under study is extremely popular among researchers today. L.A. Musina & T.K. Kvasha (2018), studying the prospects for enterprise development in the current realities of biodiversity destruction and global warming, came to the conclusion that only companies that will implement eco-innovations have a future. E. Smith (2021) presents a rating of the 100 most creative eco-innovations on the international market and a description of the products to which these eco-innovations have become alternatives. M. Siswoyo *et al.* (2020) and S. Balamurugan (2022) investigated eco-innovation as a prospectively significant factor in strengthening the competitiveness of an enterprise, and A.S. Immawati & A. Nugroho (2020) – prospects and disadvantages of implementing eco-innovations in firms.

The features and significance of eco-innovations for the sustainable development of enterprises, in particular in developing countries, at the present stage, require further dynamic research, in particular, studying the specifics and results of their implementation. The purpose of the study, respectively, was to investigate the essence, significance,

features and possibilities of implementing eco-innovations for the sustainable development of Ukrainian enterprises, in particular, considering the consequences of military aggression in 2022 against Ukraine.

MATERIALS AND METHODS

The research methodology includes studying the content of the concept of "eco-innovations" in the context of sustainable development of enterprises, considering the main features, advantages and disadvantages, the results of implementing such innovations on the examples of specific enterprises of countries with developed market economies, assessing the state and prospects for the development of innovation activities at Ukrainian enterprises, in particular, considering the consequences of military aggression against Ukraine since 2022.

The study is based on theoretical research methods (analysis, synthesis, abstraction, generalisation, explanation), as well as system and functional approaches. In other words, abstract ideas, provisions, and concepts related to the process of practical knowledge of the effectiveness of eco-innovations for enterprises are used. There are not enough reliable data on the activities of Ukrainian enterprises available today to apply empirical research methods. Accordingly, the conducted research is more fundamental (i.e., aimed at the development of new knowledge) than applied.

The authors used data from the Global Sustainability Study (Businesswire, 2021), McKinsey (The Restless CMO, 2022), and UN (United Nations) environment programme (UNEP, n.d.), the EU4Environment programme (n.d.), FINTECC (n.d.) and the Ministry of Economy of Ukraine; results of implementation of eco-innovations and eco-marketing by the world's leading enterprises (the Tiny Housing Co "Natura", ShoeX, Coolpaste, PriestmanGoode, Edeka, Innocent Smoothie); data on innovation activity of Ukrainian enterprises from Mind (n.d.); data from the Global Environment Performance Index (EPI Results, 2022) and other publicly available sources of information.

RESULTS AND DISCUSSION

To ensure sustainable development and adequate livelihoods today and in the future, humanity must fundamentally change its approach to consumption and production. Ultimately, consumers, through their purchasing behaviour, essentially determine value chains and supply chains, and thus economic, social and environmental conditions around the world. On the other hand, producers and marketers have the ability to influence the conditions of production and sale of goods/services (Balamurugan, 2022).

Consumer behaviour is positively influenced by eco-education, better information and eco-marketing. Thus, environmental and social labelling of goods reflects sustainable development-oriented aspects during their production and helps to consume responsibly. At the same time, it encourages companies to consciously design production and supply chains with a focus on sustainability (Green marketing

trends era, 2023). In Germany, for example, the “Blue Angel” as a state environmental sign has been setting high standards for 40 years. More than 12,000 products and services meet strict environmental criteria (Blue Angel, n.d.).

Companies focused on sustainable development should maintain a dialogue with the public and report transparently on their goals and measures to reduce their environmental impact. Business compliance with ESG principles and disclosure of information about ESG indicators (which assess the company’s corporate governance in terms of its impact on *ecology and society*) becomes a key factor in the investment attractiveness of a business. For example, the European EMAS (Eco-Management and Audit Scheme) logo means a complex internal eco-management system that is reviewed by state-approved environmental auditors. Nowadays, it is allowed to be used by more than 2,200 branches of German companies (European Commission, n.d.).

More and more companies are integrating methods aimed at sustainable development, in particular, eco-innovation, into their activities. First of all, they relate to the origin and use of raw materials in production. By minimising both their own costs and their environmental impact, such companies are becoming increasingly successful (Balamurugan, 2022). Accordingly, almost every company and brand is trying to promote sustainable production (Horbal & Lomaha, 2022): even energy and automotive companies, fast food giants, and chemical companies that produce significant amounts of CO₂ emissions. At the same time, a green layer of paint, a set of quality marks and certificates on the packaging are no longer enough. Environmental innovations can and should relate to various aspects of a product, from manufacturing and packaging to advertising and distribution. In particular, these include: sustainable production; use of recycled materials; carbon neutral footprint; water-saving production; renewable raw materials/materials; recycling of goods after use; zero waste or zero plastic production; local or regional production; fair production, etc.

In general, eco-innovation is an innovation that can make a significant contribution to sustainable development. It may relate to reducing the impact on the environment, more efficient use of natural resources, environmental orientation, etc. This concept first appeared in 1996 in the book “Driving Eco-Innovation: A Breakthrough Discipline for Innovation and Sustainability” (Fussler & James, 1996). V. De Marchi & R. Grandinetti (2013) suggests that eco-innovation should meet at least one of the following conditions: minimising the negative impact on the environment; efficient use of natural resources; energy efficiency; waste recycling/use of waste-free technologies; use of eco-standards; use of renewable energy.

But today, approaches to sustainable development have changed somewhat compared to the original ideas – the focus has shifted from final product solutions to the product lifecycle, business models, and environmental strategies (Musina & Kvasha, 2018). Eco-innovations today include

improving the business process system to improve efficiency and significantly reduce costs and waste.

It is difficult for large and medium-sized companies that have been operating on the market for more than 15-20 years to adapt their business processes and products to the new realities of environmental friendliness. However, despite the difficulties and high costs of their implementation, eco-innovations are becoming increasingly popular in the world. Thus, according to the results of the Global Sustainability Study (Businesswire, 2021) conducted in 2021 by Simon-Kucher & Partners in 17 countries, 85% of respondents indicated that in recent years they have changed their behaviour towards a healthy lifestyle and the purchase of eco-products. About 35% of consumers are willing to pay more for eco-friendly products and for products that are made on the principle of zero waste, but there are age differences. Thus, 39% of the surveyed representatives of the younger generation (also called Generation Z) and 42% of millennials (people born in 1981-96) are willing to pay more for eco-products. But for Generation X (born in 1961-81), this is only 31%, and for the baby boomer generation (born in 1945-63) – 26%.

60% of respondents indicated that environmental friendliness is the most significant criterion for choosing a product, and it is worth noting the differences by industry. Thus, 74% said that environmental friendliness is the main criterion in the energy and utilities sector, 44% indicated financial services, 66% – construction, 63% – consumer goods, 62% – travel and tourism, and 61% – when choosing a car (Businesswire, 2021).

The UN environment programme (UNEP) helps small and medium-sized enterprises (SMEs) in different countries apply eco-friendly business models throughout the life cycle and throughout the value chain and implement eco-innovations. At the same time, they use innovative market approaches, organisational structures, new solutions and changes within the company that help increase productivity, technological efficiency and profitability, open access to new markets, attract investment, etc. Thus, with the help of UNEP in Malaysia, Accel Graphic System introduced eco-processes in the printing ink market, where there is strong competition, and Wilron Products developed an eco-innovation strategy in the glue market. In Peru, in the coffee and cocoa market, which is of key importance for the agri-food industry, environmental innovations helped IMSA reduce production waste and take a leading position; in the mining and cement industry, Funvesa previously used iron scrap in production, but with great ambitions and opportunities to enter new markets, it successfully introduced environmental innovations. In Vietnam, guava farms make extensive use of pesticides to protect trees, which is not eco-friendly, so Viet Lien applied an innovative solution for the market position; in the tea market, Hiep Thanh, which previously could not sell the tea produced abroad due to regulatory, technical, and environmental problems, reached a new innovative level only

through a complete transformation of the company. In Sri Lanka, Rasoda Dairies' milk processing company eco-innovations helped improve quality, sustainability and productivity; and Asian Agro Products entered the international market through eco-innovations that helped increase the added value of the product (UNEP, n.d.).

The European Union's EU4Environment programme also supports eco-innovations for SMEs in partner countries. It helps assess the potential of environmental innovation at all stages of the value chain, and develop innovative strategies to strengthen environmental performance, market position, customer base, and competitiveness. In Ukraine, EU4Environment assists in the development of green economy policies, the introduction of resource Efficient and Cleaner Production (RECP) in SME activities, promotes the production of green products, green public procurement and environmental labelling, strengthens regulatory compliance, performs assessments and strengthens administrative capacity, and develops green growth indicators (GGI) (EU4Environment..., n.d.).

The programme of climate innovation vouchers created by the FINTECC Initiative (Centre for technology transfer and finance in the field of climate change), funded by the European Union and the European Bank for Reconstruction and Development (FINTECC, n.d.).

According to UNEP experts, environmental degradation and resource depletion, which increases pressure on businesses, increases requirements for suppliers and the likelihood of fines and sanctions for violations, creates conditions for the introduction of eco-innovations. Thus, based on (Balamurugan, 2022; UNEP, n.d.) the authors of the study systematised the factors of pressure on business that form potential opportunities for eco-innovation: 1) economic factors (resource scarcity, commodities price volatility), 2) regulatory factors (strengthening regulation, mandatory transparency of corporate sustainability performance), 3) market factors (growing demand and pressure for sustainable products, developing markets of eco-innovations, partnerships for sustainability), 4) social-ecological factors (environmental degradation, natural disasters, negative impact on society). To find opportunities for them, it is recommended to analyse the value chain of companies (UNEP, n.d.).

To illustrate the results of implementing eco-innovations, it is advisable to give the most interesting world examples. The Tiny Housing Co "Natura" is a small house created by the company Natura, which is completely eco-friendly, because they are created based on wooden panels and cardboard.

As the use of disposable protective masks during the COVID-19 pandemic has increased significantly, creating tonnes of medical waste, ShoeX has developed a reusable AirX protective mask made from coffee waste. The mask has a biodegradable and antimicrobial design, an air filter, AATCC 100 certificate (quantitative test method used to determine the effectiveness of antibacterial finishes applied to textile materials), and it can be worn for about one month.

Instead of plastic tubes of toothpaste and their paper packaging, Coolpaste has created a biodegradable tube with hanging packaging for proper storage. The company Everloop has produced a toothbrush that can change the bristles. Its handle is designed on the basis of recycled plastic, and the bristles are made of bamboo, which decomposes after use.

PriestmanGoode has created zero packaging for fast food and cooperates with companies that sell fast food. Consumers first pay a little too much for bento-style cocoa bean shell packaging, and then get a refund when they bring the lids and mould for their next use to this facility (Smith, 2021).

The following are examples of companies switching to eco-marketing. Edeka, the largest German food retailer, has been partnering with the World Wildlife Fund (WWF) since 2009. Cooperation began with sustainable fisheries, which aims to combat overfishing in the world's oceans. Since then, most Edeka fish products have the "MSC" (Marine Stewardship Council) label, which is used worldwide. In the following years, the cooperation was extended to other segments. Edeka's long-term goal is to "further strengthen sustainable action at all levels of the company." Edeka's own brands, which meet strict environmental requirements, now have the WWF panda logo. All brands made from wood or paper are FSC (Forest Stewardship Council) certified or made from recycled material. In addition, Edeka relies on certified feeds that are produced without the help of genetic engineering. The share of eco-friendly products in Edeka's product range has grown steadily over the years, along with the intensive use of sustainable marketing. In other words, targeted advertising events are mainly combined with messages about environmental awareness. Accordingly, it is not the product itself that is advertised, but the philosophy of its production.

Another example is the global company Innocent Smoothie, which produces smoothies and fruit juices. The concept of its sustainable development covers all areas of activity: from environmentally friendly production and waste prevention to information campaigns and training employees and customers in the basics of sustainable development. This is partly implemented in collaboration with WWF and the Rainforest Alliance (an international non-profit organisation working at the intersection of business, agriculture, and forests to make business responsible). Innocent Smoothie attempts to "find a balance between good taste and eco-friendly production", so advertising events focus not on products, but on successful environmental development campaigns. Nowadays, Innocent Smoothie processes more than 80% of dry waste from juice production, and liquid waste is used as livestock feed and for the production of biogas. To reduce the amount of packaging material, bottles contain as much recycled PET (polyethylene terephthalate) as is technically possible. Every four years, the company determines CO₂ emissions for each product. Emissions from each individual stage of production and the entire supply chain are determined using the PAS 2050 (specification for the assessment of the life cycle greenhouse gas emissions of goods/services) method to detect and reduce

greenhouse gases. Because of this, Innocent Smoothie does not use aeroplanes and, as far as possible, road transport to deliver fruit and transport juices. Instead, for the most part, everything is transported by ships or trains (Die Bundesregierung, 2022).

In general, the impact and significance of eco-innovation should be evaluated in three dimensions: 1) goals (e.g., products, processes, marketing methods, etc.); 2) mechanisms (e.g., modification, redesign, alternative and creation); 3) impact (effects) (OECD, 1997), as well as in three

main objects: the environment; the country's economy and society as a whole. Accordingly, their effects can be: 1) environmental (reducing the use of Natural Resources and waste volumes); 2) economic (increasing incomes, achieving new competitive advantages, realising new market opportunities); 3) social (creating new jobs, changing people's behaviour and lifestyle to healthier, better quality). And if eco-innovations create significant positive effects for the environment and society, they can have both advantages and disadvantages for businesses, as shown in Table 1.

Table 1. Key advantages and disadvantages of eco-innovation for business

Advantages	Disadvantages
Improvement of the company's image and customer/employee loyalty, Cost reduction due to: reduced waste volumes and increased recycling volumes; energy conservation and sustainable production; tax incentives, Creation of new strategic business opportunities, etc.	Significant spending of money and time on R&D and innovation, Technical and technological difficulties, Lack of qualified personnel, information/knowledge, and partners in this area, Need for a well-thought-out regulatory system at different levels, Rising product prices, Need to constantly analyse the requirements/needs of society, Relative immaturity of eco-innovation markets, complexity of forecasting demand for them, Probability of bankruptcy of weaker companies, loss of jobs, Not everything called "eco" is such in essence

Source: systematised by the authors based on S. Balamurugan (2022), A.S. Immawati & A. Nugroho (2020), O. Larbi-Siaw *et al.* (2022)

Table 1 shows that eco-innovations, in addition to the need to preserve the planet for themselves and future generations, have significant economic effects for businesses, in particular through:

1. Increased customer loyalty to the brand. According to a 2020 McKinsey survey (the Restless CMO, 2022), one in three people in the world consciously chooses new eco-products to reduce the environmental footprint and make a social contribution. Even in times of crisis, sustainability and eco-friendliness are essential for customers. Through eco-innovation, companies respond to the wishes of their customers, which increases their trust, loyalty, and brand image.

2. Increased employee loyalty. An employee who works for a company that adheres to values similar to their own is more satisfied. The pride and team spirit of working in an environmentally conscious company increases the loyalty and dedication of employees, which, in turn, makes the company more attractive.

3. Long-term benefits. The company's transition to environmentally sustainable production initially negatively affects its budget. However, in the long run, this can increase profitability, as optimised production methods and processes reduce costs. In addition, the increase in prices for goods can be justified and shifted to customers, because environmentally conscious consumers are willing to spend more.

4. Investment in the future. The topic of sustainable development is only gaining relevance today. Companies

are simply forced to switch to its principles and implement eco-innovations.

In addition to these shortcomings directly in the business sphere, there is a number of social factors that hinder the introduction of eco-innovations: a certain passivity of human thinking and behaviour; resistance to change; lack of knowledge about the global ecosystem; self-centredness and limited interests of stakeholders, etc. Ukrainian companies lag behind the EU in terms of technology efficiency by a third, and export four to eight times less high-tech products (Zhmereneckiy, 2017). At the same time, many companies in Ukraine successfully introduce innovations (Table 2).

Table 2 shows that PrivatBank has been a leader in recent years. Many companies from the 2017 ranking of innovative companies ceased to exist as of 2022 due to COVID-19 and military operations on the territory of Ukraine, but other companies were not only able to exist in difficult conditions, but also to develop innovations.

In Ukraine, the signing in 2014 of the Association Agreement with the EU (Government portal of Ukraine, 2017) and the adoption of an action plan for its implementation (in particular, the section on Economic and Sectoral Cooperation), as well as the approval of plans for the implementation of EU directives and regulations on energy, environment and technology, are aimed at Ukraine's transition to the European model of "green" development. This should contribute to the modernisation and more dynamic development of the Ukrainian economy through: the

development of less resource-intensive and more high-tech sectors of the economy, the creation of new jobs; the introduction of modern resource- and energy-efficient technologies, increasing innovation activity, reducing waste, and, accordingly, increasing the competitiveness of Ukrainian enterprises. However, the obstacles to the introduction of eco-innovations by enterprises in Ukraine include:

insufficient financial support for R&D, and lack of state orders for eco-innovations; inefficient regulatory support in this area, which complicates the development/implementation of eco-innovations, in particular for SMEs, and reduces the motivation of enterprises; undeveloped infrastructure for supporting eco-innovations; low public demand for eco-innovations; inefficiency of environmental audit, etc.

Table 2. Ratings of Ukrainian innovative companies in 2017 and 2022

No.	Rating 2017			Rating 2022		
	Companies	Sector	Index I	Companies	Sector	Index I
1	PrivatBank	Banking	79.2	PrivatBank	Banking	83
2	PA Pivdenmash	Mechanical engineering	64.6	Silpo Food	Retail	80
3	Nova Poshta	Transport and logistics	60.4	Agroprosperis	Agriculture	78
4	Farmak	Pharmaceuticals	60.4	Nova Poshta	Transport and logistics	76
5	Turboatom	Mechanical engineering	58.3	Kyivstar	Telecommunications	75
6	Naftogaz-vydobuvannya	TEC	56.3	Vodafone Ukraine	Telecommunications	75
7	Grammarly	Technologies	54.2	DTEK	Energy	73
8	MHP	Agriculture	54.2	Roshen	Consumer market	70
9	Ukroboronprom	Defence manufacturing	52.1	MHP	Agriculture	70
10	Rozetka	E-commerce	52.1	Alfa-Bank Ukraine	Banking	68
11	Silpo Food	Retail	52.1	Arterium Corporation	Pharmaceuticals	67
12	Wind Power	Renewable energy	50	Datagroup	Telecommunications	67
13	Darnitsa	Pharmaceuticals	47.9	Metinvest	Metallurgy	66
14	Petcube	Technologies	45.8	Astarta	Agriculture	66
15	Nibulon	Agriculture	43.8	Interpipe	Metallurgy	65
16	Drone.ua	Technologies	41.7	Epicenter K	Retail	63
17	Eco-Optima	Alternative energy	41.7	Darnitsa	Pharmaceuticals	62
18	Svarog West Group	Agriculture	41.7	Kernel	Agriculture	62
19	AgriLab	Agriculture	40.4	Yuria Pharm	Pharmaceuticals	62
20	Kernel	Agriculture	33.3	Farmak	Pharmaceuticals	61

Source: systematised by the authors based on O.V. Zhmereneckiy (2017), Mind (n.d.)

According to the Environmental Performance Index (EPI) in 2022, Ukraine was ranked 52nd out of 180 countries assessed. EPI is an international ranking that evaluates the state of the environment and sustainability of countries based on 40 indicators of climate change effectiveness, environmental health, and ecosystem viability. The leaders in 2022 were Denmark, the United Kingdom, Finland, Malta, and Sweden (EPI Results, 2022).

The Russian invasion of Ukraine has had a very negative impact on the state of the environment in the country due to industrial and chemical pollution, mining of territories, reduction and deterioration of natural ecosystems, destruction of landscapes, damage to biodiversity, and the destruction of industry and agriculture. At the same time,

attacks on Ukraine's critical infrastructure and global energy markets are now somewhat shifting the focus from the environmental component of ESG to energy security, at least in the short term. However, there is also a positive impact: it encourages innovation in the areas of energy conservation and renewable energy sources.

The country's economy was also significantly affected by the war: according to the Ministry of Economy, gross domestic product in 2022 decreased by 30.4%, which is the largest drop in the recent history of Ukraine. The volume of economic losses of Ukraine at the end of 2022 amounted to more than USD 700 billion. The field of science and innovation also suffered significant losses: about 15% of the research infrastructure of higher education institutions

and scientific institutions was damaged, including unique scientific equipment, research laboratories, and centres for collective use of scientific equipment (Ministry of Education and Science of Ukraine, 2022).

Therefore, Ukraine faces the difficult task of restoring the economy, the environment, science and innovation, in particular, based on the European Green Deal and advanced eco-approaches. Certain measures are being implemented today. For example, on 4-5 July 2022, the Ukraine Recovery Conference (2023) in Lugano, Switzerland, adopted the programme “Restoring a Clean and Protected Environment”, which provides for the implementation of 76 environmental projects worth EUR 25.5 billion in Ukraine. In June 2022, the Verkhovna Rada adopted the law on waste management (Law of Ukraine No. 2320-IX, 2022), and in September – on the national register of pollutant emissions and transfer (Law of Ukraine No. 2614-IX, 2022). The “New EU Forest Strategy for 2030” (European Commission, 2019) should become the key one in forestry. And for the greening of society, it is planned to create and implement the interdepartmental programme “Environmental education and information for sustainable development of Ukraine for 2022-2032” (Proschuk, 2022).

In general, other researchers have paid a lot of attention to the analysis of various aspects and areas of implementation of eco-innovations. For example, L.G. Lypych *et al.* (2022) analysed the essence and role of eco-innovation from the standpoint of closed-loop economics, and M.V. Odrekhivskiy & U.I. Kohut (2022) proposed a systematic concept of eco-innovation policy. O.F. Hryshenko & S.O. Kostornova (2017) described the prospects of eco-innovations in the field of tourism, and A.G. Abramova & Yu.A. Myroshnyk (2020) focused on the hotel and restaurant business.

Yu.I. Golovnya *et al.* (2019) examined the company's eco-strategies and described how environmental branding develops in a sustainable development environment. Exploring green marketing as a component of eco-innovation, T.V. Pavlenko (2018), I.O. Korostova (2020) and L.O. Plakhotnikova & T.M. Bulakh (2019) concluded that it helps businesses increase customer loyalty and improve employee satisfaction with working for the company. Instead, S.V. De Freitas Netto *et al.* (2020). and T. Pimonenko *et al.* (2018) focused on the negative consequences of pseudo-ecological marketing – greenwashing. Companies have started to “green” their products and activities with green labels and colours, and, in fact, their activities continue to harm the environment. O. Larbi-Siaw *et al.* (2022) proved that there is a small and even negative relationship between the introduction of eco-innovations and sustainability.

Despite the widespread coverage of the topic in scientific research, especially in relation to developed countries, their results are not unambiguous. While most of them highlight and confirm the positive aspects of eco-Innovation, some researchers emphasise the opposite results in their studies.

CONCLUSIONS

As the planet's resources are rapidly depleted, humanity must radically change its approaches to consumption (the sphere of responsibility of consumers and society) and production (the sphere of responsibility of producers and sellers). Due to the increased attention to sustainable development and environmental protection, the demand for eco-innovations (innovations to reduce the impact on the environment, more efficient use of natural resources, environmental orientation, etc.) is increasing today, and they are becoming the norm in the activities of enterprises.

It can be difficult for large companies to adapt their business processes and products to the new realities of environmental friendliness. Pressure on business (economic, regulatory, market and socio-environmental factors) creates prerequisites for the introduction of eco-innovations. To find opportunities for them, it is recommended to analyse the value chain of companies. Three key groups of effects of eco-innovations (environmental, economic, and social) are identified and the advantages and disadvantages of their implementation for business are analysed in detail. In fact, as the analysis and successful global examples show, eco-innovations are a profitable investment, because they, in particular, provide an increase in customer and employee loyalty, increase sales and improve brand image, and so on. At the same time, the following disadvantages are given: significant costs; technical, technological, regulatory difficulties; rising prices for goods, etc., and in addition, there are additional specific obstacles in Ukraine. Assistance in implementing eco-innovations for small and medium-sized enterprises is provided, in particular, by the United Nations Environment Programme (UNEP), EU and EBRD programmes.

As the analysis showed, although many Ukrainian companies successfully introduce innovations, in general, they lag behind enterprises in developed countries in terms of technological efficiency and sales of high-tech products. At the same time, Ukraine has already achieved quite significant positions on the way to implementing the European Green Deal. However, in 2022, the Russian invasion of Ukraine had a very negative impact on the state of its economy, environment, science, and innovation, in particular, due to industrial and chemical pollution, mining of territories, reduction and deterioration of natural ecosystems, and damage to biodiversity. Prospects for further study can be an analysis to prevent external factors that negatively affect the introduction of eco-innovations, and providing clear recommendations and standards for the introduction of eco-innovations in small businesses and developing ones, which will be based on the current sales market and the global situation in general.

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CONFLICT OF INTEREST

None.

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Наталія Ігорівна Горбаль

Кандидат економічних наук, доцент
Національний університет «Львівська політехніка»
79000, вул. Степана Бандери, 12, м. Львів, Україна
<https://orcid.org/0000-0003-1448-5603>

Юлія Сергіївна Макарова

Магістр
Національний університет «Львівська політехніка»
79000, вул. Степана Бандери, 12, м. Львів, Україна
<https://orcid.org/0000-0003-0287-031X>

Еко-інновації для сталого розвитку українських підприємств

Анотація. Успішний розвиток підприємств ґрунтується на багатьох чинниках, та на сьогодні світові проблеми з навколишнім середовищем, вичерпанням природних ресурсів, глобальним потеплінням та перенаселенням планети актуалізують значимість еко-інновацій для сталого розвитку. Метою статті було дослідити сутність та значення еко-інновацій для сталого розвитку українських підприємств, зокрема з врахуванням наслідків військової агресії 2022 р. проти України. Дослідження загалом ґрунтується на методах аналізу, синтезу, абстрагування, узагальнення та пояснення. Передумови для впровадження еко-інновацій формуються такими групами факторів, що чинять тиск на бізнес: економічні, регуляторні, ринкові та соціо-екологічні. Виділено три ключові групи ефектів еко-інновацій (екологічні, економічні та соціальні) й детально проаналізовано переваги й недоліки їх впровадження для бізнесу. Як засвідчив проведений аналіз та наведені успішні світові приклади, еко-інновації забезпечують підвищення лояльності клієнтів і працівників, збільшення продажу та покращення іміджу бренду тощо. Разом із тим наведено такі їх недоліки: значні витрати; технічні, технологічні, регулятивні складнощі; ріст цін на товари, а крім того в Україні існують і додаткові специфічні перешкоди. Хоча багато українських компаній успішно впроваджують інновації, загалом показано, що вони за рівнем технологічності та збуту хай-тек продукції відстають від фірм розвинутих країн. Україна на шляху до впровадження Європейського зеленого курсу вже досягла досить значних позицій за Environment Performance Index 2022. Проте російське вторгнення в Україну у 2022 році негативно вплинуло на стан її економіки, довкілля, науки та інновацій. Практична цінність дослідження полягає у наданні рекомендацій для сталого розвитку України на засадах Європейського зеленого курсу та інноваційних глобальних еко-підходів

Ключові слова: екологія; ESG-принципи; бізнес-модель; еко-маркетинг; Європейський зелений курс

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Halyna Zakharchyn*

Doctor of Economics, Professor

Lviv Polytechnic National University

79000, 12 Stepan Bandera Str., Lviv, Ukraine

<https://orcid.org/0000-0002-4081-7926>

Yosyf Sytnyk

Doctor of Economics, Associate Professor

Lviv Polytechnic National University

79000, 12 Stepan Bandera Str., Lviv, Ukraine

<https://orcid.org/0000-0001-8718-5738>

Construction and development of corporate knowledge in modern conditions

Abstract. The study deals with issues related to the construction and development of corporate knowledge in modern conditions caused by transformational processes in the socio-economic sphere of Ukraine conditioned by the war and other challenges that stimulate the need for new knowledge. The need for rapid response to these requests actualises in theoretical and applied terms the definition of the subject segment of new knowledge and its use. The purpose of the study is to highlight the features of construction and the necessity of developing corporate knowledge in modern conditions. To achieve this goal, the study uses the following methods: analysis, synthesis, system method, combinational grouping, modelling, and statistical method. As a result of the study, the need for new corporate knowledge is generalised and the following main groups are identified: knowledge on reorientation of the labour market through war; on security activities; related to mental health and emotional stability; related to the skills of psychological adaptation and flexibility in war conditions; knowledge on the strategy of change, and their characteristics are given. It is proved that new corporate knowledge acquired during the war changes the labour market and reorients the current business processes, social processes, communication and worldview processes in various types of economic activity, which requires a revision of the principles of corporate knowledge construction. As a result of the research, a model of the life cycle of corporate knowledge management was created, the use of which will increase the efficiency of knowledge exchange and the use of intellectual resources, and the process of constructing corporate knowledge based on the factor of intellectual culture was proposed. The conclusions obtained from the results of the study are of applied value and can be useful for representatives of business, the public sector, educational and scientific institutions in developing strategies for change and development and forecasting trends in order to improve and update the corporate knowledge base

Keywords: knowledge economy; intellectual assets; knowledge management; labour market; personal development; change strategy; knowledge life cycle; intellectual culture

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*Corresponding author



INTRODUCTION

The construction of corporate knowledge should take place in accordance with modern challenges. For Ukraine, these are, first of all, challenges caused by a full-scale Russian-Ukrainian war – security, economic, environmental, energy, social, national identity, etc. These challenges are compounded by globalisation and systemic crises that also affect political and socio-economic processes. Under these conditions, it is necessary to simultaneously solve a whole range of tasks – operational, tactical, and strategic, which often require new knowledge and generate unexpected knowledge. Due to objective factors, problems are changing, and business strategies that were effective during the peace period are losing their relevance and need to be adapted to new realities. In the context mentioned above, there is a need to construct corporate knowledge based on new experience, which must be systematised, accumulated, and formed into appropriate knowledge bases, enriching the established theories of knowledge management and knowledge management practices, considering current challenges, transformational changes, and forecasting future trends.

For this reason, it is advisable to distinguish two main aspects of the problems outlined in the paper. The first aspect is related to the identification of the exact knowledge, that corporations need today to maintain their functioning and have a perspective of development in the post-war period; the second aspect is related to management procedures, that is, the process of construction and development of knowledge, which are components of the knowledge management cycle. The answer to the question of what kind of knowledge is relevant today has not only applied significance, but also a theoretical value, since it will complement the existing classification of knowledge. The second aspect reflects the features of transformation of the knowledge management life cycle model under the influence of current factors.

The analysis of recent publications indicates the presence of a wide range of scientific developments that reflect the conceptual, methodological, technological, and applied aspects of the outlined problems. Researchers pay considerable attention to the problems of knowledge management, which is obvious given their role in increasing the competitiveness of the organisation, as stated, in particular, by N. Butenko (2015), noting that “the concept of knowledge management in corporations today is an integral part of the strategic process, and its implementation creates objective prerequisites for acquiring sustainable competitive advantages, which is especially important in the context of unpredictable changes in the market environment.” This idea is supported by M.V. Rudenko & V.O. Kryvoruchko (2016), who substantiate the need to create a “new management model” based on knowledge. T.G. Busareva (2019) examines the creation of corporate knowledge through the prism of globalisation challenges and draws attention to the strategic tasks of knowledge management in multinational corporations. Corporate knowledge significantly affects the activation of innovative development, as stated in a paper

by S.M. Illiashenko *et al.* (2017), which emphasises that “the competitiveness of individual organisations and national economies as a whole is largely ensured by the ability to produce and effectively use new relevant knowledge that allows quickly identifying and strengthening comparative competitive advantages, bringing internal development opportunities (innovative development potential) into line with external ones.” Similar opinions are expressed by V. Korolkov *et al.* (2021) in a paper in which the researchers emphasise the managerial aspects of knowledge construction for innovative renewal of enterprises. Knowledge performs its important role as an activator of innovation and an important factor of competitiveness due to functions that have also become the subject of inquiry by many researchers, in particular, the essential understanding of knowledge through functions is illustrated by I.G. Shavkun & Ya.S. Dybchynska (2013), highlighting the following main functions of knowledge: analytical, distribution, security, integration, and the function of creating new knowledge. Theoretical aspects of organisational knowledge management are covered in the monograph by M.V. Martynenko (2013), which combines knowledge management theories and knowledge management methods. A fresh look at knowledge already in the conditions of “shock changes in the external environment” is offered by O.A. Doronina & A.V. Aliarova (2022), who considered problems of knowledge renewal in the context of personnel strategy, logically substantiating this by the fact that the carrier of knowledge and the creator of new knowledge is a person.

Thus, classical and modern scientific developments in the subject sphere of economics and knowledge management reflect the evolutionary path of transformation of the economy and the life cycle of knowledge construction. Dynamic changes in economic processes require the addition of these theories and concepts, considering new challenges, problems, and applied tasks, which was the goal of this study.

MATERIALS AND METHODS

The methodological base of the study is formed in accordance with the goal and contains a regulatory component, a theoretical component, presented by monographic studies, periodicals, and the results of expert assessments in the subject area. Legislative and regulatory acts of the Verkhovna Rada of Ukraine (Law of Ukraine No. 2732-IX, 2022) and the Cabinet of Ministers of Ukraine (Draft Law No. 2710-IX “On the State Budget of Ukraine for 2023”, 2022), official materials of the State Statistics Service of Ukraine (n.d.), which reflect trends and forecasts of the socio-economic situation in Ukraine caused by the war, and focus on the feasibility of building corporate knowledge necessary for developing a strategy for changes and anti-crisis measures. Statistical information on the state of the Ukrainian labour market in regional and segment terms (Tarasovsky, 2023) has become the basis for assessing the consequences of transformation processes in the market and predicting demand for new corporate knowledge.

The methodological basis of the study is a set of methods that ensure the methodological integrity of the research, in particular: analysis and synthesis – to analyse modern challenges and their impact on the development of new knowledge; combinational grouping – to determine current requests for new knowledge and group them by priorities; system method – to reveal the essence of corporate knowledge through the prism of knowledge economics and knowledge management, that is, the unity of content (corporate knowledge) and form (the process of construction and development of corporate knowledge), and to streamline the principles of the development of corporate knowledge. In the context of the process of corporate knowledge construction, a model of the knowledge management life cycle based on the use of the modelling method is proposed. The use of the statistical method allowed forming a statistical base, highlighting informative data on the state of the labour market in modern conditions, threats and problems of an economic, social, and security nature.

RESULTS AND DISCUSSION

Considering the dynamic influence of the knowledge economy on the transformation processes of society, the authors of this study developed the hypothesis that corporate knowledge is not just the sum of individually acquired professional knowledge of each employee of the corporation, but it is the synergy of effective joint action of the entire team aimed at implementing its mission. This conscious joint action begins with the first step, from the start and ends at the “finish line”, to which all team members must come. In fact, awareness of joint action is the key note for achieving an effective result and a happy finish, since it implies not only a desire to share your knowledge, but also creates a sense of personal responsibility for the entire life cycle of knowledge. At the same time, a synergistic joint action generates the emergence of corporate knowledge, when through the prism of the exchange of various personal experiences and acquired knowledge that is not yet inherent in the corporate system and its subsystems, new corporate knowledge, system-forming connections, properties and behaviours arise. In this context, researchers have drawn attention to the need to group corporate knowledge.

The study suggests considering new knowledge that has become relevant in the context of a full-scale Russian-Ukrainian war in Ukraine, and which allows updating sources of corporate knowledge.

1. Knowledge of labour market transformations to reorient business processes and determine a place in the market. The source of this knowledge is statistical information that provides data on the state of the economy, demography, ecology, etc. As of 1 January 2022, Ukraine's population stood at 34.5 million people, as evidenced by Draft Law No. 2710-IX “On the State Budget of Ukraine for 2023” (2022). Russia's full-scale invasion on February 24, 2022, caused the biggest crisis in the Ukrainian labour market. As of 10 January 2023, there were 7.96 million Ukrainian citizens abroad who fled Ukraine due to Russia's invasion,

according to UN data (Operational data portal, n.d.). Of these, about 4.93 million Ukrainians live in Europe. More than 3 million people may be in Russia and Belarus. Before the war, employers in Ukraine posted more than 100,000 vacancies on Internet sites every month. But already in March, the number of labour offers decreased by 15 times. Since then, the labour market has gradually grown on a monthly basis and entered 2023, recovering by half from pre-war levels. In general, in 2022, vacancies in the labour market decreased several times, and at least 5 million (up to 40%) Ukrainians lost their jobs. In December 2022, there were 35% fewer new candidates on the labour market than in December 2021 (The “bleak” state..., n.d.). Against the background of migration of Ukrainians abroad, joining the ranks of the Armed Forces of Ukraine, and power outages, the total number of people of working age in the labour market has decreased. Employers have already announced a forecast for 2023 about a possible shortage of qualified personnel if Ukrainians do not start returning from abroad. If hundreds of thousands of Ukrainians remain abroad after the war, then soon Ukraine may face not the problem of unemployment, but a shortage of labour (The “bleak” state..., n.d.). And overcoming this challenge requires new corporate knowledge of the Ukrainian business environment.

Ultimately, Ukrainians are actively integrating into the European labour market, paying taxes there, and European employers are interested in specialists from Ukraine. “The Czech Republic will hire thousands of specialists from Ukraine to work in its military factories,” said a representative of the Czech Defence Ministry T. Kopechny (Thousands of Ukrainians..., 2022) – “for decades, specialists have been trained in Ukraine that our country does not have now. Therefore, the work of Ukrainian engineers and technicians will strengthen the defence capabilities of the Czech Republic, Ukraine and NATO at the same time”. According to a survey conducted by UNHCR (United Nations High Commissioner for Refugees), the adult population of migrants from Ukraine consisted mainly of women (87%), 65% of whom were of working age (18-59 years), almost 70% had higher education (Operational data portal, n.d.). Therefore, in Poland, since the beginning of a full-scale war, according to an expert assessment by the Centre for Migration Research at the University of Warsaw, Ukrainians have paid PLN 10 billion (about USD 2.4 billion) of taxes (Ukrainian refugees uphold..., n.d.). According to the calculations of the National Bank of Ukraine, the additional contribution of Ukrainian migrants to the annual GDP growth rates of the Czech Republic, Poland, and Estonia will be about 1.2 percentage points per year, to the GDP (gross domestic product) of Hungary, Latvia, Slovakia, Lithuania and Romania – almost 0.8 percentage points (Tucha *et al.*, 2022). The European Central Bank predicts that the participation rate of Ukrainian refugees of working age in the labour force of Eurozone countries will be from 25% to 55% in the medium term. Estimates of potential labour force growth across the EU (European Union) are 0.2-0.8%, or 0.3-1.3 million people (Botehlo, 2022). The situation in the Ukrainian labour market is shown in Table 1.

Table 1. Ukrainian labour market as of December 2022

Dynamics of restoration of frontline regions	Offer leaders	The most necessary specialists
Kherson Oblast – 66%	Kyiv Oblast – 155,990 vacancies	Sales consultant – 4,273 vacancies with an average salary of UAH 12,000.
Mykolaiv Oblast – 34%	Lviv Oblast – 5,916 vacancies	Sales manager – 3,725 vacancies with an average salary of UAH 20,000.
Donetsk Oblast – 30%	Dnipropetrovsk Oblast – 4,782 vacancies	Accountant – 2,042 vacancies with an average salary of UAH 15,000.
Kharkiv Oblast – 10%	Odessa Oblast – 3,173 vacancies	Driver – 1,859 vacancies with an average salary of UAH 22,000.
	Ivano-Frankivsk Oblast – 1,912 vacancies	Cook – 1,596 vacancies with an average salary of UAH 14,000.

Source: created by the authors based on Yu. Tarasovskiy (2023)

The average salary in Ukraine during 2022 was at the level of UAH 15,000. At the same time, the largest salary was offered in the Kyiv Oblast – UAH 17,500 and remotely – UAH 22,500. In the forecast for 2023, employers include salary increases from 8% to 30%, depending on the type of economic activity, but it will depend on the military and economic situation in Ukraine. It is worth noting that the largest salaries in December were offered for the following positions: international driver – UAH 40,000, car painter – UAH 35,000, realtor – UAH 30,000, diesel mechanic – UAH 29,000 (due to the increase in the use and need for maintenance of autonomous generators); cleaners – UAH 8,000 (Tarasovsky, 2023).

Another new example of corporate knowledge acquisition in 2022 is that the labour market has almost completely Ukrainised. In December 2022, employers posted 89% of vacancies in Ukrainian and only 8% in Russian, but in 2014 the circumstances were almost the opposite: 16% of vacancies in Ukrainian and 80% in Russian (Tarasovsky, 2023). The growth of natural Ukrainocentrism in the national business environment is a good sign of national unity and a guarantee of future economic achievements.

New corporate knowledge acquired during the war transforms the labour market and develops current business processes, social processes, communication and ideological processes in various types of economic activity. In particular, the executive director of the Association “IT Ukraine” K. Vasyuk notes that “in the face of war and numerous challenges, the IT industry, together with the whole country, demonstrates phenomenal resilience. The industry remains the only export industry in Ukraine that fully operates in wartime, maintains the country’s economic front, actively helps the army and supports a powerful volunteer movement” (IT Ukraine, 2022).

Most technology companies were able to ensure the continuity of business processes and maintain productivity at the level of 85-90% in the first month of the war, and starting from April, restore positive growth dynamics. Absolutely all IT companies faced problems related to the war. According to the study “IT in the economy of Ukraine”, more than 34.3% of companies have successfully adapted to the new realities of martial law, 61.3% – that is, the

vast majority of IT companies have not overcome all the challenges, but in general they work stably. As of the beginning of 2022, almost 307 thousand IT specialists worked in the Ukrainian IT industry (IT Ukraine, 2022). In the spring of 2022, up to 57,000 specialists (20%) left Ukraine, 7,000 people (2.5%) were mobilised, and 228,000 specialists (80%) remained in Ukraine, according to calculations by the Lviv IT Cluster (Dudko, 2022). However, there is a risk that after the opening of borders, up to half of the industry will decide to emigrate. As a result of Russia’s full-scale invasion of Ukraine, 70.8% of IT companies carried out unplanned relocation, a quarter of them – complete. Another 16.7% of companies have fully or partially moved abroad (IT Ukraine, 2022). The geography of the movement of enterprises changed and at the beginning of December 2022, most of all it was to the following countries: Poland, Germany, USA, Portugal, Bulgaria, Czech Republic, Romania, Moldova, Spain, and Canada. Almost 81.5% of IT companies displaced abroad still plan to return their business to Ukraine, subject to the abolition of martial law and the complete cessation of hostilities, and 93.4% of IT companies plan to continue investing in Ukraine (IT Ukraine, 2022).

Among the biggest challenges for Ukrainian enterprises during the war were: migration of personnel; movement of business entities; prohibition of departure of those liable for military service abroad; mobilisation of specialists. At the same time, during the war, Ukrainian entrepreneurship has acquired new experience, skills, and new business processes that are rapidly forming modern multidimensional corporate knowledge. Therefore, a significant component of modern corporate knowledge and corporate culture was the regular transfer of funds to help the state, the purchase of military ammunition, equipment, drones, necessary equipment and weapons to accelerate the victory over the Russian enemy (IT Ukraine, 2022).

2. Knowledge on security activities is multifaceted and covers a wide segment of knowledge on financial and economic security; information security; psychological and behavioural security, environmental safety, etc. In conditions of war, security activities are considered differentially not only in accordance with different categories of personnel, but also in the region, that is, highlighting relatively

calm areas where business is present and dangerous, where organisations have completely curtailed their activities or moved, restructuring to safe places (Botelho, 2022). Ensuring the safety of organisational personnel requires knowledge of how to act in extreme conditions and how stress factors affect people's mental health, and what priority measures can mitigate this impact.

3. Knowledge related to mental health and emotional stability. In addition to assessing the situation, which is dynamically changing, there are questions about the safety of personnel and knowledge related to mental health and emotional stability is needed here. Since the psychological security of the individual depends not only on the organisationally formed preventive measures, but also on the psychological structure of each person, therefore, knowledge about those qualities that form the psychological structure of personal security and knowledge that are responsible for ways to acquire skills, skills of safe behaviour is necessary (Zaitseva-Chipak, 2021). This is cross-knowledge at the intersection of psychology and management, which in the conditions of war and post-war times are a priority because statistics on the psychological state of the population is disappointing and many people need psychological and emotional support (Government portal of Ukraine, 2022). Knowing what tools should be used to maintain mental health allows preserving the internal resources of a person and the human potential of the organisation.

4. Knowledge related to the skills of psychological adaptation and flexibility in war conditions is a continuation of the previously identified category of priority knowledge today and in the near future. This knowledge is intended to help a person reach such a level of adaptation that it will ensure the dominance of rational thinking and perception of the situation over emotional feelings. The task of adaptation is to consciously adapt to the situation and find a way to respond to the new reality. This task requires the search for a new adaptation mechanism that can use constructive protection tools and reduce stress, and save energy for the revival of working capacity. The rate of adaptation varies, and in war conditions, the intensity of adaptation is much higher than in a peaceful period. There is a significant change in values and priorities, so knowledge from the adaptation mechanism is supplemented by the study of the motivational structure of the individual. In the corporate knowledge system, it is necessary to integrate knowledge from the cognitive and behavioral sphere and management and economics. This combination of this knowledge will contribute to individual and collective psychological stability. The sources of acquiring this knowledge are different – their own, quickly acquired experience, or using the experience of countries experiencing military consequences, such as Israel or Georgia.

In this context, it is worth paying attention to a number of studies (Microsoft Japan's 4-day..., 2019; Haraldsson & Kellam, 2021; Workers in Belgium..., 2022), in particular a large-scale international experiment on the transition to a four-day working week. In one of these experiments, 33

companies from countries such as the United States, Ireland, Australia and 903 employees participated in 2022 (4 day week pioneering..., 2022). Companies that participated in the experiment rated their experience at 9 points out of 10 possible. None of them returned to the five-day working week, because for employees, the extra day off turned out to be so valuable that 70% are not going to return to the "5 for 8" mode if they are not offered a salary increase from 10% to 50%. The study shows that: an additional day off without a salary reduction does not reduce the income of companies, but on the contrary, their revenue increased by 38% compared to the same period of the previous year, and the number of absenteeism and layoffs decreased. Under these conditions, employees experience less stress and burnout and are generally more satisfied with their lives. Participants in the experiment did not feel an increase in the intensity of work and they did not have to work "through force" for an additional weekend. "Employees have become more focused, interested, and dedicated," and the four-day week "has changed both business and people" (4 day week pioneering..., 2022).

Recommendations and initiatives for business entities on how to support their team emotionally and psychologically, show flexible adaptive policies and corporate social responsibility are relevant in war conditions. They have become a role model and an example of integrity that helps strengthen the reputation capital of organisations and government agencies, in particular public service institutions (The psychology of war..., 2022). The adaptability and productivity of using new corporate knowledge, and readiness for any scenario of events and the availability of several options for responding to the risks of Ukrainians, along with modern transformations in the national labour market, impresses the international community, partners and clients of Ukrainian enterprises.

5. Knowledge of change strategy. New working conditions during the war prompted the need to review working conditions and form new standards and change the principles of work and management style. The experience gained quickly in these conditions has already laid the foundations and transformed into new knowledge, supported by practice. The modern strategy of change should comprehensively combine the main elements of crisis management, anti-stress management, and adaptive management, which will contribute to the development of antifragility, develop the ability to see the situation holistically from different angles, quickly assess it and make non-standard decisions due to the emergence of unexpected knowledge that can appear on an intuitive level, arise from semi-consciousness or already acquired experience during the war. In this context, corporate knowledge about the procedure for reserving employees who are not subject to conscription for military service during mobilisation is important. In particular, enterprises, institutions and organisations that have mobilisation tasks, if the reservation is necessary for their implementation, will be able to reserve their personnel for a period of half a year with the possibility of extension

for up to six months. Heads of such enterprises and their deputies are subject to reserving regardless of their military rank, age, or military speciality. No more than 40% of the staff must be reserved for military service. It is possible to raise the limit with the separate approval of the General Staff (Law of Ukraine No. 2732-IX, 2022). The combination, both systematic and dynamic, of all elements of the change strategy will allow not only preserving the business, but also solving problems economically and forming anti-crisis plans in advance.

The above and other types of knowledge that were needed during the war become basic knowledge; this is knowledge about the present. For the development of business entities, it is already necessary to think about what knowledge will become a priority in the future. Thus, the strategy of change should be supplemented by a development strategy: individual, corporate, intellectual, human capital development, and corporate potential development. And having identified priority corporate knowledge in the conditions of modern realities, proceed to the process of knowledge construction, considering the stages of the corporate knowledge management life cycle model, in which the stage of knowledge exchange and transfer is distinguished.

Mentoring plays an important role in the transfer of knowledge, and therefore it is advisable to develop an

intellectual culture of relationships to effectively transfer knowledge in the process of their corporate development.

Intellectual culture reflects the ability to work together and create in the process of knowledge exchange (culture of joint work), since knowledge is a value. People's relationships around the value of knowledge, which is the foundation of any culture, also arise at other stages of the knowledge life cycle. Therefore, intellectual culture should be present at all stages. In the context of management intellectualisation and ideological and value transformations of society, it is advisable to lay the cultural foundation at the stage of creating new knowledge, new innovations, and maintain it up to the stage of using knowledge. In particular, this is conditioned by the rapid spread of artificial intelligence, which is to a certain extent associated with economic security (intellectual security as a separate type). It is important to consider the culture of freedom and the culture of control and the culture of knowledge in the context of creative development and construction of corporate knowledge, the essential characteristics of which are highlighted by G.M. Zakharchin & Yu.M. Kosmina (2018).

Given the above, the process of constructing corporate knowledge in the context of developing the intellectual culture of an organisation can be considered through a sequence of time challenges (Fig. 1).

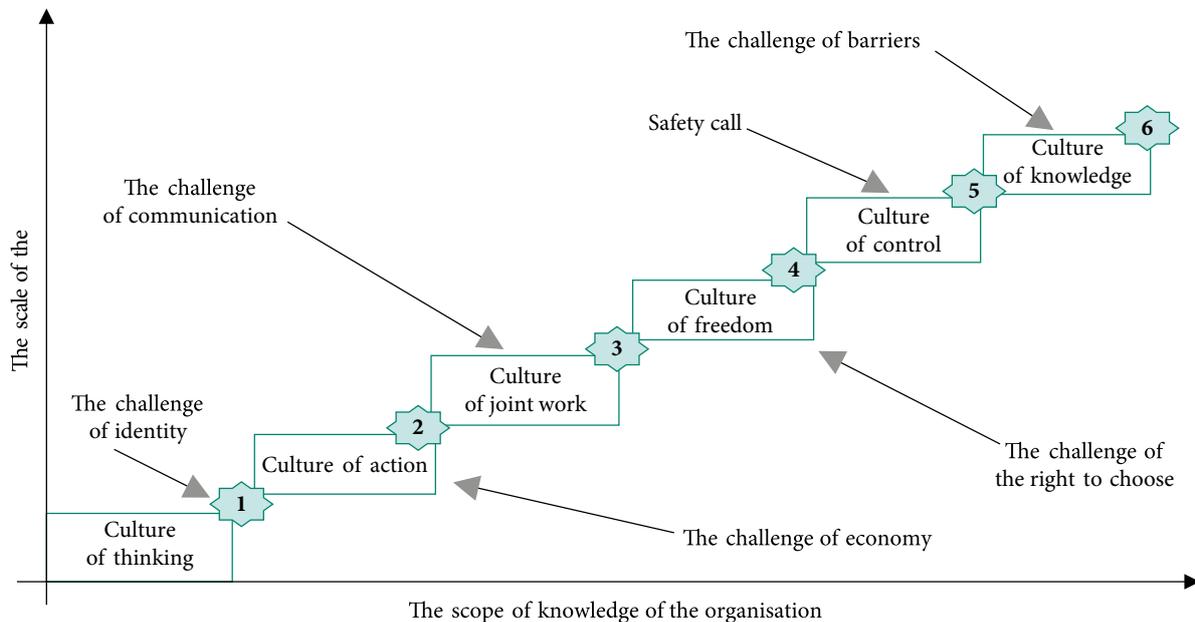


Figure 1. The process of constructing corporate knowledge in the context of the development of the organisation's intellectual culture through a sequence of challenges

Source: created by the authors

Considering new challenges, it is possible to develop the principles of corporate knowledge construction in these conditions, which are reflected in Table 2.

The principles listed in Table 1 provide a purposeful direction for the construction and development of corporate knowledge, showing not only strategic guidelines, but also relevant rules and procedures embodied in the

mechanism of knowledge generation and differ from those proposed in the literature not only in content, but also in their relevance. For example, T.G. Busareva (2019) draws attention to the strategic principles of corporate knowledge construction, limiting itself to three principles: "the principle of innovation orientation, economically feasible cooperation and specialisation, technological linking of

production and activities”. Systematicity contributes to the process of ordering spontaneously acquired knowledge in difficult war conditions and turning it into a complete system. Promptness shows how quickly new knowledge is

updated and emerging in time and space. In the process of forming corporate knowledge, the creative role is played by principles that reflect the synergistic effect of joint action and joint creation of new ideas.

Table 2. Principles of construction and development of corporate knowledge in modern conditions

Principles	Interpretation
Systematicity	Ensures the integrity of the knowledge system about the present in order to reduce risks in the future
Promptness	Fast filling of the knowledge base based on unexpected knowledge that spontaneously arose during crisis situations
Joint activity and creation	A conscious desire to share individual knowledge, which contributes to the creation of new knowledge, enriches the collective experience
Universality	Reflects the degree of dissemination of corporate knowledge within the organisation
Purposefulness	Provides a business recovery and development strategy
Adaptability	Reflects the ability to operate knowledge bases in critical environments

Source: compiled by the authors

The principle of universality reflects not only the dissemination of knowledge to the entire corporate community, but also the compliance of the purpose and content of the process of knowledge creation and development with the requirements for conditions that are constantly changing. The principle of purposefulness provides for a clear vision of the purpose of forming a knowledge base (this is in the general sense) and defining a range of specific problems and tasks that require knowledge to solve.

The ability to efficiently operate knowledge bases in critical conditions, quickly make decisions in non-standard situations reflects the principle of adaptability. The principles described above are part of the overall knowledge management process to ensure the effectiveness of using corporate knowledge in the new environment, the correct sequential-systematic process of creating a corporate knowledge management lifecycle model, which is shown in Figure 2.

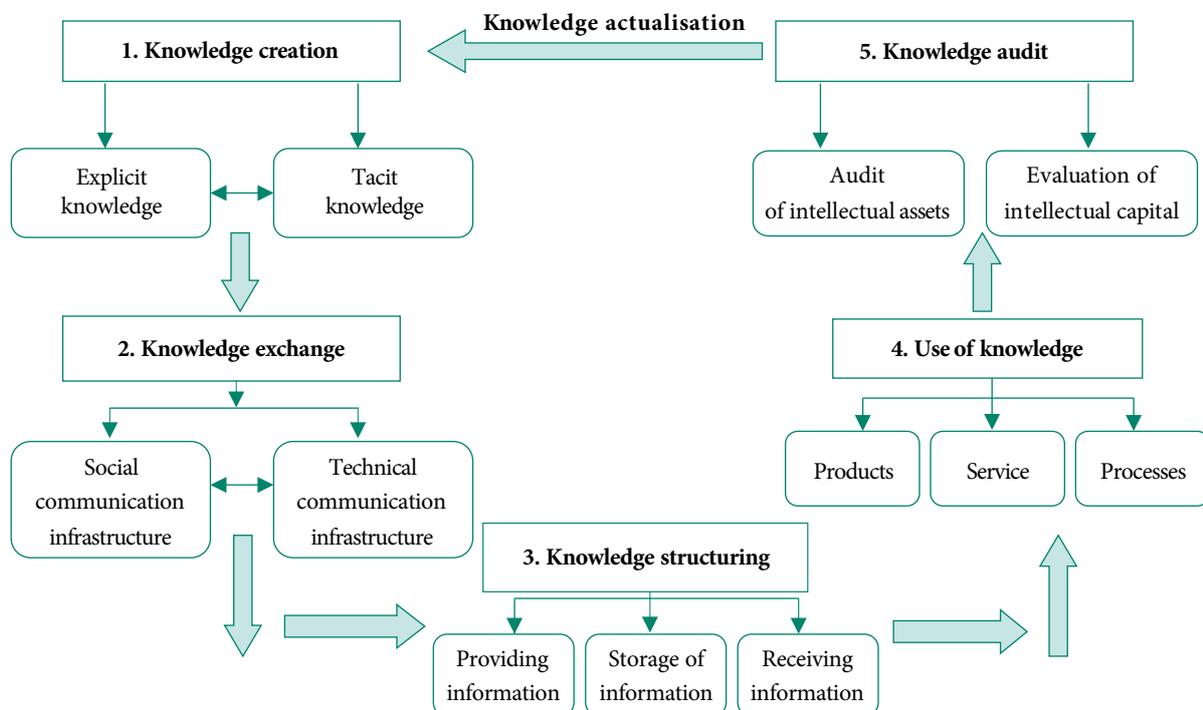


Figure 2. The model of the life cycle of corporate knowledge management

Source: created by the authors

The model of the corporate knowledge management life cycle proposed in Figure 2 expands the list and content of the stages of knowledge circulation, reflects the

classification aspects of knowledge (explicit knowledge and tacit knowledge at the stage of knowledge creation) to structure them, highlights the features of knowledge

exchange based on the principles that are reflected in Table 1, contains the stage of using knowledge in the context of the product segment, the segment of providing services and processes, and updating knowledge in accordance with new conditions. Thus, the knowledge management process covers not only the stages and tasks of knowledge construction, but also the possibilities of knowledge development through knowledge audit, assessment of their role in the implementation of the change strategy.

Scientific publications offer knowledge management systems, stages, and models that differ in structure, purpose, and content. In particular, the process of knowledge management through the prism of the structural and logical scheme of knowledge production is covered in the paper (Illiaszko *et al.*, 2017). Since the researchers considered corporate knowledge as an object of innovative development, they focused on the stage of knowledge production, which is only one of the stages of the knowledge life cycle. A similar approach to considering the process of forming corporate knowledge flows, based on the tasks and functions that knowledge performs in ensuring innovative economic development, is presented in a paper (Korolkov, 2021). A generalised model of knowledge management was proposed by K. Wiig (1997), highlighting the stages: creation and application of knowledge in production technologies and procedures, systematic research of knowledge, assessment of knowledge for each type of business. M.V. Rudenko & V.O. Kryvoruchko (2016), noting the complexity of adapting foreign knowledge management models to the Ukrainian environment, substantiate the feasibility of building a model based on a system-process approach that logically combines human potential, organisational procedures and business processes, but do not reflect the process of evaluating knowledge and updating knowledge under the influence of new challenges. N. Butenko (2015) suggests grouping corporate knowledge by characteristics that reflect the role of knowledge in ensuring the competitiveness of organisations, since there will always be a demand for this category of knowledge. Within this feature, the researcher identifies explicit and implicit knowledge, that is, pays attention to the form of manifestation of knowledge. O.A. Doronina & A.V. Aliarova (2022) support this opinion, but propose to supplement the grouping of corporate knowledge in accordance with new challenges and highlight knowledge that contributes to the establishment of “knowledge creators” aimed at increasing human potential, and instrumental knowledge necessary for the acquisition of digital literacy, which is requested in the context of the deployment of the digital economy. The researchers note that new competencies are needed for the development of “knowledge creators”, so considerable attention is paid to the list of these competencies. Approaches to grouping corporate knowledge are different due to the multidimensional nature of knowledge and depend on the goal that the researchers laid down as the basis for grouping and highlighting corporate knowledge.

The construction of corporate knowledge takes place on the basis of communications, and at all levels: individual, group (team), and corporate. With this in mind, communication management should also become part of the strategy of change, because now the experience has clearly crystallised, when interaction at the level of emotions during the war was gradually transformed into interaction at the level of knowledge exchange. The effectiveness of using corporate knowledge depends on the courage to translate new knowledge into life practice and further develop it. Acquired reflexive knowledge (individual experience of self-defence), unformalised knowledge, and those that spontaneously arose (unexpected knowledge) in the process of exchange between people are socialised into corporate knowledge, replenishing the corporate knowledge base and enriching the intellectual assets of the corporation. Due to the acquired and jointly created knowledge, staff co-development takes place in parallel, professional growth, knowledge exchange takes place, and the mental health of staff improves. Many Ukrainian organisations did not abandon the development of personnel, but, on the contrary, found appropriate forms of training adapted to the present and safety rules. Various tools are used for this purpose. For example, Farmak company has its own internal library of distance learning courses – a specially created distance learning portal (Courses and literature..., n.d.). Due to IT, employees update their professional knowledge, learn to acquire new skills, and in the process of learning, new knowledge appears that needs to be structured. To ensure security, organisations use various forms and locations of training: places of shelter, remote meetings, field meetings through the creation of various communication platforms, clubs based on professional and personal interests to communicate with like-minded colleagues, etc.

Consequently, the papers cover various approaches to knowledge management, including models and systems that consider the structure, target area, and construction of corporate knowledge. In addition, communication management is important for sharing knowledge and using it in practice, and forms of training and communication in organisations play a key role in staff development and collaboration.

CONCLUSIONS

In modern conditions, organisations are reviewing the priorities of their activities towards expanding the subject area of corporate knowledge in accordance with the challenges. The analysed statistical information on changes in the structure and reorientation of the labour market in Ukraine confirmed the demand for new knowledge and became the basis for grouping and outlining relevant knowledge groups that allow effectively restoring business processes and developing intellectual resources of the organisation. The emergence of new knowledge and the adaptation of basic knowledge to existing conditions determine the need to structure knowledge and form it on a different fundamental basis. Accordingly, the paper considers the process of construction and development of

corporate knowledge based on new principles (efficiency, consistency, joint work and co-creation, adaptability, universality, purposefulness) and elements of intellectual culture that should be present at all stages of this process. Effective management of corporate knowledge involves a set of organisational and economic actions embodied in the model of the life cycle of corporate knowledge management, which is presented in the study and holistically reflects the process of circulation and updating of knowledge in modern conditions.

The dynamics of processes show that in the future there will be a demand for new knowledge, new competencies, which, in turn, encourages the continuation of scientific research both in the theoretical and applied spheres. The experience gained during the war can be presented in the

form of theoretical and practical knowledge, appropriately structured. With further research, it is advisable to systematise knowledge, develop the classification of knowledge, and supplement it with new knowledge acquired today. In the applied sense, analyse which sources of knowledge are updated during crisis situations, and how to create an effective mechanism for using corporate knowledge to develop a promising strategy for economic recovery and intellectual potential development in the post-war period.

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CONFLICT OF INTEREST

None.

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Галина Миронівна Захарчин

Доктор економічних наук, професор
Національний університет «Львівська політехніка»
79000, вул. Степана Бандери, 12, м. Львів, Україна
<https://orcid.org/0000-0002-4081-7926>

Йосиф Степанович Ситник

Доктор економічних наук, доцент
Національний університет «Львівська політехніка»
79000, вул. Степана Бандери, 12, м. Львів, Україна
<https://orcid.org/0000-0001-8718-5738>

Формування та розвиток корпоративних знань у сучасних умовах

Анотація. У статті розглядаються питання, пов'язані із формуванням та розвитком корпоративних знань у сучасних умовах, зумовлених трансформаційними процесами в соціально-економічній сфері України через війну та інші виклики, які стимулюють потребу у нових знаннях. Необхідність швидкого реагування на ці запити актуалізує у теоретичному та прикладному плані окреслення предметного сегменту нових знань та їх використання. Мета статті полягає у висвітленні особливостей формування та необхідності розвитку корпоративних знань у сучасних умовах. Для досягнення поставленої мети у статті використано такі методи: аналізу і синтезу, системний метод, комбінаційного групування, моделювання, статистичний метод. У результаті дослідження узагальнено потребу у нових корпоративних знаннях і виділено такі основні групи: знання із переорієнтації ринку праці через війну; із безпекозабезпечувальної діяльності; пов'язані із ментальним здоров'ям та емоційною стійкістю; пов'язані із навичками психологічної адаптації і гнучкості в умовах війни; знання щодо стратегії змін, та наведено їхню характеристику. Обґрунтовано, що нові корпоративні знання, набуті під час війни, змінюють ринок праці та переорієнтовують теперішні бізнес-процеси, соціальні процеси, комунікаційно-світоглядні процеси у різних видах економічної діяльності, що вимагає перегляду принципів формування корпоративних знань. У результаті дослідження сформовано модель життєвого циклу управління корпоративними знаннями, використання якої підвищить ефективність обміну знаннями і використання інтелектуальних ресурсів та запропоновано процес формування корпоративних знань на основі чинника інтелектуальної культури. Висновки, які отримано за результатами дослідження, мають прикладну цінність і можуть бути корисними для представників бізнесу, державного сектору, закладів освіти та науки під час формування стратегій змін та розвитку і прогнозування тенденцій із метою удосконалення та оновлення бази корпоративних знань

Ключові слова: економіка знань; інтелектуальні активи; управління знаннями; ринок праці; персональний розвиток; стратегія змін; життєвий цикл знання; інтелектуальна культура

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Olha Podra*

PhD in Economics, Associate Professor
Lviv Polytechnic National University
79000, 12 Stepan Bandera Str., Lviv, Ukraine
<https://orcid.org/0000-0002-6081-6250>

Nataliia Petryshyn

PhD in Economics, Associate Professor
Lviv Polytechnic National University
79000, 12 Stepan Bandera Str., Lviv, Ukraine
<https://orcid.org/0000-0003-4642-1778>

Theoretical and methodological aspects of analysing the foreign economic activity of enterprises

Abstract. It is important for enterprises to determine exactly the current reserves for the development of export activities and, based on them, make adequate and objective management decisions regarding the further implementation of foreign economic activity. Therefore, the purpose of the study is to develop a comprehensive methodology for analysing foreign economic activity based on the determination of factors of the external and internal environment of the enterprise functioning, which affect the analysis of foreign economic activity, as well as the study of the process of implementing a comprehensive methodology for analysing foreign economic activity of the enterprise, based on the consistent implementation of stages: the stage of information and analytical support, the analytical and calculation stage, and the management stage – analytical processing of calculations and the formulation of reasonable conclusions. The study used the following methods: dialectical, analysis and synthesis, comparison, theoretical generalisation, and tabular method. The process of implementing a comprehensive methodology for analysing the foreign economic activity of the enterprise is considered, which provides an opportunity to obtain complete and objective information on the state of implementation of the foreign economic activity of the enterprise, the development and implementation of the foreign economic strategy. Recommended indicators of a comprehensive methodology for analysing the company's foreign economic activity are proposed, which are grouped into four main categories: indicators of export growth and growth rates, relative export indicators, efficiency indicators, and structure indicators. The generalised theoretical provisions obtained in the course of the study can be used in the activities of enterprises to analyse foreign economic activity

Keywords: analysis; metrics; integrated methodology; indicators; competitiveness

INTRODUCTION

In the current conditions of globalisation of economic activity, there is a significant increase in the interdependence of the world's economies and industrial internationalisation in many industries. Foreign economic activity of

business entities becomes multifaceted and is not limited only to trade in goods or services with foreign counterparties, but also provides for operations related to capital flows and scientific and technical exchange. The globalisation of

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*Corresponding author



world economic processes has a qualitative impact on export-import activities and requires a constant increase in the competitiveness of products or services to ensure the survival of the enterprise in dynamic conditions, maintain and expand competitive positions, and increase the level of efficiency of activities. Under such conditions, there is a need for constant collection, processing, and analysis of the economic activity of the enterprise, including foreign economic activity, and therefore, both conventional and new methods of analysing foreign economic activity at the enterprise become relevant, which serve as an information basis for evaluating and developing further foreign economic strategy of the enterprise.

Analysis of the foreign economic activity of an enterprise requires the use of a set of various methods and tools based on certain theoretical principles and methodological approaches, provides for the definition, systematic, comprehensive study, measurement, and generalisation of factors that affect the results of foreign economic activity (FEA) through the processing of a system of information sources in special ways to improve the effectiveness of foreign trade relations (Hrynyshyn, 2014). Nowadays, there are quite a large number of methods for analysing foreign economic activity. Their diversity is associated with the need to evaluate not only the results of foreign economic activity, but also consider and analyse factors of the external and internal environment, which requires the introduction and use of a certain set of analysis methods to obtain a reliable assessment. On the other hand, an attempt to use alternative methods within a certain area of analysis indicates that there is a problem of choosing the best set of methods for analysing foreign economic activity by a specialist (Babinets & Pankivska, 2022).

Recently, the analysis of methods of foreign economic activity has become increasingly relevant. In particular, O.L. Lavryk & K.O. Kotliar (2018) examined the features of using the latest methods of analysing the foreign economic activity of enterprises, adapted to the uncertainty and weak predictability of the modern foreign economic environment. The researchers systematised the methods of analysing the environment of foreign economic activity of the enterprise, in particular STEP analysis, SWOT analysis, SPACE analysis, and the GE/McKinsey model.

In the study by O.H. Melnyk *et al.* (2021), the main groups of indicators are substantiated: absolute, relative, structures, and efficiency, providing an objective and comprehensive assessment of foreign economic activity and the recommended system of target indicators for assessing the effectiveness of import management is proposed.

Analysis of foreign economic activity is a necessary process for enterprises, as it allows them to identify possible reserves for improving its efficiency and development (Lobacheva *et al.*, 2022). The state of economic analysis in modern conditions can be described as an abstract and logical way of cognition, which is aimed at expanding the scope of application and modifying its functions and tasks in order to adapt to new conditions of functioning. The

studies show that modern types of foreign economic analysis will focus on:

- deeper study of market needs;
- thorough investigation of the effectiveness of investment activities;
- in-depth analysis of the credit and competitive component of enterprises of all forms of management;
- study of priority areas of activity;
- research of consumer requirements regarding the quality of goods and the quality of services provided.

The analysis of foreign economic activity is based on certain methods, i.e., means that ensure the achievement of the goals of the analysis. At the same time, there is a theoretical and practical interest in the fact that in the conditions of increasing instability and unpredictability of the development of the international economy, conventional methods of analysing the foreign economic activity of the enterprise remain objective and adequate, acting as an information basis for assessing its effectiveness and developing a further foreign economic strategy of the enterprise. Despite the existence of a large number of studies on this topic, methodological aspects of analysing foreign economic activity, adapted to modern conditions of uncertainty and weak predictability of the foreign economic environment, require further research.

The purpose of this study was to generalise existing theoretical provisions and develop practical recommendations for the development of a comprehensive methodology for analysing foreign economic activity of enterprises to ensure its effectiveness, implement foreign economic strategies based on the use of reliable and objective information, and the adoption of rational management decisions. Considering the set goal, the key tasks were to study conventional methods of analysing foreign economic activity, determine the factors of internal and external environment that affect the analysis of foreign economic activity, investigate the process of implementing a comprehensive analysis methodology, develop a list of recommended indicators of a comprehensive methodology for analysing foreign economic activity of an enterprise.

THEORETICAL FOUNDATIONS OF FEA ANALYSIS

Many studies are devoted to the theoretical aspects and methodological approaches to the analysis of foreign economic activity of enterprises. O.O. Maslak & V.I. Zhezhukha (2011) thoroughly investigated the key stages of the analysis of foreign economic activity, in particular: determining the purpose and objectives of the analysis, developing a hypothesis and theoretical prerequisites for the study, drawing up an analysis programme and determining research methods, collecting information, processing and presenting conclusions based on the results of the analysis. In addition, researchers suggest that for the analysis of foreign economic activity, in addition to qualitative, quantitative, absolute, and relative indicators, it is appropriate to use cost

and natural indicators. M.O. Stadnyk (2011) investigated the components of the analysis of the foreign economic activity of an enterprise, in particular, considerable attention is paid to the development of a comprehensive approach to the analysis of foreign economic activity, as well as the introduction of the balanced scorecard by R.S. Kaplan in the formation of the foreign economic strategy of an enterprise.

In the study by K. Nazarova *et al.* (2021), areas for improving organisational and aspects of auditing foreign economic activity of enterprises are substantiated, considering changes in trends in the development of foreign economic activity at the micro and macro levels. The features of applying internal methods (risk acceptance, transfer of risk through foreign currency contractual payments, risk diversification in the form of using various foreign currencies, hedging) and external methods (loans in foreign currency, deposits in foreign currency, transfer of risk through hedging derivatives (futures, options, swap contracts) of currency risk management in the accounting system of an enterprise as an effective management tool are considered. The researchers paid considerable attention to improving the accounting of the foreign economic activity of the enterprise.

V. Kushniruk & T. Ivanenko (2017) analysed theoretical, methodological, and practical aspects of the development of foreign economic activity of Ukrainian enterprises at the regional level. Based on the analysis of the volume of commodity and geographical structure of foreign trade of enterprises of the Mykolaiv Oblast, the reasons that complicate it are established, and it is also emphasised that in order to ensure the efficiency and competitiveness of the national economy, it is necessary to stimulate the export of finished products, not raw materials.

Noteworthy is the study by K. Flissak & T. Drakokhrust (2021) on determining the impact of national policy in terms of stimulating economic diplomacy on the foreign economic activity of enterprises, ensuring export expansion in international markets and intensive investment cooperation with foreign investors. The practical significance of the research is to find out the current state of mechanisms of economic diplomacy in certain European countries, trends in their development, and potential consequences for the economic potential of other states (in particular Ukraine) on the basis of the introduction of effective mechanisms for promoting national interests abroad.

S. Tkalenko *et al.* (2020) assessed the relationship of Ukraine's foreign trade with the main macroeconomic indicators in the context of deepening the processes of globalisation and increasing the dependence of the development of the national economy on exogenous determinants. The value of the study lies in the fact that theoretical provisions and conclusions can become a methodological basis for expert assessment in substantiating the priorities of modernisation of state policy regarding the conditions and factors of promoting the development of export-oriented sectors of the national economy. A.E.M. Azhar (2020) investigated the impact of risks on the foreign economic activity of enterprises and determined the importance of risk manage-

ment in the enterprise for effective management of foreign economic activity. In particular, the risk management model is considered as a subsystem of the functional structure of the enterprise, risk management methods and application of optimisation methods, decision-making and control over their implementation and management are analysed.

O.D. Tryfonova & Ye.S. Doroshkevych (2017) analysed the influence of external and internal factors on foreign economic activity based on the study of the volume of export and import operations by commodity and geographical structure in dynamics, and established the reasons for changes in the volume of exports and imports in Ukraine. The study concerns the analysis of the country's foreign economic activity as a whole, without considering micro-economic aspects.

As stated by K. Zelga (2017), to stay in business, companies must predict and accurately assess the situation, take effective action, never stop developing in a changing environment, and implement structural changes. These determining factors are necessary not only for the survival of companies and the restoration of balance in an unstable environment, but also for the development of dynamic plans to ensure the smooth and efficient operation of companies, competitive advantages, and further development.

D. Huo *et al.* (2020) determined the significant impact of labour costs, foreign direct investment, and other important factors on the development of export potential and competitiveness of agricultural enterprises. The researchers found that the markets of developing countries with a higher level of competitiveness can mainly be concentrated in clusters with a lower level when it comes to exports. The results of this study can help in addressing the impact of geographical economic factors on the competitiveness of export activities of agricultural enterprises in developing countries.

E. Pakhucha *et al.* (2021) substantiated the necessity and significance of studying financial risks, which are a constant factor in the activity of any enterprise. The researchers investigated existing methods for determining and evaluating the competitiveness of agricultural products in the context of globalisation. As a result of the research, it was found that Ukrainian exporters of agricultural products have competitive advantages, and in order to increase competitiveness, it is necessary to introduce innovative technologies and a scientifically based business model, adhere to a strategy aimed at creating unique values in certain parameters, which will allow them to occupy a certain market niche and increase market share, use a direct export policy, avoiding unnecessary intermediaries and unnecessary costs.

From the considered papers, it is clear that it is important to focus on theoretical aspects, methodological approaches and organisational aspects of the analysis of foreign economic activity of enterprises, improving accounting, effective management of currency risks and stimulating export expansion. The studies also highlight the importance of developing economic diplomacy and cooperation with foreign investors to ensure the economic potential of enterprises and the national economy.

METHODOLOGICAL PRINCIPLES OF FOE ANALYSIS

Enterprises that carry out foreign economic activity should, first of all, take care of ensuring its effectiveness based on conducting an appropriate objective, thorough analysis and assessment through the use of appropriate methodological tools. There is no generally accepted methodology for analysing the foreign economic activity of an enterprise. For the analysis of foreign economic activity, the following is most often used: deterministic factor analysis, including comparison, generalisation, detail, elimination; standard methods include absolute and relative values, indices, series of dynamics, statistical observation, grouping, average values; mathematical (modelling, analysis, statistics, integral method, probability theory, economic cybernetics); heuristic (brainstorming, expert assessment method); special methods (SWOT analysis, PEST analysis, portfolio analysis, SNW (DuPont model analysis) (Hrynyshyn, 2014).

At the same time, in order to analyse the development of export-import activities of business entities, it is appropriate to define and substantiate a system of indicators. These indicators must meet the following requirements: reliability, optimality, complexity, consistency, comparability, representativeness, manageability, timeliness, adaptability, and accuracy orientation. L. Lisova (2008) notes that to assess the foreign economic activity of an enterprise, it is necessary to use slightly different indicators, which are more simplified, but quite accurately reflect the result of conducting foreign economic activity. Such indicators are divided into quantitative and qualitative. Quantitative indicators are used to demonstrate quantitative changes or reflect the total volume of foreign economic operations. While qualitative changes describe the rationality of funds invested in certain foreign economic activities. There are separate indicators of the structure, which include the commodity, geographical and institutional structure of foreign economic relations (Lisova, 2008).

When conducting a qualitative analysis of the company's activities, such techniques and methods as: STEP analysis, SWOT analysis, SPACE Analysis, GE/McKinsey model are used. Given the lack of generally accepted methods for evaluating and analysing foreign economic activity, O.L. Lavryk & K.O. Kotliar (2018) propose to introduce a comprehensive approach to analysing the effectiveness of foreign economic activity, based on a study of the environment and the results of foreign economic activity.

Interpretation of information, analysis, and audit of foreign economic operations depend on the type and size of the foreign market in which the company operates, the type and volume of its trading operations. It is worth noting that audit and analysis is impossible without an appropriate information base created in the accounting subsystem of a business entity, which directly provides for the development of information support for foreign economic activity of the enterprise (Smerichevsky *et al.*, 2021).

Any enterprise is an open system that operates in an environment that is exposed to many factors that create

certain opportunities and, if used in a timely manner, ensure increased management efficiency. Other factors, on the contrary, may pose a threat and be an obstacle to the successful functioning of the business entity, in which case the primary task, in order to ensure effective management, is to minimise their negative impact. The factors of the internal environment that affect the analysis of the foreign economic activity of the enterprise include the goals of the enterprise to improve economic results; the qualifications of employees of the foreign economic activity department; the level of technological and software; the level of innovation implementation at the enterprise; the level of product quality and its compliance with European and international standards; the ability to move production to different countries, etc.

The factors of the external environment that influence the analysis of the foreign economic activity of the enterprise should include: the macroeconomic situation; the level of investment attractiveness; the level of competition in the foreign market; the variability of consumer demand; the level of income of consumers; legislative acts regulating the activities of related enterprises; the development of production technologies and information technologies; socio-environmental initiatives, etc.

Factors of the external and internal environment differ by enterprises, scope of activity, scale, and other characteristics, but any enterprise needs to respond flexibly to changes in certain factors, since the results of its economic activity directly depend on this. Therefore, each enterprise engaged in foreign economic activity should implement its comprehensive economic analysis, which consists of the consistent implementation of three main stages: the stage of information and analytical support, the analytical and calculation stage, and the management stage – analytical processing of calculations and the formation of reasonable conclusions (Karachyna *et al.*, 2021). The stage of information and analytical support involves the study of a wide range of environmental factors that affect the enterprise that carries out foreign economic activity; determination of the specific weight of foreign economic activity in the total volume of economic activity of the enterprise; analysis and processing of information in financial reporting forms; distribution of expenses and income by types or directions of foreign trade operations. At the analytical and calculation stage, a hierarchical system of diagnostic indicators is established in order to implement an integral assessment of foreign economic activity, based on the definition of a system of diagnostic indicators for each foreign trade operation or area, the establishment of reference values of diagnostic indicators and their comparison with the calculated actual values, the calculation of an integral indicator of foreign economic activity efficiency. The management stage involves the development and adoption of appropriate management decisions based on the conclusions drawn in the process of processed calculations. Thus, the consistent implementation of the main stages of a comprehensive methodology for analysing the company's foreign economic activity provides an opportunity to conduct a

comprehensive assessment of its actual state based on the calculation of the system of diagnostic indicators and their comparison with reference values, which contributes to the determination of reserves for the functioning and development of foreign economic activity and the adoption of rational management decisions (Karachyna *et al.*, 2021).

When analysing the foreign economic activity of an enterprise, there is a problem of finding the optimal system of indicators that would comprehensively provide information about its current state, trends, development problems, and efficiency. To analyse the company's foreign economic activity, it is necessary to develop basic parameters for a comprehensive methodology for analysing foreign economic activity, which will allow comparing the real state of the object with regulatory or reference values in order

to identify deviations and their causes. One of the main problems of developing a system of comprehensive methods for analysing foreign economic activity at enterprises is the selection of the list and composition of the analysed indicators. The recommended indicators of a comprehensive methodology for analysing the company's foreign economic activity can be grouped into four main groups:

- indicators of export growth and growth rates;
- relative export indicators;
- export performance indicators;
- structure indicators.

For more information, the recommended indicators of a comprehensive methodology for analysing the company's foreign economic activity and the specifics of their calculation are presented in Table 1.

Table 1. Recommended indicators of a comprehensive methodology for analysing the company's foreign economic activity

Indicators	Calculation formula	Explanation of formulas
1	2	3
Indicators of export growth and growth rates		
1. Export growth rate	$TGR\ ex. = \frac{Erp}{Eb}$	<i>Erp</i> – export volume for the reporting period; <i>Eb</i> – export volume for the base period;
2. Export increase rate	$TIR\ ex. = GR\ ex.rp - GR\ ex.b$	<i>GR ex.rp</i> – growth rate for the reporting period; <i>GR ex.b</i> – growth rate for the base period;
2. Relative export indicators		
1. Export profitability	$Pf = \frac{He}{Ce} \cdot 100\%$	<i>He</i> – export receipts in UAH, which are calculated by converting foreign currency earnings in UAH at the NBU exchange rate on the day of receipt of foreign currency earnings; <i>Ce</i> – cost of production of export goods;
2. Cost index	$I\ cost = \frac{(\sum_{i=1}^m Q_i \cdot Z_i)}{\sum_{i=1}^m Q_o \cdot Z_o}$	
3. Physical export volume index	$I\ phys.\ vol. = \frac{\sum_{i=1}^m Q_i \cdot Z_i}{\sum_{i=1}^m Q_o \cdot Z_o}$	<i>Zi</i> and <i>Qi</i> – prices and quantity of the <i>i</i> -th product in the reporting period; <i>Zo</i> and <i>Qo</i> – price and quantity of the <i>i</i> -th product in the base period;
4. Export quantity index	$I\ quantity = \frac{\sum_{i=1}^m Q_i}{\sum_{i=1}^m Q_o}$	<i>m</i> – number of products;
5. Export price index	$I\ price = \frac{\sum_{i=1}^m Q_i \cdot Z_i}{\sum_{i=1}^m Q_i \cdot Z_o}$	<i>Zi</i> – average product price in the base period;
6. Index of quantitative export structure	$I\ struct. = \frac{\sum_{i=1}^m Q_i \cdot Z_i}{\sum_{i=1}^m Q_i \cdot Z_o.c}$	<i>Zo.c.</i> – average product price in the base period;
7. Average product price	$Z\ o.\ c = \frac{\sum_{i=1}^m Q_o \cdot Z_o}{\sum_{i=1}^m Q_o}$	
8. Coefficient of fulfilment of export obligations by value	$E_{f.v} = \frac{\sum_{i=1}^m Q_a \cdot Z_a}{\sum_{i=1}^m Q_p \cdot Z_p}$	<i>Za</i> – actual price of the <i>i</i> -th product; <i>Qa</i> – actual quantity of the <i>i</i> -th product;
9. Coefficient of fulfilment of export obligations by price	$E_{f.p} = \frac{\sum_{i=1}^m Q_a \cdot Z_a}{\sum_{i=1}^m Q_p \cdot Z_p}$	<i>Zp</i> – planned price of the <i>i</i> -th product; <i>Qp</i> – planned quantity of the <i>i</i> -th product;
10. Coefficient of fulfilment of export obligations by physical volume	$E_{f.ob} = \frac{\sum_{i=1}^m Q_a \cdot Z_a}{\sum_{i=1}^m Q_p \cdot Z_p}$	<i>m</i> – product quantity;

Table 1, Continued

1	2	3
3. Export performance indicators		
1. Currency efficiency of exports	$E_{c.e.} = \frac{\sum_{i=1}^m Pe \cdot Ne}{\sum_{i=1}^m Ce \cdot Ne}$	<p>Pe – currency (foreign trade) price of a unit of the i-th export product or service, gross profit per unit; Ne – quantity of the i-th product included in the export equivalent, unit; Be – discounted costs for the production and sale of a unit of the i-th product or service, UAH/unit; m – number of items of goods and services in export equivalent.</p>
2. Absolute export efficiency	$E_{ex.abs.} = \frac{R_{ex} \cdot K_{pi} \cdot K_{kp}}{C_{sold.ex.}}$	<p>$R_{ex.}$ – revenue from the export contract; $C_{sold.ex.}$ – total cost of products sold for export K_{kp} – currency coefficient for converting national currency to foreign currency.</p>
3. Economic impact of exports	$E_e = C_{ex} \cdot K_{vi} \cdot K_{kp} - P_{ex}$	<p>Economic impact of exports is calculated as the difference between the volume (price) of output (by commodity items) for export (and the cost of its production).</p>
4. Economic efficiency of export products sales	$E_{eff.ex.} = \frac{R_{for.cu.}}{C_{sold.ex.}}$	<p>$R_{for.cu.}$ – revenue in foreign currency converted into UAH at the official exchange rate; $C_{sold.ex.}$ – total cost of products sold for export;</p>
5. Economic efficiency of selling export products on the domestic market	$E_{dom.mark.}^{ex.} = \frac{Q_{ex} \cdot P_{dom}}{C_{prod}}$	<p>P_{dom} – price of products similar to those exported on the domestic market; C_{prod} – production costs for the entire batch of export products.</p>
4. Structure indicators		
1. Product structure	Distribution of exports and imports by main product items.	
2. Geographical structure	Distribution of foreign economic operations by country groups and regions.	

Source: developed by the authors based on Y.G. Kozak & N.S. Lohvinova (2012), N.M. Tyurina & N.S. Karvatska (2012)

The application of an integrated approach to the selection of indicators for analysing the effectiveness of foreign economic activity of the enterprise ensures the implementation of an objective assessment of the state of its foreign trade operations and promotes the use of an effective export strategy of the enterprise, which creates conditions for increasing the level of competitiveness in the market.

CONCLUSIONS

As a result of the study, methodological approaches to analysing foreign economic activity of enterprises are generalised, it is established that in the scientific literature and practice, there is no one universal methodology for analysing foreign economic activity in the conditions of dynamic changes and complex forecasting of the external environment, which, in turn, complicates the process of forming a complete and objective array of information that can be used to make adequate, timely management decisions, develop and implement a foreign economic strategy. It is established that the process of analysing foreign economic activity uses many traditional and latest methods, in particular, deterministic factor analysis; standard methods based on the use of absolute and relative

values, indices, dynamics series, statistical observation, etc.; mathematical methods, in particular, the method of mathematical modelling, economic cybernetics, analysis, statistical methods, integral method, etc.; heuristic methods; special methods, including SWOT analysis, PEST analysis, SPACE analysis, GE/McKinsey model, SNW (DuPont system of analysis), etc. The necessity of using a comprehensive methodology for analysing the foreign economic activity of an enterprise is substantiated, which will ensure the implementation of a comprehensive assessment of its actual state based on the adequacy of calculations of key indicators and an integral indicator for evaluating the effectiveness of the foreign economic activity, which acts as the basis for the development and adoption of rational management decisions on the implementation of foreign economic activity. It is proposed to combine the most significant indicators of foreign economic activity analysis into four groups, the use of which will ensure an objective assessment of the state of foreign economic activity of the enterprise. Prospects for further study may be related to the development of alternative methods within a certain area of analysis of the company's foreign economic activity, considering its features and specifics.

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CONFLICT OF INTEREST

None.

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Ольга Павлівна Подра

Кандидат економічних наук, доцент
Національний університет «Львівська політехніка»
79000, вул. Степана Бандери, 12, м. Львів, Україна
<https://orcid.org/0000-0002-6081-6250>

Наталія Ярославівна Петришин

Кандидат економічних наук, доцент
Національний університет «Львівська політехніка»
79000, вул. Степана Бандери, 12, м. Львів, Україна
<https://orcid.org/0000-0003-4642-1778>

Теоретико-методичні аспекти аналізування зовнішньоекономічної діяльності підприємств

Анотація. Підприємствам важливо визначати саме актуальні резерви розвитку експортної діяльності і на їх основі прийняти адекватні та об'єктивні управлінські рішення, що стосуються подальшого здійснення зовнішньоекономічної діяльності. Тому мета дослідження полягає у формуванні комплексної методики аналізування зовнішньоекономічної діяльності на основі визначення чинників зовнішнього та внутрішнього середовища функціонування підприємства, що впливають на аналізування зовнішньоекономічної діяльності, а також дослідження процесу здійснення комплексної методики аналізування зовнішньоекономічної діяльності підприємства, на основі послідовної реалізації етапів: етапу інформаційно-аналітичного забезпечення, аналітично-розрахункового етапу та управлінського етапу – аналітичного опрацювання розрахунків та формування обґрунтованих висновків. У дослідженні використовувалися такі наукові методи: діалектичний, аналізу та синтезу, методи порівняння та теоретичного узагальнення, табличний метод. У ході дослідження надано процес здійснення комплексної методики аналізування зовнішньоекономічної діяльності підприємства, що забезпечує можливість отримання повної та об'єктивної інформації щодо стану здійснення зовнішньоекономічної діяльності підприємства, формування та імплементації зовнішньоекономічної стратегії. Запропоновано рекомендовані показники комплексної методики аналізування зовнішньоекономічної діяльності підприємства, що об'єднані в чотири основні групи: показники темпів приросту і росту експорту, відносні показники експорту, показники ефективності, показники структури. Отримані в процесі дослідження узагальнені теоретичні положення можуть бути використані в діяльності підприємств для аналізування зовнішньоекономічної діяльності

Ключові слова: аналіз; показники; комплексна методика; індикатори; конкурентоспроможність

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E-mail: info@eem.com.ua

www: <https://eem.com.ua/uk>

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Lviv Polytechnic National University

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E-mail: info@eem.com.ua

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