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Green bonds as a perspective financial instrument for bank investment in Ukraine

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Abstract. Banks, as the main institutional participants in the securities market, play an important role in ensuring green investment processes, positioning themselves as socially and environmentally responsible financial institutions, which confirms the relevance of the research topic. The purpose of the study is to disclose the essence of green bonds as a new financial instrument on the international and Ukrainian stock market and to determine the prospects for their inclusion in the investment portfolio of the banks of Ukraine. The study uses general scientific and special methods of scientific cognition: analysis and synthesis, induction and deduction, horizontal analysis method, graphical method, comparative legal method, and analytic hierarchy process. The authors clarify the interpretation of the economic essence of the concept of "green bonds". The peculiarities of the formation of the global market for these financial instruments and trends in its formation in 2007-2022 are investigated. The legislative framework for regulating the national green bond market is elaborated. The advantages and disadvantages of including green bonds in the investment portfolio of Ukrainian banks are determined. The optimal tool for improving the formation of a bank investment portfolio based on such criteria as liquidity, profitability and riskiness, taking into account general banking goals, is determined and the role of green bonds as potential investment instruments for banks is characterised based on the data obtained. Barriers to the formation of green investment policy by banks and ways to overcome them are described. The practical significance of the obtained results lies in the fact that the implementation of the suggested recommendations for removing barriers to environmentally oriented investments by Ukrainian banks will help to revitalise the financing of environmental projects, and the developed proposals for enhancing the formation of investment portfolios by Ukrainian banks can be used by financial institutions to increase their financial stability and minimise the risk of investment transactions

Keywords: green financing; environmental projects; renewable energy; banks' investment portfolio; derivative financial instruments; stock market

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● INTRODUCTION

The unfolding of conflicts at the international level and the impact of external aggression have caused the destruction of production and non-production infrastructure, as well as the disruption of the ecosystem of Ukraine, which leads to the loss of environmental objects, significant emissions

of toxic substances into the atmosphere and hydrosphere, the energy crisis, etc. This stipulates the necessity to use new financial instruments of the stock market, in particular green bonds, to finance ecological projects to restore the Ukrainian economy and ecology after the upheavals

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mentioned above. The formation of the market for these debt securities is closely connected with the coordinated work of banking institutions as the main institutional participants of the capital markets that are able to accumulate temporarily free funds quickly and use them effectively, in particular, investing them in the implementation of environmental projects, which stipulates the relevance of the research topic.

The works of scientists from Ukraine, China and Sweden are devoted to the peculiarities of green bonds international and national market formation, as well as their role as an investment tool for banks. In particular, A Dubko (2022) in his work substantiates the need for the introduction and development of the market for these debt financial instruments in Ukraine during the legal regime of martial law, outlines their current legal status and reveals the meaning of the concept "green financing". It is worth paying attention to the scientific work of N.V. Dunas (2021), where current global and national trends and initiatives in the formation of the market for these debt financial instruments in the context of COVID-19 have been analysed. N.O. Dugienko & M.K. Mikhailutsa (2020) consider potential opportunities for the implementation of environmental projects in Ukraine and their investment attractiveness, and also highlight an important problem of modern green financing – greenwashing. O.O. Liubic & A.O. Svystun (2020) focus on the ability of state-owned development banks, in particular the Public Joint-Stock Company of the Joint-Stock Bank "UkrGasbank" (PJSC AB "UkrGasbank"), to be leading financial institutions in the issuance of sustainable development bonds, including green ones, as they better identify the needs of the Ukrainian economy in monetary resources. A wide range of green banking tools is covered in the article by the well-known scientist V. Chala (2021), particularly: green banking lending, green mortgages, green bonds, green bank co-investment, green bank asset securitisation. I. Okhrymenko & K. Pyivoda (2021) suggest including new financial instruments, in particular green bonds and derivatives, in the investment portfolio of Ukrainian banks in order to hedge currency and interest rate risks.

Chinese scientists (Wang *et al.*, 2022) model the process of optimising Chinese enterprises operation by issuing green bonds from the perspective of choosing a sustainable development vector as it is done worldwide. While Swedish experts (Maltais & Nykvist, 2020) examine the development of the green bond market in Sweden and describe the impact of these securities on attracting market participants to sustainable development.

However, despite the large number of scientific developments, little attention is paid to the consideration of green bonds as a promising financial instrument of banking investment, as well as to the improvement in the investment portfolio formation by banks of Ukraine in the modern conditions of the destructive influence of endogenous and exogenous factors.

The goal of the study was to reveal the economic essence of green bonds as a new debt financial instrument on the global and national securities market and outline the prospects for their inclusion in the investment portfolio of Ukrainian banks.

In accordance with the set goal, the following tasks had to be solved in the process of scientific research:

1) to describe stages and characteristic features of the international and Ukrainian green bond market formation, indicating the dynamics in the volume of global issuance of these debt financial instruments for the period of 2007-2022;

2) to summarise advantages and disadvantages of including green bonds in the investment portfolio of Ukrainian banks;

3) to identify obstacles to the formation of an environmentally oriented investment policy by Ukrainian banking institutions and ways to overcome them.

The scientific novelty of this paper lies in the fact that the authors have developed proposals for improving the formation of the investment portfolio by banks of Ukraine taking into account the primary goals of the banking sector in modern destabilising conditions and have provided recommendations for levelling barriers on the way to the formation of an environmentally and socially oriented banking investment policy.

● MATERIALS AND METHODS

The research methodology is based on the application of general scientific and special scientific methods. Methods of analysis and synthesis have been applied to carry out a critical review of the literary sources of scientists of Ukraine, Belgium and the Philippines regarding the definition of the economic essence of "green bonds" term and to form our own interpretation of this scientific category. The application of induction and deduction methods made it possible to investigate the development of the green bond market at the international and Ukrainian levels. The method of horizontal (trend) analysis helped to determine the dynamics in the volume of the global emission of these debt financial instruments and the graphic method made it possible to visualise the obtained results. A critical review of the current legislation provisions on the regulation of processes related to the functioning of the green bond market has been carried out using the comparative legal method.

To make a decision regarding the choice of the optimal tool for improving the formation of the investment portfolio by banks of Ukraine and to determine the role of green bonds in this process, the hierarchy analysis method (hereinafter – HAM) has been applied. This method was developed by the American mathematician T. Saati (Usov, 2019) and is used throughout the world for decision-making in various areas: from management at the international level to solving sectoral and private problems in business. As a result, the relative importance of the investigated alternatives for all criteria in the hierarchy is determined and expressed numerically in the form of priority vectors. The vector values obtained in this way are estimates on a ratio scale, interpreted in the scientific work of V.A. Vovk & O.V. Havrylchenko (2022) (Table 1), and they correspond to the so-called hard estimates.

The system of paired evaluations of judgments leads to a result that can be presented in the form of an inverse-symmetric matrix.

The component of the matrix eigenvector and the priorities vector were calculated according to formulas (1-2):

$$w_i = \sqrt[n]{\prod_{j=1}^n a_{ij}}, \quad (1)$$

$$w_{norm} = w_i / \sum_{i=1}^n w_i, \quad (2)$$

Table 1. Ratio scale based on HAM

Stage	Definition	Explanation
1	Equal importance	Two factors contribute equally to achieving the goal
3	Moderate dominance of the i-th factor over the j-th	There are insufficiently convincing arguments in favour of the dominance of one of the factors
5	Significant advantage of the i-th factor over the j-th	There is evidence to prove the superiority of one factor over the other one
7	A significant advantage of the i-th factor over the j-th	Strong evidence in favour of one factor over the other one
9	The absolute advantage of the i-th factor over the j-th	The undeniable dominance of one factor over the other one
2, 4, 6, 8	Corresponding intermediate values	A situation where a compromise is needed

Source: developed by the authors based on V.A. Vovk & O.V. Havrylchenko (2022)

where w_i – is a component of the matrix eigenvector (the average value of the priority ratings); w_{norm} – is a normalised vector of the matrix of pairwise comparisons (vector of priorities); a_{ij} – is values of matrix elements.

Formulas (3-5) were used to check the consistency of experts' opinions with the determination of the matrix eigenvalue, consistency index and relative consistency:

$$\lambda = \sum_{i=1}^n a_{ij} \cdot w_{norm} \quad (3)$$

$$I_c = (\lambda - n) / (n - 1) \leq 0.2, \quad (4)$$

$$CR = I_c / I_{CR}, \quad (5)$$

where λ – is the matrix eigenvalue; I_c – consistency index; I_{CR} – is the average value of the consistency index (for a 3x3 matrix it makes 0.58); CR – consistency ratio; n – is the number of criteria (alternatives).

Then a pairwise comparison of alternatives was carried out according to each of the criteria; the overall priority for each option was determined and the best solution with the maximum value of the global priority was found.

During the research a group of 10 experts, being managers of JSC (Joint-Stock Company) "PRAVEX BANK", JSC "A-BANK", JSC "OTP BANK" and JSC "RAIFFEISEN BANK", was formed and anonymous individual survey based on the questionnaire method was carried out on February 21, 2023 by sending questionnaires to their e-mails. The respondents had to answer the following questions: do you believe that the optimal formation of the investment portfolio is one of the main ways to increase financial stability of a bank? Do you agree that the current state of investment portfolio formation by banking institutions of Ukraine needs improvement? Using a ratio scale, experts were asked to compare liquidity, riskiness and profitability as criteria for choosing the optimal direction of bank investments. Then they had an opportunity to match financial instruments based on each specified factor. Ethical norms were observed when working with managers of financial institutions during the survey (American Psychological..., 2017). The last stage was to compare the development goals of the banking sector and to match alternative investment objects to each general banking goal.

● RESULTS AND DISCUSSION

Current conditions of functioning of the Ukrainian economy under the influence of destabilising factors of exogenous and endogenous environment emphasise the importance of

smooth operation of the securities market. One of its priority goals is the accumulation of investment resources with the aim of directing them to the restoration of Ukrainian cities, the destroyed energy infrastructure after the abolition of the legal regime of martial law, ensuring the transition to a green economy and gaining energy independence given the accession of Ukraine to the UN Sustainable Development Goals (Resolution of the United Nations General Assembly..., 2015), and The Paris Agreement (2015), as well as the choice of a European development vector.

It is possible to achieve the specified goal through the use of a new debt financial instrument both on the international and on the national stock market – green bonds. One can find a large number of definitions of "green bonds" in scientific works of scientists from Ukraine, Belgium and the Philippines. In particular, O. Lyubich & A. Svistun (2020) in their scientific paper specify that green bonds are fixed-income securities that are placed to finance projects with specific environmental benefits. At the same time, O.V. Zayachkivska & O.V. Yakovchuk (2020) give a broader interpretation of this category, noting that green bonds are financial instruments through which the issuer receives a fixed amount of capital from investors and directs the raised funds to finance environmental projects, paying the nominal value to investors when the bonds are repaid, as well as the agreed amount of interest during their turnover period. Filipino experts in the banking sphere (Hyun *et al.*, 2021) have an opinion close to Ukrainian scientists and consider a new type of securities as debt instruments that finance exclusively projects with environmental benefits and therefore can reduce the negative impact of economic activity on climate change. In their interpretation of green bonds, a group of Belgian scientists (Ma *et al.*, 2020) additionally point out their differences compared to conventional debt securities, defining the studied concept as a type of fixed-income securities that attract funds for investment in pre-designed climate and environmental projects unlike conventional debt instruments, in which the use of proceeds is not stipulated in the terms. Thus, green bonds are a type of debt financial instruments of the stock market with a fixed interest rate, the funds raised from which are directed exclusively to the financing of new or existing projects with specific environmental effects, which emphasises the dual focus of such securities on the financial and social spheres.

Historically green bonds were issued for the first time by the European Investment Bank in 2007, and the funds

received from their placement were directed to financing projects to improve energy efficiency and the introduction of renewable energy sources (Gilchrist *et al.*, 2021). At that time these financial instruments were called “climate protection” bonds, then similar debt securities were called “climate” bonds and a year later they received the international name – “green”. Over the next 5 years other supranational financial institutions, in particular the International Bank for Reconstruction and Development (IBRD), the European Bank for Reconstruction and Development (EBRD),

the World Bank (WB) and the International Finance Corporation (IFC) began to issue them.

The general global trend in the development of the green bond market indicates a rather rapid and uneven dynamics of increasing the capitalisation of this segment of the international stock market. From the data shown in Figure 1 it can be concluded that over the past 15 years the volume of global green bond issuance has rapidly growing trends: from 0.86 billion US dollars in 2007 to 487.1 billion US dollars in 2022.

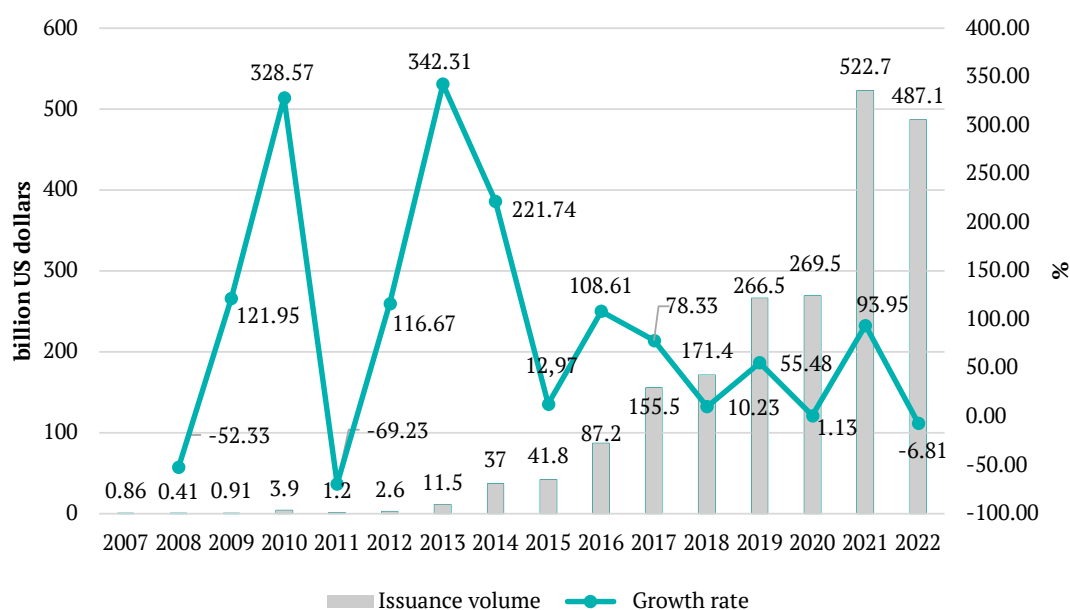


Figure 1. The volume of global issuance of green bonds during 2007-2022

Source: developed by the authors based on Official website of the Climate... (n.d.)

At the same time 2013 was the year of fundamental changes in the development of the market of these debt financial instruments, when companies and sovereign borrowers began to enter it and the growth rate of the issuance volume was 342.31% compared to 2012. The largest annual issuance of green bonds is observed in 2021 with a value of more than half a trillion – 522.7 billion US dollars. However, in 2022 this indicator decreased to 487.1 billion US dollars, i.e. by 35.6 billion US dollars or by 6.81%. This is explained by the fact that in the current conditions of the international stock market functioning macroeconomic trends are complicated by geopolitical instability (Marwan, 2022). At the same time the experts of the Climate Bonds Initiative (Official website of the Climate..., n.d.) (hereinafter – CBI) emphasise that there is a tendency in the global political space to believe that environmental considerations should occupy a central place in the recovery of economies after the crisis. In general, green bonds were placed in the amount of 2.06 trillion US dollars cumulatively for the period of 2007-2022.

It is worth noting that Ukraine is at the stage of strengthening both governmental and financial initiatives in the field of ensuring a safe environment for the population, which is outlined by the National Economic Strategy by the year 2030 (Resolution of the Cabinet of Ministers..., 2021) in accordance with world trends and European norms. In particular, it is envisaged to implement the principles of

sustainable development and a gradual transition to a green economy through the introduction of green bonds to attract investments in eco-modernisation and ecological projects.

The analysis of state policy principles in the sphere of creation and functioning of the Ukrainian market of these debt financial instruments demonstrates giving priority to the formation of the appropriate legislative framework. In particular, on July 1, 2021 the next edition of the Law of Ukraine “On Capital Markets and Organised Commodity Markets” (Law of Ukraine..., 2006) was published in the edition of the Law of Ukraine “On Amendments to Certain Legislative Acts of Ukraine on Simplifying Investment Attraction and Introducing New Financial instruments” No. 738-IX dated June 19, 2020 (Law of Ukraine..., 2020). It provides for the establishment of the legal basis for introducing green bonds into circulation as a separate class of securities and certain rules for professional participants of this market.

In order to ensure the development of the Ukrainian green bond market, on July 7, 2021, the National Commission on Securities and Stock Market (hereinafter – NSSMC) approved the recommendations on the implementation or financing of environmental projects through the issuance of green bonds, which were developed in accordance with the regulations of leading international market participants and specifically highlight environmental, social, and governance (ESG) standards adopted by the IFC. On February 23, 2022 the Cabinet of Ministers of Ukraine

(hereinafter – CMU) also approved the concept of the introduction and development of the green bond market in Ukraine for 2022-2023 (Order of the Cabinet of Ministers of Ukraine..., 2022) aimed to outline directions and tasks for the introduction of the market of these debt financial instruments.

The review and evaluation of potential environmental projects, which could receive financing due to the funds raised from the placement of green bonds began on July 5, 2021. In November 2021 the Private Joint-Stock Company “National Energy Company ‘UKRENERGO’” issued five-year green sustainable development Eurobonds under state guarantees in the amount of 825 million USD to repay the debt of the CMU to producers of electricity from renewable sources (Dubko, 2022). And a year later, in November 2022, despite the legal regime of martial law, the company made the first interest payment of 28.4 million USD on these bonds. However, it is worth noting that the first issue of these securities in Ukraine was carried out in 2019 by DTEK Limited Liability Company (DTEK LLC) to direct the received investment resources into renewable energy projects, as A. Dubko (2022) points out.

Prior to the unfolding of conflicts at the international level, the investment potential of financing multi-sectoral environmental projects of Ukraine, according to the IFC data, amounted to 73 billion US dollars until 2030, while it was expected that 36 billion US dollars could be attracted through the issuance of green bonds (Levandivskiyi *et al.*, 2022). Considering the development of the Ukrainian stock market based on the bank-centric model, ensuring

the growth of the green bond market largely depends on the bank performance in this segment of the securities market, in particular the investment sector, and its consistency with national strategic goals. Investing funds in the mentioned debt financial instruments provides banking institutions with a number of advantages, including: ability to diversify securities portfolio; creating additional opportunities for investing in environmental projects; providing green bonds with the full balance sheet of the issuer apart from cash flows from the implementation of green projects, which indicates the safety of investments; creating a positive image and reputation of the bank as a socially responsible financial institution; facilitating the implementation of strategic goals of the national environmental policy of Ukraine.

However, despite the listed advantages of including green bonds in the investment portfolio of banks, they are characterised by financial and operational risks not only on the Ukrainian securities market but also on the international market (Bedendo *et al.*, 2022), requiring timely regulation. Among them are: low liquidity, insignificant level of profitability, high revaluation in the stock market due to the excess of demand over supply, falling oil prices (Rublyk, 2020), as well as the spread of greenwashing.

Figure 2 presents a hierarchical structure of approaches to choosing the optimal tool for improving the formation of the investment portfolio by Ukrainian banks based on such criteria as liquidity, profitability and riskiness, taking into account the overall banking goals, developed by the authors independently.

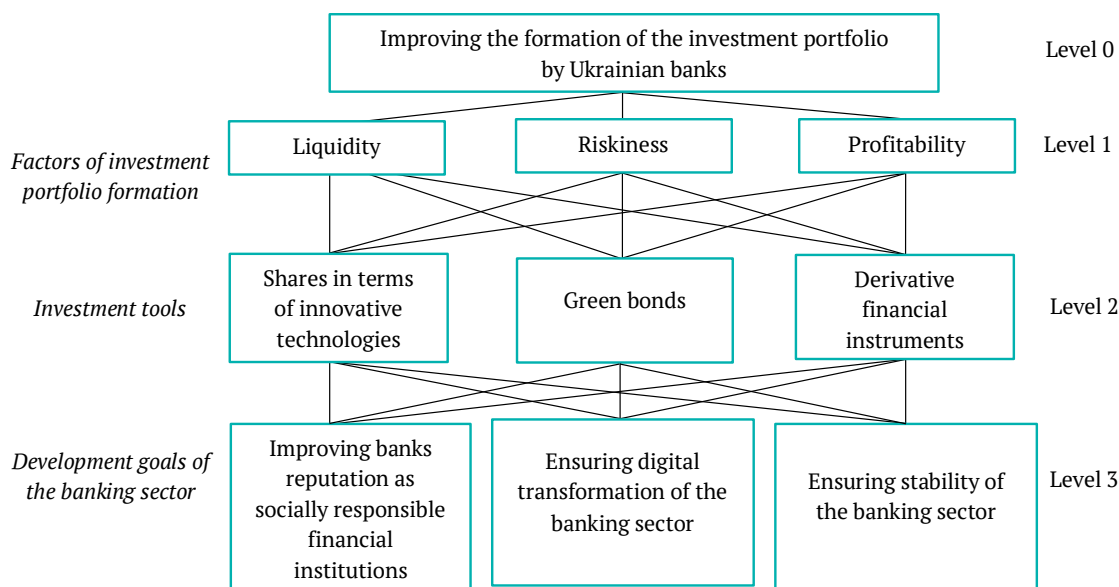


Figure 2. Three-level hierarchical model of approaches to choosing the optimal tool for improving the formation of the investment portfolio by Ukrainian banks

Note: The authors consider the criterion of riskiness regarding the smallest exhibit of this characteristic in the financial instrument
Source: developed by the authors

The next step is the construction of a matrix of paired judgments of experts on banks’ transactions with securities regarding the prioritisation of the factors of investment portfolio formation by banks (Table 2). According to the data calculated in Table 2, the most significant criterion for

choosing the optimal bank investment instrument is riskiness as its priority value equals 0.6466. Along with this, the least important factor is the liquidity of investments – 0.0732. Therefore, in the current destabilising conditions of the Ukrainian economy development it is expedient to

determine ways to reduce the degree of riskiness of securities, which, in turn, will encourage investments. The reliability of the obtained results is confirmed by the

consistency of experts' opinions, since the value of the consistency index does not exceed 0.2 and the relative consistency indicator is less than 0.1.

Table 2. Value of factors priority when choosing the optimal tool for improving the formation of the investment portfolio by banks of Ukraine

Factors of investment portfolio formation	Liquidity	Riskiness	Profitability	w_i	W_{norm}	λ
Liquidity	1	1/7	1/5	0.3094	0.0732	0.2216
Riskiness	7	1	3	2.7311	0.6466	1.9998
Profitability	5	1/3	1	1.1836	0.2802	0.8619
$S w_i$				4.2240		
$\lambda \max$				3.0834		
IC				0.0417		
CR				0.0719		

Source: developed by the authors

Next, it is necessary to determine the priority of financial instruments for each of the three factors of investment

portfolio formation by banks and calculate the global vector of priorities (Table 3-4).

Table 3. Priority value of tools for improving investment portfolio formation by banks of Ukraine for each factor

Investment tools	Shares in terms of innovative technologies	Green bonds	Derivative financial instruments	w_i	W_{norm}	λ
Liquidity						
Shares in terms of innovative technologies	1	7	2	2.3890	0.5897	1.7921
Green bonds	1/7	1	1/5	0.3094	0.0764	0.2274
Derivative financial instruments	1/2	5	1	1.3531	0.3340	1.0106
$S w_i$				4.0515		
$\lambda \max$				3.0301		
IC				0.0150		
CR				0.0259		
Riskiness						
Shares in terms of innovative technologies	1.00	0.25	0.33	0.4404	0.1222	0.3894
Green bonds	4.00	1.00	0.33	1.0996	0.3050	0.9847
Derivative financial instruments	3.00	3.00	1.00	2.0649	0.5728	1.8544
$S w_i$				3.6049		
$\lambda \max$				3.2284		
IC				0.1142		
CR				0.1969		
Profitability						
Shares in terms of innovative technologies	1	7	3	2.7311	0.6466	1.9998
Green bonds	1/7	1	1/5	0.3094	0.0732	0.2216
Derivative financial instruments	1/3	5	1	1.1836	0.2802	0.8619
$S w_i$				4.2240		
$\lambda \max$				3.0834		
IC				0.0417		
CR				0.0719		

Source: developed by the authors

Table 4. Calculation of the global priority of tools for improving the formation of the investment portfolio by banks of Ukraine considering the factors

Global priorities	Liquidity	Riskiness	Profitability	Global priorities
	0.0732	0.6466	0.2802	
Shares in terms of innovative technologies	0.5897	0.1222	0.6466	0.3033
Green bonds	0.0764	0.3050	0.0732	0.2233
Derivative financial instruments	0.3340	0.5728	0.2802	0.4733

Source: developed by the authors

Based on the results of the data analysis in Tables 3-4 it is possible to draw a general conclusion that according to the global vector of priorities the most appropriate alternative that would help improve the formation of the investment portfolio of Ukrainian banks is derivative financial instruments, since, compared to others, this direction of bank investments has the lowest riskiness, which was chosen as a priority factor, as well as the average level of liquidity and profitability after shares of innovative companies. Moving to the third level of the constructed hierarchy (Fig. 2), the

priority of the primary goals of the banking sector development should be established (Table 5). The most important goal of the Ukrainian banking sector in the conditions of the internal and external environmental instability is to ensure its stability. The priority value of this goal equals 0.7275. At the same time, according to the expert judgments improving the reputation of banks as socially responsible financial institutions in modern economic realities is not considered a priority task, which is proved by the indicator of the normalised vector of priorities being 0.0824.

Table 5. Priority values of the banking sector development goals, when choosing the optimal tool for improving the formation of the investment portfolio by the banks of Ukraine

Banking sector development goals	Improving the reputation of banks as socially responsible financial institutions	Ensuring digital transformation of the banking sector	Ensuring stability of the banking sector	w_i	W_{norm}	λ
Improving the reputation of banks as socially responsible financial institutions	1	1/3	1/7	0.3662	0.0824	0.2497
Ensuring digital transformation of the banking sector	3	1	1/5	0.8449	0.1901	0.5828
Ensuring stability of the banking sector	7	5	1	3.2325	0.7275	2.2549
$S w_i$				4.4436		
$\lambda \max$				3.0875		
IC				0.0437		
CR				0.0754		

Source: developed by the authors

Finally, it is worth determining the importance of the researched investment tools considering the overall banking goals and forming a global vector of priorities (Tables 6-7). Investing in derivative financial instruments is an optimal option for improving the formation of the investment portfolio by banks of Ukraine, taking into account the

realisation of goals of the banking sector. Unlike others, investments in these securities contribute most to sustainability, which is recognised as a priority goal. Derivatives play an important role in protecting against various kinds of financial risks and providing liquidity to other financial instruments.

Table 6. Priority value of tools for improving the formation of the investment portfolio by banks of Ukraine for each of the bank-wide goals

Investment tools	Shares in terms of innovative technologies	Green bonds	Derivative financial instruments	w_i	W_{norm}	λ
1	2	3	4	5	6	7
Improving the reputation of banks as socially responsible financial institutions						
Shares in terms of innovative technologies	1	1/7	3	0.7561	0.1507	0.4639
Green bonds	7	1	9	3.9245	0.7821	2.4415
Derivative financial instruments	1/3	1/9	1	0.3370	0.0672	0.2043

Table 6, Continued

1	2	3	4	5	6	7
Sw_i				5.0176		
$\lambda \max$				3.1097		
IC				0.0548		
CR				0.0945		
Ensuring digital transformation of the banking sector						
Shares in terms of innovative technologies	1	9	5	3.5120	0.7398	2.2992
Green bonds	1/9	1	1/4	0.3065	0.0646	0.1957
Derivative financial instruments	1/5	4	1	0.9290	0.1957	0.6019
Sw_i				4.7475		
$\lambda \max$				3.0967		
IC				0.0484		
CR				0.0834		
Ensuring stability of the banking sector						
Shares in terms of innovative technologies	1	1/4	1/6	0.3504	0.0866	0.2615
Green bonds	4	1	1/3	1.0996	0.2718	0.8321
Derivative financial instruments	6	3	1	2.5956	0.6416	1.9766
Sw_i				4.0456		
$\lambda \max$				3.0702		
IC				0.0351		
CR				0.0605		

Source: developed by the authors

Table 7. Calculation of the global priority of tools for improving the formation of the investment portfolio by banks of Ukraine considering the overall banking goals

Global priorities	Improving the reputation of banks as socially responsible financial institutions	Ensuring digital transformation of the banking sector	Ensuring stability of the banking sector	Global priorities
	0.0824	0.1901	0.7275	
Shares in terms of innovative technologies	0.1507	0.7398	0.0866	0.2161
Green bonds	0.7821	0.0646	0.2718	0.2744
Derivative financial instruments	0.0672	0.1957	0.6416	0.5095

Source: developed by the authors

The research suggests that the use of green bonds as an investment tool in Ukrainian banking institutions has not gained significant popularity compared to global trends and the market for these debt financial instruments is only at the initial stage of its development. The obtained results correlate with the findings of other scientists. In particular, O.S. Vavrychuk & A.A. Dovgan (2021) in their research emphasise the fact that the green bond market of Ukraine is at an early stage of forming and developing its ecosystem, is characterised by deformity, has a limited amount of resources and a narrow list of available financial instruments that can be used to attract investments in ecological projects. N.V. Dunas (2021) also adds the stakeholder identification processes, regulatory development, compliance and risk management standards to the above-stated features of

the initial stage of the Ukrainian green financing market formation. At the same time, the scientist states that the development and implementation of ecological projects in Ukraine are taking place at a rather slow pace, proving his conclusions with the following statistical data: the use of alternative energy sources, excluding hydropower, in the total volume of electricity production in Ukraine is 1.5%, while the value of this indicator in Germany exceeds 33%. At the same time, O.V. Zayachkivska & O.V. Yakovchuk (2020) emphasise the importance of developing this stock market segment, despite the initial steps for its formation, since the implementation of national strategic goals in the field of energy efficiency and renewable energy requires the accumulation of a significant amount of long-term financial resources. O.T. Levandivskyi *et al.* (2022) claim that in the

near future Ukraine has every opportunity to enter the international green bond market with its own debt financial instruments to finance national environmental projects.

It is worth paying attention to the fact that the further development of the Ukrainian green financing market will positively affect the key interests of stakeholders, namely: the country's population, public authorities, banking and non-banking financial institutions, joint investment institutions, private investors, etc. Financing environmental projects by investing in green bonds will have a beneficial effect on the quality of life of citizens, improve the state of the natural environment, serve as a driving force for the introduction of green technologies, as well as ensure the implementation of strategic provisions of economic, social and environmental policy and form a positive international image of the country. The obtained results correspond to the findings of other scientists.

Thus, O.V. Zayachkivska & O.V. Yakovchuk (2020) add opportunities to control cash flows directed to repay debts and to improve the investor rights protection, investing in environmental projects, to the above list of advantages of creating conditions for the issuance of green bonds in Ukraine. Y.V. Belinska (2021) emphasises the fact that economic benefits from developing the market of these debt financial instruments also consist in new jobs creation and increased revenues for budgets at all levels.

As for the participation of banking institutions in the further development of the green bond market in Ukraine and the achievement of sustainable development goals, O.O. Liubic & A.O. Svystun (2020) point out in their paper that the decisive factor in this issue is strengthening the role of state development banks as issuers of this type of securities. Compared to other second-tier banks and investment funds they have a greater risk-taking potential providing long-term financing. Moreover, M. Karlin & O. Ivashko (2020) suggest applying green investment lending in Ukrainian banking, which is a common practice abroad.

During the scientific research it was discovered that while carrying out investment transactions with green bonds Ukrainian banks bear a certain risk due to low liquidity, a small level of profitability and a significant revaluation on the stock market, since the demand for these securities is greater than the supply. I. Okhrymenko & K. Pyivoda (2021) approve of these findings. Thus, scientists recommend Ukrainian banks to invest in green bonds issued by foreign companies and emphasise that the investment process should be accompanied by highly trained professionals.

The main obstacles to the formation of an environmentally oriented investment policy of banks are: firstly, considering green financing mainly as unjustified expenses, which is confirmed by I. Tiazhkorob *et al.* (2020); secondly, high cost of green bonds compared to traditional financial instruments, which is also pointed out by M. Karlin & O. Ivashko (2020); thirdly, an uneven approach to the taxation of debt securities transactions, which is emphasised by A. Dubko (2022); fourthly, the high cost of environmental projects and their low investment attractiveness, which N.V. Dunas (2021) agrees with; fifth, a high risk of greenwashing in the green bond market, which is studied by N.O. Dugienko & M.K. Mikhailutsa (2020), as well as F. Baldi & A. Pandimiglio (2022); sixth, a significant share of banking institutions' investments in certificates of deposit

of the National Bank of Ukraine (NBU) and domestic government loan bonds (OVDP). O.S. Vavrychuk, & A.A. Dovgan, (2021) also add the lack of a clear strategy for the economic development in Ukraine based on the concept of "green growth" and mention the low level of coordination and mutual agreement in the actions of various authorities.

Moreover, according to the statistical data of the research agency Bloomberg (ClimateScope..., n.d.) Ukraine is in the 74th place among 136 world countries in terms of investment attractiveness in energy transition projects. Subject to stabilising a complex foreign and domestic political situation, providing financial assistance by partner international donor institutions and the elimination of the above-mentioned regulatory, institutional and financial-budgetary obstacles, the Ukrainian green bond market will become a fairly effective, liquid and safe segment for Ukrainian bank investments.

Therefore, the further development of the Ukrainian green bond market will contribute to the active accumulation of funds by investors of various categories and levels with the aim of financing environmental projects, creating conditions for improving the country's investment attractiveness and solving socio-economic and environmental problems, including those resulted from the COVID-19 pandemic and the unfolding of conflicts at the international level.

● CONCLUSION

The analysis of different points of view of researchers from Ukraine, Belgium and the Philippines regarding the interpretation of the economic meaning of the concept "green bonds" made it possible to formulate a universal definition of this term as a type of debt financial instruments of the stock market with a fixed interest rate, the funds raised from which are directed exclusively to the financing of new or existing projects with specific environmental effects, which emphasises the dual focus of such securities on financial and social spheres. As far as the peculiarities of the formation of the global and Ukrainian markets for these securities is concerned, it should be mentioned that green bonds were first issued at the international level in 2007, while the attempt to issue them in Ukraine took place in 2019 and they were introduced into circulation at the legislative level as a separate class of financial instruments in 2021. Thus, the national market of green bonds is at the initial stage of development. The study of the change in the volume of the global emission of these debt financial instruments during 2007-2022 suggests that it has a rather rapid and uneven dynamics with a distinctive reduction in 2022.

Taking into account the development of the Ukrainian stock market based on the bank-centric model, the importance of the banking sector in the development of the green bond market of Ukraine has been revealed. At the same time, applying the method of hierarchy analysis, we have discovered that derivatives are the optimal tool for improving the formation of the investment portfolio by Ukrainian banks among shares in terms of innovative technologies, green bonds and derivative financial instruments, as they are the least risky and ensure the stability of the banking system. The obtained results give evidence for insufficient awareness of green bonds potential as a new investment instrument by financial institutions in contrast to global trends. The subject of further research

is the substantiation of ways to improve the investment attractiveness of the Ukrainian green bond market and the development of methods for assessing the economic, environmental and social effects of banks investing in these debt financial instruments.

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● CONFLICT OF INTEREST

The authors declare no conflict of interest.

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Зелені облигації як перспективний фінансовий інструмент банківського інвестування в Україні

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Здобувач першого (бакалаврського) рівня освіти

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Анотація. Банки як основні інституційні учасники ринку цінних паперів відіграють важливу роль у забезпеченні процесів зеленого інвестування, позиціонуючи себе соціально та екологічно відповідальними фінансовими установами, що підтверджує актуальність теми дослідження. Метою роботи було розкриття сутності зелених облигацій як нового фінансового інструмента на міжнародному й українському фондовому ринках та визначення перспектив їх включення до інвестиційного портфеля банків України. У ході дослідження використано загальнонаукові та спеціальні методи наукового пізнання: аналіз і синтез, індукція і дедукція, метод горизонтального аналізу, графічний метод, порівняльно-правовий метод, метод аналізу ієрархій. Уточнено трактування економічної сутності поняття «зелені облигації». Досліджено особливості становлення світового ринку цих фінансових інструментів та тренди його формування у 2007-2022 роках. Опрацьовано законодавчу базу регулювання національного ринку зелених облигацій. Встановлено переваги та недоліки включення зелених облигацій в інвестиційний портфель банків України. Визначено оптимальний інструмент удосконалення формування банківського інвестиційного портфеля на основі таких критеріїв, як ліквідність, дохідність і ризикованість, з огляду на загальнобанківські цілі та на підставі отриманих даних охарактеризовано роль зелених облигацій як потенційних інвестиційних інструментів для банків. Описано бар'єри формування зеленої інвестиційної політики банками та напрями їх подолання. Практичне значення одержаних результатів полягає в тому, що реалізація запропонованих рекомендацій щодо усунення бар'єрів для здійснення банками України екологічно орієнтованих інвестицій сприятиме пошуків фінансування проєктів екологічного спрямування, а розроблені пропозиції з удосконалення формування інвестиційного портфеля українськими банками можуть бути використані фінансовими установами з метою підвищення їх фінансової стійкості та мінімізації ризику вкладних операцій

Ключові слова: зелене фінансування; проєкти екологічного спрямування; відновлювана енергетика; інвестиційний портфель банків; похідні фінансові інструменти; фондовий ринок

Organisational culture as factor of effectiveness in team building

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Abstract. The problem of the personnel's influence on the productivity of enterprise has become more and more discussed in recent years. In most cases, this is caused by the need for a deeper study of the human factor, which is the main driving force on the way to achieving enterprise efficiency. The purpose of this study was to analyse the factors and components of organisational culture that can influence the formation of a team, and by means of a comparison of features to determine the points of contact between these concepts. The main scientific methods that were used for this are the methods of analysis and synthesis, modelling, specification and system analysis. The importance of team building, its relationship to organisational culture, and the possible benefits that can be achieved through the interaction of these components have been analysed. In addition, the theoretical foundations of this topic, which were previously examined by scientists, were considered, and some inconsistencies in the IPO model were revealed, which prompted the essence of this study and the construction of the concept. It has been proven that internal and external factors of organisational culture affect team building factors, and that with the help of successful team building it is possible to achieve higher KPIs and job satisfaction. As a result, a study was conducted and conclusions were drawn that organisational culture does affect team building due to some factors and that before creating teams, it is necessary to bring the culture to a high level. Otherwise, all attempts will fail due to the lack of components and a clear understanding of how teams work. The research found that not only team building can achieve higher KPIs and job satisfaction – it can also be achieved with a well-defined organisational culture, prioritisation and clear organisation of work flow. The practical significance of the obtained results lies in the possibility of their use at enterprises to improve organisational culture and team building

Keywords: social subsystem; leader; enterprise; management; efficiency

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● INTRODUCTION

The world's economy is exposed by transformation due to influence of different factors, such as: social, finance, cultural, environmental and others. And because of this organisations try always to implement different techniques which will increase motivation of personnel and therefore productivity. Thus, competitive advantage will be increased and the achievement of strategic goals will become more controlled.

And one of the most important factors which guide organisation to success is the presence of strong organisational culture which leads to stabilisation of internal relations and increasing prosperity of external communications.

Actually, team formation is one of the components of organisational culture, which exists as a part of behavioural dispositions (Melnik *et al.*, 2021). K.O. Barkova (2021)

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researched that organisational culture is considered as an important strategic element that directs all units of the enterprise to achieve common goals. To fulfil this influence, organisational culture implements two main functions: internal integration and external adaptation. And exactly internal integration is responsible for creating new teams and their future developing as this function means formation of a team and transformation of individuals into an effective one.

When establishing a connection and influence between organisational culture and team building it is very important to speak about communication. In research (Beer, 2020) it was mentioned that it is a part of organisational culture, but there is no data concerning its (and other factors') influence on team building. In the context of this study, it should be mentioned that important components of team building are not only organisational culture and its elements, but also various reward systems. The principle of operation of such a system was described in detail in the article (Blyznyuk *et al.*, 2021), but in such a context it was not clear if eventually job satisfaction was achieved with the help of organisational culture. An item of employees' relation to team building was considered in (Zhang & Losekoot, 2021), but it was not discussed if organisational culture took part in this. Other important issues were discussed in the article (Khymych *et al.*, 2021), but among all variety of assumptions, nothing was told about why organisational culture played an important role in team building. Recently, it has become important to investigate behaviour of organisational culture and team building in multinational organisations (Miao, 2022), and no less important has been the understanding of why this is happening, for example, the KPI (key performance indicator) is higher, which is not always considered in the research. As it can be seen, there are a lot of issues needed to be clarified.

In this case, the following hypotheses have been formulated in order to fill in these gaps and delve into why organisational culture is one of the most important factors influencing team building and what additional conditions can affect this connection.

Hypothesis 1: External and internal factors of organisational culture can influence on team building.

Hypothesis 2: As a result of effective team building the higher KPI is achieved.

These hypotheses proof will deepen knowledge about how organisational culture is really a success factor and what is a precondition for this.

The purpose of this study was to identify factors and constituents of organisational culture which influence on team building and lead it to success by building a correlation model between these values. This will help to organise existing knowledge concerning this topic and make some improvements according to modern requirements.

To achieve the purpose, it is needed to implement such tasks:

The first task is to clearly understand (prescribe, formulate) the leading values, priorities, attitudes designed to support a promising organisational strategy.

The second task is to clarify which cultural values will help (or hinder) the achievement of the strategic goals of the organisation.

The third task is to assess the existing gap, that is, the degree of compliance of the existing organisational culture with the organisation (business) influence on other enterprises' factors.

● LITERATURE REVIEW

Today, there is no doubt about the importance of organisational culture and its significance as one of the most important tools that allows building the most effective and competitive teams at enterprises of all spheres of activity and forms of ownership. Foreign experience shows that institutions, that pay attention to the issue of organisational culture and look at it as a key link for team building, function more effectively than their competitors.

That is why it is necessary to pay weighty attention to the organisational culture in order to prevent difficulties in building an effective and strong team, which would be comprehensively ready for any challenges and achieving business goals in its environment.

A wide range of problems of studying the organisational culture and its significance as efficiency factor in team building was considered in many works of foreign and Ukrainian scientists.

The concept of organisational culture is comprehensively presented in the scientific literature in works (Kubariyeva *et al.*, 2017; Bannikova, 2018; Melnik, 2021), the authors paid consequential attention to the analysis of the concept of organisational culture, for further deepening of its study.

T. Blyznyuk (2019), in her work paid compelling attention to the main results of assessing the level and development of a multinational company, and also determined the peculiarities of personnel management of a multinational company according to the stage of the life cycle of the company.

V. Nikiforenko & V. Kravchenko (2017) defined their interpretation of system-forming interrelationships of organisational culture and human resources management as defining components of strategic management. The approaches of foreign and Ukrainian scientists regarding the importance and place of organisational culture in achieving the goals of the organisation in the market environment were studied, as well as the important issue of the system-forming interrelationship of organisational culture and human resource management as defining components of strategic management was examined.

R. Waterman *et al.* (1980) studied the relationship between the success of the company as a whole and the culture that could lead the company to success and noted that faith in action, connection with the consumer, autonomy, flexibility and simplicity were the main factors for this.

O. Yatsenko & M. Horbunov (2020) substantiated the use of technologies and team building methods for the formation of the corporate culture of the organisation and the improvement of team efficiency. They also emphasised that the formation and development of organisational culture is an innovative tool for improving the quality of work and managing human resources.

Ye. Makovoz & U. Storozhylova (2009), L. Nikiforova & Ya. Bilokon (2012) generally described the importance of team building and its magnitude in modern conditions. Also, R. Zhang & E. Losekoot (2021) studied in detail the attitude of employees to team-building activities.

K. Cameron & R. Quinn (2011) clearly stated that organisational culture was manifested through leadership style, symbols, and norms. H. Abuzid & M. Abbas (2017) proved the effectiveness of influence on organisational performance, as well as a positive relationship with organisational support and the willingness of the team leader to make teams effective, and ultimately improve organisational performance. Ye. Makovoz & U. Storozhylova (2009) were engaged in proving the importance of team building at all stages of collective development in their work, the authors singled out measures related to team building as the main ones for team cohesion.

M. Körner *et al.* (2015) analysed in detail the relationship between organisational culture, interprofessional teamwork and job satisfaction, which allowed to once again confirm the importance of organisational culture for building an effective team that would be satisfied with its work, which would increase the main factors for decent competitiveness in the modern market.

It is also worth paying attention to the importance of team effectiveness and the role of the leader in the team based on the IPO model (Input-Process-Output), noting the effectiveness of the model, the authors were B. Gibbon *et al.* (2002). It can be seen that a lot of scientists in different periods of time considered and are still examining this issue because some concepts have stayed unchangeable, and some of them need to be improved due to changes in internal and external factors.

● MATERIALS AND METHODS

In order to get qualitative research results different methods were used. First of all, authors applied methods of analysis and synthesis. Thanks to the analysis, it was possible to gain knowledge about individual elements of organisational culture in various aspects of their existence which helped to determine that team building was an integral part of organisational culture. At the level of synthesis, an idea of its structure and systemic characteristics, the relationship of its essential characteristics was formed. The next important method was modelling: visual representation of the IPO model helped to understand how organisational culture influenced team building, their relationship and what could be got as a result of this connection. As to specifications, they specified the tasks which were necessary to achieve the goal; generalisation of the collected data and their interpretation; setting these as the basis of this study.

The role of system analysis was to look at the object of study as a set of elements that make up the system. That is, organisational culture is a part of such a big concept as management; team building, in turn, is impossible without a stable and successful organisational culture. So, it is also part of a large management system. Only having fully understood all the constituent elements, it was possible to form a unanimous opinion regarding the structure of the system and to draw the right conclusion respecting the research topic, as well as to achieve the goal and solve the problems.

Moreover, one of the main research bases was informational one. It consisted of articles in periodicals, training manuals and dissertations on the presented top-

ic, which helped fill our work with already existing facts and identify gaps. Systematic study of the literature was an integral part of this kind of work and the foundation of successful research. Most of the resources used to write this article were primary documents, which allowed the authors to work with raw information that had original data. Scientific publications which were used in this article came from different years which allowed to look at the problem through the prism of time, and to understand which directions had changed during this period and which ones stayed the same. Besides, such an approach helped to analyse changing the rhetoric of the established problem through the years and set the direction towards its solution.

● RESULTS AND DISCUSSION

The result of this research based on three main principles: “organisational culture is a factor of effectiveness in team building”; “other factors influence on organisational culture, so they should be displayed in this system”; “organisational culture with effective team building can influence on KPI”. They were formulated on the basis of previous researches (Körner *et al.*, 2015; Romanovskiy *et al.*, 2017; Bannikova, 2018) and presented statements that had not been discussed earlier.

The importance of these topics is that a lot of managers, CEOs and people who are in some way connected with business underestimate significance and influence of organisational culture on team building. In addition, it can be argued that organisational culture potentially affects all internal and external behaviour (reactions) of an enterprise, and these enterprises respond to environmental changes taking into account their own cultural characteristics. To achieve and maintain organisational success, culture must be adapted to the changing environment. As long as the teams and personnel ensure that, the enterprise adapts to the environment, the business continues its life. So, the relationship between organisational culture and team building is a phenomenon that is quite difficult to see “on the surface”. As already has been mentioned, many features are associated with organisational culture, such as structure, behaviour, decision-making, etc., which are directly related to team building. However, despite the fact that this topic has been studied in various sectors, both international and domestic societies, and it continues to develop, the specific relationship between variables (organisational culture-team building) still remains insufficiently disclosed. And this can be considered a gap in terms of literature and research.

Hypothesis 1: External and internal factors of organisational culture can influence on team building.

Hypothesis 1 claims that external and internal factors of organisational culture can influence on team building. In order to prove that it is necessary to mention that organisational culture performs two functions: external adaptation and internal integration, which are fighting with the influence from outside and inside. Summarised information is presented in Table 1.

The next stage of proving Hypothesis 1 is to analyse main functions of team building in order to show that these two concepts are connected (Table 2).

Table 1. Functions of organisational culture

Functions		
#	Name	Essence
Functions of external adaptation		
1	Innovative	Constant search for innovations that provide a competitive advantage.
2	Formation of a positive image of the organisation	Creating a favourable impression of the organisation in society.
3	Orientation to the consumer	Implementation of the principle “the customer is always right”.
4	Regulation of partnership relations	Formation of a respectful attitude towards business partners (including competitors).
5	Adaptation of the organisation to the needs of society	Ensuring the organisation’s integration into social structures.
Functions of internal integration		
1	Security	The functioning of a specific system of organisational values, which recognises and rejects negative values of the external environment that are harmful to the organisation.
2	Integrating	Uniting the interests of the members of the organisation, forming a sense of belonging, identity, involvement in the organisation’s affairs.
3	Normative and regulatory	Ensuring controllability and predictability of the behaviour of members of the organisation.
4	Substitute	Functioning as a management tool and replacing formal and official management mechanisms.
5	Adaptive	Acquisition of cultural values by new members of the organisation, involvement in the climate of the organisation and working environment.
6	Educational and cognitive	Orientation of employees to continuous development and professional self-improvement to increase the human capital of the organisation.
7	Motivating	Development of a sense of belonging and involvement in the noble mission of the organisation, which increases the level of work motivation of employees.
8	Communicative	Knowledge of norms of behaviour and means of communication, which will contribute to quick mutual understanding, perception of information and uniformity of its interpretations.
9	Quality Management	Formation of a sense of responsibility for the quality of the product or service through a sense of involvement and belonging to the mission of the organisation.
10	Recreational (“therapeutic”)	Helping to create psychological comfort and recovery of employees’ mental strength.

Source: prepared on the basis of research data O.H. Romanovskiy *et al.* (2017)

Table 2. Functions of team building

#	Name	Essence
1	Strengthening team communications	Acquiring theoretical knowledge about team building; development of team interaction competencies; improvement of inter-team communications; development of informal horizontal connections; development of informal communications with clients and partners of an organisation.
2	Improvement of role distribution (higher efficiency)	Participants’ awareness of their roles and functions; development of delegation skills; development of responsibility acceptance skills; development of skills to perform various roles.
3	Development of leadership potential	Leadership development in extreme conditions; formation of responsibility of personal contribution to the team’s victory; development of situational and distributional leadership skills; acquiring the skills of stable and cohesive work in crisis situations; development of individual leadership potential among participant.
4	Increasing self-esteem and self-awareness	Growth of self-esteem because of achieving results; obtaining information about yourself and characteristics of your interactions; getting information about strengths and weaknesses in team work.
5	Disclosure of internal reserves of team members	Finding hidden opportunities due to unusual circumstances and the opportunity to evaluate colleagues in a new way; formation of teams for ambitious projects; disclosure of team’s internal reserves, the brightest and most positive aspects of the participants; disclosure of employees’ internal individual reserves.
6	Optimisation of decision-making	Development of non-standard search skills; development of risk-taking abilities and readiness for them; development of conflict resolution skills; development of decision-making skills in stressful situations.
7	Increasing the efficiency of interaction in the team	Higher efficiency of business teams; higher employees’ productivity; development of abilities to use the differences of team members for the benefit of teams’ higher effective vital activity; developing the skill of accepting oneself as a team.

Source: prepared on the basis of research data O.H. Romanovskiy *et al.* (2017))

From the tables above it can be seen that both organisational culture and team building has similar functions (highlighted in grey colour). This is primarily due to the fact that team building is a part of organisational culture and they operate in the same area of influence. So, it is an important and approving fact: adaptation of the organisation to the needs of society influences on the optimisation of decision-making in the way of building solutions based on customer requirements. In this way, teams can react on customers' needs or ignore them and make decisions based on their own preferences. Adaptive and communicative functions influence both on strengthening team communications and increasing the efficiency of interaction in the team. In this case, these functions of internal integration affect team building's functions directly through leaders and managers, who deploy these processes. And motivating function influence on strengthening team communications, because if personnel is motivated then it

will be easier to assemble a team to achieve common goals. Summarising, the conclusion can be made that hypothesis 1 is true, and external and internal factors of organisational culture can influence on team building.

Hypothesis 2: As a result of effective team building, the higher KPI (key performance indicator) has been achieved.

Then it is needed to proceed to the justification of hypothesis 2. And for this it is needed to show that KPI (key performance indicator) increase has been achieved as a result of effective team building. It is important for current research because the aim of each modern enterprise is to increase profit and everything which can lead to this result must be used on the way to achieving this goal. In order to prove this, it is necessary to build IPO model (Input-Process-Output) to illustrate this relationship.

Figure 1 shows a model of the impact of organisational culture on team building and possible influence on it.

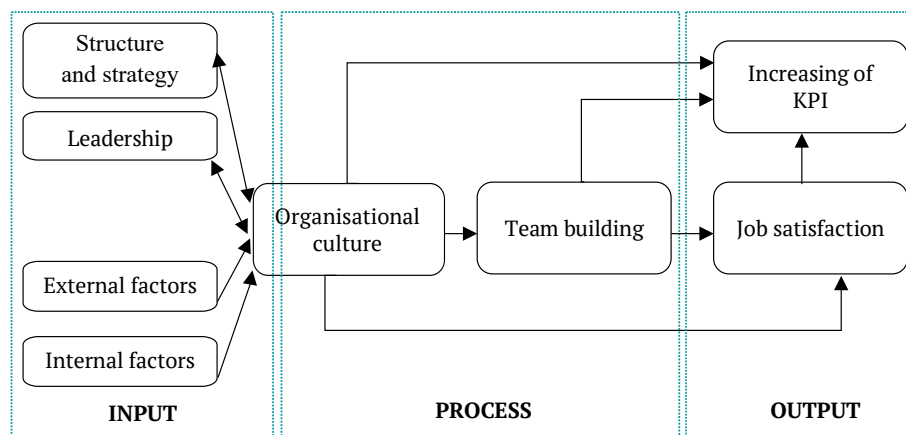


Figure 1. Model of factors' influence on organisational culture and distant reflection on team building

Source: developed by the authors on the basis of M. Körner *et al.* (2015)

Based on previous researches and according to this figure it is clearly seen that as a result of effective team building, the higher KPI (key performance indicator) has been achieved. But also, a conclusion can be made that not only after effective team building this result can be achieved, but also only because of existing of working organisational culture, as not always teams are needed. The same with job satisfaction: it can be achieved directly after determination of organisational culture or after introduction of teams and providing team building. But it should be noticed that according to world practices teams are useful when a clear goal is set; all team members have their own tasks; and responsibility is both collective and individual (Romanovskiy *et al.*, 2017).

Besides, it can be seen that structure and strategy, and leadership have bilateral connection with organisational culture. It happens because they can influence on each other: if organisational culture changes, so leadership style can also vary; and changes in leadership lead to transformation in some internal functions of organisational culture. And the same with structure and strategy: shifts in the steady state can work in two directions. This is due to the dependence of these organisation's components on one another.

The results can expand knowledge in the field of organisational culture and team building, which gives advantages in the field of personnel management. Despite the fact that this issue was considered by a certain number of scientific figures, it was not fully disclosed; and it was not confirmed that organisational culture is a factor of success in team building. This topic was revealed in more detail in the work (Romanovskiy *et al.*, 2017), where step by step it was considered in detail what organisational culture is and how team building is poured into this large system. Despite the fact that the data is very superficial, it is able to highlight the following significant mention: among the main components of organisational culture, it is possible to emphasise rituals, traditions and events. And it is precisely the conduct of different types of events that determines team building. The authors (Romanovskiy *et al.*, 2017) did not focus on this, but it could be allocated as the main evidence that the organisational culture is associated with commanding and has a significant impact on it. In this work, this connection was analysed in more detail and was provided with examples that team building really largely depends on the organisational culture established at the enterprise. But despite the completeness of the stated facts regarding organisational culture and team building, there

is a statement in this work with which the authors do not agree. Namely: a statement that organisational culture is a part of corporate culture. From authors' point of view, the concepts of "organisational culture" and "corporate culture" are similar. Their main difference is the environment of origin: the concept of "corporate culture" came from America, where corporations rule and only they are considered as the highest object of power at the market, and "organisational culture" is more about European concept, where the market considers as various forms of manifestation of the organisation as a dominant object.

The next important contribution to this topic has been made recently in the article (Miao, 2022). This work examines the fact that organisational culture is the core of organisation and has an impact on various processes: management of a multinational company, an increase in labour productivity, competitiveness, and takes an important part in the adaptation and organisation of production. The correctness of these judgments is not in doubt. In this study, the author considers organisational culture from the point of view of different approaches: value, socio-psychological aspect and economic one. And in each of them you can trace the relationship with team building. It is also very important that the author, among all definitions, emphasises the increase in labour productivity because this article also talks about an increase in KPI. Despite the fact that the question was not completely disclosed in relation to the subject of this article, this study (Miao, 2022) has helped to make sure that organisational culture has an impact on commanding.

Also, the work (Zhang & Losekoot, 2021) should be noted as one which revealed the topic of team building from practical point of view. In particular, it can be noted that the authors of this article considered a situation where the organisation's managers simply confronted the fact that they would carry out a team building putting apart the opinion of the staff. And despite the fact that this is not the main theme of our study, it is quite interesting to consider this from the point of view of organic culture. Thus, it is possible to conclude that if the organisation has a poorly developed organisational culture (this conclusion follows from the fact that the leaders do not ask the opinions of employees), then the expected effect of the team building may not be achieved. And since the holding of such measures requires financial investments, then, in this case, the organisation suffers a loss without the possibility of its compensation (since the purpose of the event will not be achieved at this outcome). And this is another confirmation that a correctly configured organisational culture is the basis of the team's cohesion.

Another work (Perwira & Widarnandana, 2022) has considered such important hypothesis as "team building is functioning only in effective organisations". And as it is known that effective organisations cannot exist without successful organisational culture, so despite the fact that it was not mentioned directly, such conclusion can be made: "organisational culture and team building are two interdependent factors in the organisation". There is no proof of that, but authors take it as a fact, although no research has been done. This has become one of the reasons for writing this article. Besides, they highlight that team performance

cannot be avoided from task performance which, from our point of view, also emphasises the importance of team building at organisation.

It is important enough to note the work (Abbas, 2021) where authors considered influence of teamwork on job performance. The research was about the factors connected with the idea of cooperation in the workplace. Although this work examined similar problem as ours, resources which were the basis for it are rather old and in this way results cannot be fully reliable. Particularly, authors claimed that collaboration of individuals increased chances for successful work results, but this affirmation already had been discussed during the last years. So, the problem of organisational culture still influences team building and the represented hypothesis is open.

As it can be seen, there are different points of view about the same subject, but still the main principles stay alike. It is necessary always to be aware of modern directions in order to understand how management is changed and which new principles can be implemented at the organisation.

● CONCLUSION

The result of the study of organisational culture as a factor of effectiveness in team building has shown that both of these concepts are interconnected and as team building is a part of organisational culture, it is under the influence of it. With the help of comparison of organisational culture and team building functions it has been found that these two concepts have some similar ideas which prove their interconnection and dependence. This important finding helps to understand how one of the key constituents of the organisation works. Moreover, presented IPO model shows that influence of leadership and structure and strategy on organisational culture can be bilateral. That means that they depend on each other and each of these concepts work inextricably by one another, and when one part of this system changes, others will change too. Beside this, eventually from the proposed model and proved hypotheses such practical recommendations can be formulated:

1. When implementing team building the level and condition of organisational culture should be taken into account, as its internal and external factors directly influence on team building ones.

2. Team building directly depends on the level and structure of organisational culture.

3. The higher KPI and job satisfaction depends either on organisational culture or team building as organisations can exist without teams.

These principles can be a foundation for the next researches in the area of organisational culture and team building. Particularly, further research of the authors is aimed at a deeper study of team building as a component of a modern organisation and the conditions of functioning during the period of the online format of working.

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● CONFLICT OF INTEREST

The authors declare no conflict of interest.

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Організаційна культура як фактор ефективності в командуванні

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Анотація. Питання впливу персоналу на продуктивність підприємства в останні роки стало все більш дискусійним. У більшості випадків це викликано необхідністю глибшого вивчення людського фактору, який є основною рушійною силою на шляху досягнення ефективності підприємства. Мета цього дослідження полягала в аналізі факторів і компонентів організаційної культури, які можуть впливати на формування команди, і за допомогою порівняння ознак визначити точки дотику між цими поняттями. Основні наукові методи, які були використані для цього, це методи аналізу і синтезу, моделювання, конкретизації та системного аналізу. Було проаналізовано важливість командування, його зв'язок з організаційною культурою та можливі переваги, яких можна досягти за допомогою взаємодії цих компонентів. Крім цього, були розглянуті теоретичні основи даної теми, які раніше розглядалися науковцями, та виявлено деякі неузгодженості в моделі ІРО, що підштовхнуло до суті цього дослідження та побудови концепції. Було доведено, що внутрішні та зовнішні чинники організаційної культури впливають на фактори командування, а також, що за допомогою успішного командування можливо досягти підвищення КРІ та задоволеності роботою. В результаті було проведено дослідження та зроблено висновки, що організаційна культура дійсно впливає на командування через деякі чинники і що перед створенням команд необхідно вивести культуру на високий рівень. В іншому випадку всі спроби будуть невдалими через брак компонентів і чіткого розуміння того, як працюють команди. Під час дослідження було виявлено, що не тільки за допомогою командування можна досягти підвищення КРІ та задоволеності роботою – цього також можна досягти за допомогою добре сформульованої організаційної культури, встановлення пріоритетів і чіткої організації робочого процесу. Практична значущість отриманих результатів полягає у можливості їх використання на підприємствах задля вдосконалення організаційної культури та командування

Ключові слова: соціальна підсистема; лідер; підприємство; менеджмент; ефективність

Substantiation of the stages of implementation of the tax expenditure concept

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Abstract. One of the key problems of the modern taxation system in Ukraine is the unsystematic provision of tax benefits and the lack of real tools for monitoring their use, which determines the relevance of the study. The purpose of the study was the theoretical substantiation of the stages of implementation of the tax costs concept to reduce budget losses from the provision of tax benefits. The following scientific methods of the research were used: analysis, synthesis, induction, deduction, analogy, comparative and statistical analysis, logical generalisation. The work establishes the need to implement the concept of tax costs, which involves the development and implementation of the Tax Policy Strategy, in order to regulate the conceptual foundations of tax policy; inventory of current tax benefits and revision of the list of benefit recipients (control of income and expenses of individuals); preparation of changes to tax legislation with mandatory financial and economic substantiation (ensuring compliance with the principle of stability of legislation); standardisation of the monitoring system of the tax expenditure effectiveness (calculation of the indicators of tax expenditures effectiveness); regulation of the reporting procedure for tax expenditures by taxpayers by unifying the reporting form; standardisation of the procedure for drawing up the Report on tax expenditures by executive authorities and taking into account its results in the budget and tax policy; substantiation the grounds for making changes to the list of tax expenditures. The practical significance of the obtained results lies in the substantiation of the sequence of stages of the implementation of the tax expenditures concept in order to reduce the loss of budget revenues and its deficit. This concept should contribute to the transparency of the use of budget funds and should provide a reasonable approach to the composition of tax benefits that will be included in the list of tax expenditures for each tax payment

Keywords: revenues to the budget; benefits; monitoring; budget deficit; budget losses

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● INTRODUCTION

One of the key problems in taxation, which also leads to a budget deficit, is the unsystematic and unreasonable provision of tax benefits to taxpayers. The concept and composition of tax benefits is regulated by the Tax Code of Ukraine (Tax Code of Ukraine..., 2010), according to which a tax benefit is “the release of a taxpayer from the obligation to

calculate and pay tax and fees, payment of tax and fee in a smaller amount if there are legal grounds”.

In other countries, control over the provision of tax benefits is carried out within the framework of the concept of tax expenditures, which is used by the vast majority of countries, fulfilling Council Directive 2011/85/EU (2011),

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paragraph 2 of Article 14 provides the obligation to publish information by states-EU members information about the impact of tax expenditures on budget revenues.

The founder of the tax expenditure concept is S. Surrey (1976), who summarised the list of tax benefits, that can be attributed to tax expenditures. This list was used to estimate the loss of US budget revenues from the use of tax expenditures.

S. Barrios *et al.* (2016) made an assessment of social tax costs on budget revenues. The study included a comparative quantitative assessment of tax and budget policies in different countries and the impact of tax expenditures on social justice in three categories: housing, education and health care. The assessment was based on a microsimulation approach, a European microsimulation model to assess the interaction of specific tax costs with other types of tax benefits for individuals.

The International Monetary Fund Guidelines (Beer *et al.*, 2022) emphasise, that all types of tax expenditures should be assessed. In recent times, most countries assess only the most important tax expenditures due to limited resources.

L. Kassim & M. Mansour (2018) focused on the analysis of tax expenditure, reporting for developing countries. Based on the results of the assessment the authors concluded, that the overall quality of reports on tax expenditures remains low in most countries due to two key factors: the lack of a principled approach to determination of the basic taxation system; incomplete coverage of tax costs due to data limitations.

A. Redonda & T. Neubig (2018) investigating the impact of tax expenditures on the investment attractiveness of countries proved, that G20 member countries should intensify efforts to phase out tax expenditures that harm the environment, including tax incentives for fossil fuels and other schemes, that contribute to the irrational use of natural resources.

In the Ukrainian scientific community the issue of tax expenditures began to be discussed in detail only in the early 2010s, when the budget deficit gradually increased.

A. Sokolovska & Ya. Petrakov (2013) were the first scientists, who tried to define the conceptual foundations of tax expenditures. In their study six stages of formation of the tax expenses concept were summarised.

In another work A. Sokolovska & T. Zatonatska (2022) emphasise, that the introduction of the concept of tax costs into the budget process of any country should begin with the definition of the elements of the basic tax system (structure).

The idea of the conceptual foundations of tax expenditures was developed by T. Yefimenko *et al.* (2021). In their opinion, it is important, that “the transition of Ukraine to the tax expenses concept should be carefully substantiated; accompanied by public discussions with the participation of executive authorities and businesses; agreed with scientists and leading economists regarding possible losses or additions to the budget due to the introduction of the concept; take into account the experience of other countries; provide a transition period for the adaptation of both controlling authorities and taxpayers to the provisions of the tax expenses concept”.

A. Samoilkova *et al.* (2021) focused on such a component of tax expenditures as tax credits for research and development. The paper proves that tax benefits are a more

effective tool for stimulating development and research, than direct state financial support.

Paying tribute to the development of scientists in terms of theoretical and practical approaches to the application of tax costs concept, the problem of the sequence of stages of the implementation of tax expenditure concept in national tax practice remains unresolved.

The solution of the tasks set in the research was carried out using scientific methods of analysis, synthesis, induction, deduction and analogy – to determine the main advantages and disadvantages of the concept of tax costs; comparative and statistical analysis – to analyse the loss of budget revenues in other countries of the world from the application of the tax costs concept; logical generalisation – to substantiate the main stages of implementation of tax expenses concept.

The purpose of the research was theoretical substantiation of the stages of the implementation of the tax expenditure concept in Ukrainian tax legislation.

● THE ADVANTAGES AND DISADVANTAGES OF THE TAX EXPENDITURE CONCEPT

The tax system is one of important components of the state financial system. Martial law made significant adjustments to the tax revenues indicators. Thus, according to the results of 2022, the specific weight of tax revenues in the revenues of the Consolidated Budget of Ukraine amounted to only 61.1% (for the same period in 2021 – 87.2%). At the same time, the deficit of the Consolidated budget for 2022 amounted to UAH 844,8 billion (for 2021 – UAH 187,8 billion) (Ministry of Finance of Ukraine..., 2022). It is noted, that during 2022 many unsubstantial changes were made to the tax legislation, which decreased budget revenues: temporary cancellation of customs payments for the import of vehicles; permission for individuals to switch to the simplified taxation system for most taxpayers (even gambling business entities); permission for non-fulfilment of tax obligations by taxpayers regarding tax payment and reporting.

The tax system mostly depends on the directions of the tax policy of the state. In recent times, Ukraine does not have a Tax Policy Strategy, but the National Economic Strategy provisions are implemented (Resolution of the Cabinet..., 2021), its separate strategic goals are related to taxation (mostly without specifying the types of tax benefits):

- reduction of the tax burden on business;
- simplification of tax administration;
- stimulation of investment activity thanks to the introduction of a tax on withdrawn capital instead of a tax on corporate income;
- reduction of the tax burden on individuals thanks to the reduction of the tax rate on the income of individuals from 18% to 5%;
- increase resource payment rates.

The implementation of such strategic goals can take place at the expense of providing tax benefits either. Tax benefits are systematised in the Handbooks, which are provided on the official website of the State Tax Service of Ukraine (State Tax Service of Ukraine..., n.d.). The first directory of benefits was published on January 1, 2006. Starting from 01.04.2013 the Directory of tax benefits was divided into two parts: the Directory of tax benefits, which

are losses of budget revenues and the Directory of other tax benefits. We draw attention to the absence of any substantiation for such a division of tax benefits.

Taking into account the imperfection of the existed Directories of tax benefits and the lack of a systematic approach to the provision of benefits, it is needed to move to the application of the tax costs concept in national tax legislation.

The analysis of literary sources made it possible to identify the main advantages and disadvantages of the tax expenditure concept.

The advantages of this concept are: the ability to ensure transparency of budget and tax policy; operational development measures to adjust budgetary and tax policies under the influence of various factors; monitoring tax benefits effectiveness; the application tax benefits control; budget expenditures optimisation (Burman & Phaup, 2011; Barrios *et al.*, 2016, Redonda *et al.*, 2021).

However, the disadvantages of the tax expenditure concept are:

- lack of a unified approach to the method of their assessment and reporting procedure in countries. A heterogeneous assessment makes it impossible to compare the obtained indicators and does not allow to evaluate a real system of tax benefits quality in a particular country (Craig & Allan, 2001; Toder, 2005; Fleming & Peroni, 2010);
- the different structure of tax legislation and atypical approaches to basic structure taxes determination distort the results of tax expenditures impact assessment on budget losses (Boadway, 2007; Altshuler & Dietz, 2011; Serebryansky, 2013);
- some countries (Croatia, Malta, Cyprus, Japan, Switzerland, etc.) do not comply with demands of the EU Direc-

tive on reporting tax expenditures thus it does not allow comprehensive exchange of tax information (Burman *et al.*, 2017; Kaplow, 2017; López-Laborda *et al.*, 2022).

Based on the data of the global tax expenditures database (Redonda *et al.*, 2021) a comparative analysis of tax expenditures in individual countries was carried out (budget losses from the application of tax expenditures; the specific weight of tax expenditures in GDP and in tax revenues; key types and purposes of the application of tax expenditures). The analysis made it possible to draw the following conclusions:

- the biggest budget losses from the use of tax costs are in the USA, Great Britain, the Netherlands, Australia and Canada. At the same time in the USA, Australia the amount of losses is gradually decreasing every year, but in Great Britain and the Netherlands it is increasing (Table 1);
- the largest indicator of the specific weight of tax expenditures in GDP is in the Netherlands, Finland, Ireland and the Czech Republic; the lowest share of tax costs in GDP is in Bulgaria, Germany, Slovenia and Estonia. In the USA and Australia the indicator is gradually decreasing. But it is increasing in Spain, Sweden and Great Britain;
- the largest specific weight of budget losses in tax revenues is in the USA, Finland, the Netherlands, Canada, Ireland, Australia;
- the priority type of tax expenditures is tax exemption (Table 2);
- the main goals of applying tax expenditures for most countries are: expanding access and demand for goods and services; development of a priority sector of economy or type of activity; ecological safety; socioeconomic; distinct population segment support (Table 3).

Table 1. Lost income from the application of tax costs, billion USD

Country	2017	2018	2019	2020
OECD countries				
Australia	123.41	128.50	111.63	107.34
Great Britain	196.99	219.92	212.15	218.83
Canada	108.33	107.57	112.66	106.67
South Korea	34.11	38.84	43.78	43.92
The USA	1600	1510	1460	1370
Turkey	34.72	31.30	31.49	30.15
EU countries				
Austria	16.85	18.36	19.29	19.84
Belgium	30.51	33.91	30.45	No data
Bulgaria	0.37	0.38	0.40	0.41
Greece	8.72	10.58	10.74	No data
Denmark	7.70	8.14	7.85	8.58
Estonia	0.43	0.24	0.26	0.27
Italy	61.60	64.03	68.37	70.63
Ireland	50.08	49.62	25.69	43.51
Spain	36.00	41.48	41.69	43.33
Latvia	2.94	2.66	No data	No data
Lithuania	1.41	1.55	1.69	2.36
Luxembourg	0.99	1.11	1.10	1.16
The Netherlands	117.64	127.04	120.32	127.92
Germany	32.30	34.66	33.54	32.32
Poland	11.04	12.32	No data	No data
Portugal	13.09	13.51	15.55	14.56

Table 1, Continued

Country	2017	2018	2019	2020
Romania	9.14	10.42	11.68	11.80
The Slovak Republic	1.36	1.67	1.77	2.09
Slovenia	0.10	0.12	0.10	No data
Hungary	3.22	3.44	3.53	3.66
Finland	30.02	33.68	32.28	33.69
France	103.01	113.99	108.72	No data
The Czech Republic	21.94	23.93	26.28	No data
Switzerland	24.22	23.03	24.10	26.75

Source: developed by authors based on A. Redonda *et al.* (2021)

Table 2. The main type of tax expenditures in countries around the world

Countries	Tax expenditures type
Australia, Great Britain, Greece, Denmark, Germany, Ireland, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia, USA, Turkey, Hungary, Finland, Czech Republic	Tax exemption
Austria, Belgium, Estonia, Spain, Portugal, Sweden	Reduced tax rate
Bulgaria, Italy, Luxembourg	Tax deduction
South Korea, Netherlands, France	Tax discount
Canada	Tax deferral

Source: developed by authors based on A. Redonda *et al.* (2021)

Table 3. The main purpose of applying tax expenditures

Countries	Tax expenditures purpose
Austria, Greece, Finland, Sweden	Expanding access and demand for goods and services
Bulgaria, South Korea	Development of a priority sector of economy or type of activity
Denmark, Latvia	Ecological safety
Italy, Canada, Germany, Slovakia, France	Socioeconomic
Spain, the Netherlands, Poland, Turkey	Support of specific subgroups of the population

Source: developed by authors based on A. Redonda *et al.* (2021)

The study of the scientific works of Ukrainian scientists (Sokolovska & Petrakov, 2013; Yefimenko *et al.*, 2021; Sokolovska, 2022) proved that the authors mostly defined general approaches to the conceptual bases of tax expenditures (basic structure taxes definition; substantiation of assessment methods; generalisation of accounting methods and administration of tax expenditures, etc. But at the same time scholars did not focus enough attention

to the sequence of stages of implementing of the tax expenditure concept, since the definition of the above-mentioned components is only a part of the process. It is important to substantiate the sequence in which the tax expenditures concept will be implemented in practice.

The authors propose the following sequence of stages of implementation of the tax expenditures concept (Table 4).

Table 4. Stages and terms of implementation of the tax expenditure concept

The name of the stage	Key characteristics	Terms of implementation
1. Development of the Tax Policy Strategy of Ukraine	Regulation of the tax expenditures concept as a key direction of reforming the system of tax benefits	To 01.01.2024
2. The inventory of existing tax benefits and review of recipients of such benefits	Formation of a general list of tax benefits with an indication of the purpose of introduction. The collection of information about preferential categories and the amount of their income and expenses	To 01.01.2026
3. The preparation of amendments to legislative and regulatory acts	Legislative regulation of the composition of tax expenditures and its main components. Mandatory public discussion with the involvement of business representatives and public associations of taxpayers	To 30.06.2027
4. Financial and economic substantiation of changes in tax and other types of legislation	Provision of budget profit and loss calculations for each type of tax expenditures	To 30.06.2027

Table 4, Continued

The name of the stage	Key characteristics	Terms of implementation
5. Standardisation of the system of monitoring the effectiveness of tax expenditures and control over their provision	Determination of the type and powers of the responsible body for executive power regarding tax expenditures monitoring and control	To 30.06.2027
6. Regulation of the procedure of preparation and submission the tax expenditures report by taxpayers	Formation of the Report form of tax expenditures for different categories of taxpayers (legal entities, natural persons-citizens, natural persons-entrepreneurs)	To 30.06.2027
7. Determination of the procedure of drawing up the yearly tax expenditure Consolidated Report by the responsible body of the executive power	Formation of the form of the Consolidated Report of tax expenditures for the reporting year. Taking into consideration the indicators of the Report for forming the budget policy for the reporting year. The regulation of deadlines for providing tax information on tax expenditures to EU collegial bodies	To 30.06.2027
8. Implementation of the tax expenditure concept and regulation of the list of adjustment cases of tax expenditures and their application conditions	Standardisation of the introduction term of the tax expenditures concept into the practice of legislation with mandatory determination of the list of adjustment cases of tax expenditures and conditions of their application	From 01.01.2028

Source: developed by authors

Stage 1. The development of the Tax Policy Strategy of Ukraine. An important conceptual thing of tax reform in Ukraine should be the development of the Tax Policy Strategy of Ukraine for 5-7 years, in the framework of which it should be noted the transition to a new level of application of tax benefits, as the current mechanism leads to an annual increase in the loss of budget revenues, the size of which amounted to more than UAH 300 billion at the end of 2020 (Yefimenko *et al.*, 2021).

Important measures of the Strategies should be: stability of taxation (clear compliance with the norms of tax legislation); social justice (introduction of progressive taxation of individuals depending on the amount of income); simplification of the tax and fee administration system (increasing the frequency of tax reporting). The key vector of

the Strategy will be the transition to the tax expenditure concept, which should ensure transparency and balance of budget revenues and expenditures, which should become a priority of state policy in the conditions of martial law and the post-war recovery period.

Stage 2. The inventory of tax benefits. As it has already mentioned the existing list of tax benefits is not mostly substantiated from a scientific and economic point of view. Therefore, within two years, after the adoption of the Tax Policy Strategy, the executive authorities, related to the tax and budget policy of the state must substantiate the list of tax expenditures, that will be considered losses of budget revenues. At the same time each type of tax expenditures must be substantiated according to the structural elements shown in Figure 1.

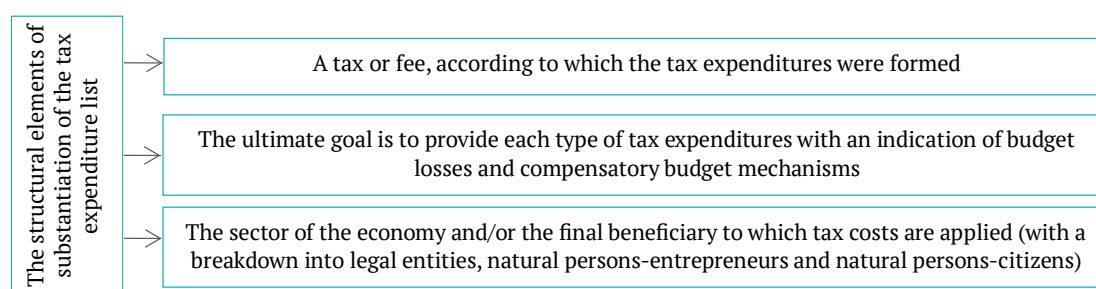


Figure 1. Structural elements of the substantiation of the list of tax expenditures

Source: developed by the authors

In addition, the formation of such list requires monitoring of the incomes of persons, who use tax benefits.

The following things must also be established: the poverty line for various categories of taxpayers; real tax-free minimum income (instead of the existing one of UAH 17). This will make it possible to determine the limit according to which a person will be considered low-income and entitled to claim benefits on this basis. Also, the list of persons, to whom tax benefits will be applied regardless of their income level should be regulated (for example, old-

age pensioners, persons with disabilities, war veterans, participants in the liquidation of the accident at the Chernobyl nuclear power plant, etc.).

Stage 3. The development of changes of legislative and regulatory acts. Within 1.5 years after carrying out the inventory of benefits, legislative and regulatory acts must be developed and adopted, in which it will be detailed:

- definition of «tax expenditures»;
- composition of tax expenditures. The classification of tax expenditure requires careful scientific substantiation

and theoretical and methodological support in order to prevent conflict situations in the administration and accounting of tax benefits;

- the basic structure of taxes, according to which tax costs will be implemented;
- method or methods of collecting and recording information about tax expenditures;
- the method or methods of tax costs estimation.

At this stage the largest possible number of round tables, seminars, and public discussions should be held to ensure a reasonable approach to the composition of tax costs and the order of their application. The result of such meetings should be a Memorandum between state authorities and public associations of taxpayers.

Stage 4. The financial and economic substantiation of changes to tax legislation. Also, this stage involves the identification of compensatory budgetary or extra-budgetary mechanisms from the application of each type of tax expenditures.

According to the recommendations of the European Commission, the assessment of the effectiveness of tax expenditures should be carried out on the basis of three groups of criteria (Kaliva *et al.*, 2014):

- microeconomic efficiency: ensuring the internalisation of externalities and minimising the distorting influence of the tax system on the behaviour of taxpayers;
- socioeconomic efficiency: final results and economic efficiency of the introduction of tax costs. The analysis includes an assessment of the actual budget revenue which was not received full in comparison with the expected losses, the effectiveness and efficiency of tax expenditures;
- administrative efficiency: compliance of tax costs with the general principles of the tax system (simplicity, stability, transparency and accountability).

Stage 5. The implementation of the tax expenditure monitoring system. In order to implement this stage, an executive authority must be identified, that will monitor the effectiveness of tax expenditures. Taking into account the current powers such function should be assigned to the State Tax Service of Ukraine.

Monitoring of tax expenditures should be carried out regularly for each of their types. It should take into account all costs, including administrative costs, related to the establishment of tax costs, as well as compliance with the norms and requirements of the law, including the risks

of tax evasion and so on. The mechanisms should be determined to coordinate special body actions with other bodies which are responsible for economic, tax, customs and other types of state policy. The coordination system should ensure a constant exchange of information about persons, who are applied tax costs.

Stage 6. The development of the Report on tax expenditures for taxpayers. At the legislative level the form of reporting documentation must be determined (separately for legal entities, individual entrepreneurs and individual citizens), taxpayers will be required to submit the form to regulatory authorities in order to exercise the right to receive tax benefits, which are included in the list of tax expenditures.

Until January 1, 2020, the Resolution of the Cabinet of Ministers of Ukraine dated 27.10. 2010 No. 1233 (Resolution of the Cabinet..., 2010) provided that taxpayers should submit a Report on the amount of tax benefits, in which the following information should be provided: tax, fee code; name of tax, fee; benefit code according to the Benefits Directory; the name of the tax benefit; the amount of tax benefits in general and from the State budget; start date and end date of using tax benefits; the amount of tax benefits used for the intended purpose in general and from the State budget.

In Ukraine under the current legislation, tax payers reflect available tax benefits as part of their tax returns for the relevant taxes.

We believe that the form of the Report on tax benefits as a separate reporting document was more convenient for tax control of tax benefits, as it synthesises all information about tax benefits. This form of the Report can be used as a basis for the Tax Expenditure Report.

Stage 7. The determination of the procedure for drawing up the Tax Expenditure Consolidated Report for the year by the responsible body of the executive power. Such a function should be assigned to the Ministry of Finance of Ukraine. The Tax Expenditure Report should contain summarised information about all tax benefits, that were attributed to tax expenditures, as well as the total amount of budget revenue losses should be determined, due to the application of tax expenditures.

In most countries, Tax Expenditure Report is drawn up every year. However, some countries have special rules (Table 5).

Table 5. Reporting on tax expenditures

Country	Periodicity of reporting
Bulgaria	The report is compiled for the current year and the forecast for the coming year
Canada	The reports cover the reporting year, five previous years and two subsequent years. So in these reports current indicators are not only given, but also forecast ones
Germany	The report on subsidies (an analogue of tax expenditure) includes tax expenditure data for the current year, two previous years and one future year
Netherlands	The report is prepared every year. It presents data on tax expenditures for the budget year, one previous year and five subsequent years
Sweden	The types and amounts of tax expenditures are specified in the appendices to the annual spring bills on tax policy for three years (the budget year, the year preceding the reporting year and the following year)

Source: compiled by authors based on L. Kassim & M. Mansour (2018), A. Redonda & T. Neubig (2018), A. Redonda *et al.* (2021)

Taking into account the experience of some countries (Redonda & Neubig, 2018) it should be determined how the Tax Expenditure Report indicators will influence the budget process. On the basis of the Report the composition of tax expenditures should be adjusted and the revenues and expenditures of the annual budget should be formed.

At this stage it is also important to regulate the terms of providing tax information about tax expenditures to the EU collegial bodies, in order to comply with demands of the EU Directive (Council Directive 2011/85/EU, 2011). The fulfilment of this requirements (among other things) should bring Ukraine closer to joining the EU.

Stage 8. The implementation of the tax expenditure concept with regulation of the grounds for making changes to the list of tax expenditures. The introduction of the concept of tax costs into the practice of Ukrainian tax legislation should be carried out within 3-4 years after the adoption of the Tax Policy Strategy of Ukraine. Under martial law, such period may be adjusted. But let's emphasise once again, that the preparatory work of various executive authorities, which are responsible for the tax policy of the state, must be carried out with a mandatory discussion with representatives of taxpayers.

The issue of substantiation of the reasons for making changes to the list of tax expenditures should also be settled. Taking into account the current unstable taxation system and constant violations of the principle of stability of tax legislation (Article 4 of the Tax Code of Ukraine), changes to the list of tax expenses should be minimum.

● ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

N.P. Matselyukh (2020) considers it is necessary to «understand the experience of carrying out tax reforms in other countries, rethink the essence of the tax activity of the state and the strategy of the tax policy. The effectiveness and efficiency of the tax policy strategy is achieved through the process of tax forecasting and planning». We believe that it is very appropriate to use tax planning and forecasting in the development of the Tax Policy Strategy, which should allow the formation of development vectors, that the state should achieve.

T. Yefimenko *et al.* (2022), who consider it is necessary to «standardise the transparent methodological principles of quantitative and qualitative examinations of the expediency of tax benefits». Such examinations will make it possible to approach the composition of tax benefits substantially and, according to the authors, they can be included in the list of tax expenses, which should become a key factor in reducing budget losses.

Most scientific studies emphasise that the main method of estimating tax costs is the method of lost income (Sokolovska & Petrakov, 2013; Barrios *et al.*, 2016; Redonda *et al.*, 2021). At the same time, some countries also use the revenue recovery method and the equivalent cost method to estimate tax costs, which, according to the authors, does not allow an aggregated assessment of tax costs for all countries.

In addition, A.M. Sokolovska (2022) believes, that in recent times there are differences in the identification of elements of the basic structure of taxes in different countries. This situation appears due to different approaches to

the construction of legislation in the countries. The majority of countries (for example, Australia, Canada, USA, Belgium, Spain, Finland, Sweden, Denmark) use a conceptual approach to determine the basic structure of taxes. Other countries (Austria, Netherlands, France, Japan) emphasise the legislative approach. Only two countries (Germany and Great Britain) use a different approach, in which tax costs are treated as subsidies. The authors believe, that the legislative approach of the basic structure of taxes determination should be taken as a basis in Ukrainian practice, with a clear regulation of all taxation rules and deviations from them (tax benefits).

T. Yefimenko *et al.* (2022) emphasise a necessity to monitor the effectiveness of tax expenditures, «which will make it possible to either confirm or deny the presence of compliance risk during the adoption and subsequent implementation of fiscal innovations». We fully agree with this opinion, because the monitoring of the effectiveness of tax expenditures should provide an answer to the question if it is feasible to apply tax benefits, and thus, adjust the budgetary processes in the state.

As L. Kassim & M. Mansour note (2018) in the vast majority of countries taxpayers report on all taxes, for which tax expenditures were determined, thus, on this basis it allows to assess these tax expenditures and determine their impact on budget revenues. We consider this practice appropriate, since the state must control the processes of granting benefits, but persons, who have received the right to such benefits, must document this right.

In A. Redonda *et al.* work (2021) it is proved, that in most EU countries the requirements for reporting tax expenses are fixed at the legislative level, but in recent times there is no internationally agreed format for the Consolidated report on tax expenditures. The Consolidated Report form is difficult to implement, because there are differences in the legislation of countries, but the structure and approaches to the display of tax expenditures should be unified, which will allow an aggregate assessment of tax expenditures in all countries.

In A. Redonda *et al.* work (2019) the proposals for increasing the effectiveness of tax benefits are substantiated: «a transparent procedure for their provision; the improvement of the tax incentive structure in order to minimise excess profits and negative side effects; abolition of tax expenditures that harm the environment and contribute to the irrational use of natural resources». We fully support such theses, because in Ukrainian tax practice a transparent mechanism for granting tax benefits must be applied to prevent abuses and the use of corruption schemes. We also believe that benefits for carbon dioxide emissions should be abolished, as such benefits do not stimulate the use of environmentally safe production technologies.

● CONCLUSION

Based on the results of the study, it is found that the taxation processes in Ukraine need to be adjusted. Taking into account the European vectors of development, Ukraine should gradually switch to taxation rules in accordance with the requirements of various EU Directives. One of these requirements is the transition to the tax expenditure concept.

The study proves, that despite the requirements of the legislation some countries ignore the requirement

to establish a list, record, estimate and report on tax expenditures. However, most EU and OECD countries do not compile current reports on tax expenditures, but also make forecasts regarding the impact of tax expenditures on budget revenues. This is the main difference between the world experience and the Ukrainian one, since Ukraine still lacks a clear and well-founded list of tax benefits; the state does not report on the loss of budget revenues from the provision of tax benefits in the public space, but it is limited only by the Directory of benefits and moreover, it does not always correlate with the norms of legislation.

On the basis of the research carried out by the authors the sequence of stages of the introduction of the tax expenditure concept into the Ukrainian tax legislation is substantiated, it should become a key factor for solving the problem of the budget deficit thanks to the formation of a clear list of tax expenses, which are losses of budget revenues; monitoring the effectiveness of tax expenditures; substantiation of the goals of each type of tax expenditure and their ultimate beneficiaries; ensuring reporting of tax expenditures of all recipients of tax benefits, which are classified as tax expenditures; formation of budgets at different levels based on the Consolidated Report on Tax Expenditures.

The implementation of such directions of the tax expenditures concept should be carried out within the framework of the implementation of the State Tax Policy Strategy, which allows to form the vector of tax development in Ukraine for a long term and strengthen the trust

of taxpayers to state authorities, especially if this Strategy is aimed to solve issues of social justice, equality all persons before the tax legislation, simplification of the procedure of administration and accounting of tax payments.

In the process of tax benefits inventorying and tax expenditure monitoring, the attention of the controlling authorities should be focused on tax control measures for persons, who receive tax benefits, which are included in the composition of tax expenditures. At the state level it is assumed that a list of indicators should be determined (separately for different categories of taxpayers), on the basis of which a decision regarding the feasibility of providing tax benefits will be made; the procedure for controlling income and expenses of taxpayers based on the annual declaration of such data is standardised; the responsibility of taxpayers for providing inaccurate information is determined. This should become the subject of further scientific research, as the process of providing tax benefits should be accompanied by effective control measures to prevent baseless use of budget funds. Thanks to control measures the state can significantly reduce the amount of budget losses from the provision of tax benefits.

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● CONFLICT OF INTEREST

The authors declare no conflict of interest.

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Обґрунтування етапів впровадження концепції податкових витрат

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Анотація. Однією із ключових проблем сучасної системи оподаткування в Україні є безсистемне надання податкових пільг та відсутність реальних інструментів моніторингу за їх використанням, що зумовлює актуальність дослідження. Метою дослідження було теоретичне обґрунтування етапів впровадження концепції податкових витрат для зменшення витрат бюджету від надання податкових пільг. В дослідженні застосовувалися такі наукові методи: аналіз, синтез, індукція, дедукція, аналогія, порівняльний і статистичний аналіз, логічне узагальнення. У роботі встановлено необхідність впровадження концепції податкових витрат, що передбачає розробку та впровадження Стратегії податкової політики, з метою врегулювання концептуальних засад податкової політики; інвентаризацію діючих податкових пільг та перегляд переліку отримувачів пільг (контроль доходів та витрат осіб); підготовку змін до податкового законодавства з обов'язковим їх фінансово-економічним обґрунтуванням (забезпечення дотримання принципу стабільності законодавства); унормування системи моніторингу результативності податкових витрат (розрахунок показників ефективності податкових витрат); врегулювання порядку звітування платниками податків за податковими витратами шляхом уніфікації форми звітності; унормування порядку складання Звіту про податкові витрати органами виконавчої влади та врахування його результатів в бюджетній та податковій політиці; обґрунтування підстав для внесення змін до переліку податкових витрат. Практичне значення одержаних результатів полягає в обґрунтуванні послідовності етапів впровадження концепції податкових витрат з метою зменшення витрат доходів бюджету та його дефіциту. Дана концепція має сприяти прозорості використання бюджетних коштів та має забезпечити обґрунтований підхід до складу податкових пільг, що будуть віднесені до переліку податкових витрат за кожним податковим платежем

Ключові слова: надходження до бюджету; пільги; моніторинг; дефіцит бюджету; втрати бюджету

Transforming of traditional commerce into e-commerce: Trends in the world and in Ukraine

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Abstract. Given the current circumstances of the late 2010s-early 2020s (pandemic, war) in Ukraine, e-commerce has received a stable basis for even greater growth rates, so the implementation of e-commerce tools in businesses of all levels is especially relevant. The goal of the study was the analysis of the development of commerce in the world and Ukraine and analysis of the current state of e-commerce. To achieve the goal, the methods of analysis, synthesis, projection, expert opinions were used. So, the evolutionary nature of transformational processes in commerce in the world is substantiated, the importance of introduction of e-commerce tools in businesses of all levels is proved. A comprehensive analysis of the latest research on the development of e-commerce, dedicated to the improvement of all stages of online commerce is performed. Reasons for the current formation of global world commerce are identified and structured by social, economic and technological nature, the trend of further development of the trade, namely the growing share of online commerce, is highlighted and substantiated. The assessment of the results of impact of COVID-19 pandemic shock on the state of both traditional and e-commerce is carried out, a forecasted state of commerce in the coming years after the pandemic and the perspective tools to be used in e-commerce are projected. The main factors and features of global processes of transformation of traditional commerce into e-commerce are determined. A comparative analysis of the state of e-commerce in the world and in Ukraine, as well as in different product categories, is carried out. Trends in the development of commerce in the South Korean cosmetics market have been identified on the example of the Ukrainian company Lovely Bunny Group LLC. The functional up-to-date trends which allow increase of traffic and sales are described. The advisability of implementation of innovative tools in e-commerce marketing is substantiated. Study results may be interesting for the businesses of different levels to significantly increase sales efficiency in both the short and medium terms

Keywords: analysis; marketing trends; development of commerce; COVID-19 impact; innovative information technologies

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● INTRODUCTION

Evolutionary processes inherent in all spheres of human life can be observed throughout history. Theory and practice in the long run are always improving. Primarily it concerns economy. In the field of economics, it has always been as a special feature that businesses are forced to operate in conditions of uncertainty and risk and to adapt to a world and environment that is constantly changing. Now innovations and modern information technologies have covered all areas. New tools to attract customers, artificial intelligence and genetic algorithms to find the right service or product, machine learning algorithms to find a future buyer, big data science to analyse, verify and process

any phenomenon, etc.: today it all already looks not so unique. And given this, it may come as a surprise that in the late 2000s and even early 2010s, buying something in an online store was considered as a risky idea.

Now the situation has completely changed. In report "Key Figures of E-Commerce" (E-Commerce..., 2022) the growth rate of the volumes of electronic (including mobile) commerce is impressive, especially in recent years. It should be noted that with the growth of sales, competition in electronic commerce is growing as well. And, most importantly, this competition extends to the marketing in e-commerce: although the "places" to spread online

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marketing are relatively limited, the competition among sellers for getting a “click” is very fierce, not to mention the banners on the main pages of marketplaces or, for example, getting a respected “Amazon choice”, which will increase sales there tenfold, as Z. Yang (2022) noted in his research.

It should also be noted that competition in e-commerce marketing leads to the evolutionary development of commerce itself: for example, competition forces online platforms to provide potential buyers with a more personalised experience that would improve trade efficiency, conversion rates and, as a result, optimise marketing costs.

In recent years, the spread of online commerce has been particularly noticeable. As mentioned above, business always operates in conditions of uncertainty, and in 2020-2021 the spread of electronic commerce arose primarily due to the adaptation of business to unforeseen circumstances and changes in operating conditions due to the shock of COVID-19. Ch. Wang *et al.* (2020) pointed that a sufficient part of people worldwide is forced to stay at home to avoid spreading of the virus, and not to visit usual stores and supermarkets. Therefore, online purchases became an advisable alternative for customers. The coronavirus pandemic has been going on for more than three years, and predictions about its continuation and how the relevant business situation will change are still unclear. Accordingly, it is not clear how customers' buying behaviour will be changed too. Thus, it can be argued that the trend of increasing the share of e-commerce in total retail trade will continue for a long time. However, the transformation of traditional commerce into e-commerce has not completed yet, and that is why the question of how and in what direction this transformation will develop is relevant for both local and global economy as a whole.

The goal of this study was to determine the direction of e-commerce development in the world and in Ukraine and the direction of relevant further research based on the consolidated analysis of the reasons for the modern formation of online trade and the comparison of different approaches used in different regional and category markets.

● LITERATURE REVIEW

In the mid-2000s economic scientists and experts began to pay close attention to new approaches to global commerce, namely the spread of online commerce as a new sustainable trend. For almost two decades traditional and e-commerce have undergone significant transformations, and recent works and publications (Treiblmaier & Sillaber, 2021; Micol Policarpo *et al.*, 2021; Esmeli *et al.*, 2022) are often devoted to the innovations that are beginning to be used in trade.

Studies (Shareef *et al.*, 2021; Orji *et al.*, 2022; Bhatia *et al.*, 2022) mostly pay attention to the point how trade has changed since the COVID-19 pandemic. All the authors note that after some slippage in 2020, the growth of the share of e-commerce in 2021-2022 will gain momentum (Verdon, 2021). Moreover, I.J. Orji *et al.* (2022) on the example of logistics firms identified that e-commerce has the biggest impact on the effectiveness of the firm and the mediating role of pandemic shock response strategies, and pointed out which tools during the pandemic have the greatest impact on the effectiveness of firms.

R. Esmeli *et al.* (2022) pay attention to modern tools that allow you to get a transaction from potential buyers

as early as possible. Researchers provide advice on increasing customer loyalty and appropriate marketing strategies based on previous user purchase forecasts. R.M. Fuller *et al.* (2022) investigate how e-commerce capabilities have differently affected performance outcomes based on observations from major online retailers over the past seven years. The works (Jannach & Jugovac, 2019; Treiblmaier & Sillaber, 2021; Micol Policarpo *et al.*, 2021) are devoted to the review of the latest developments and trends in the use of machine learning, recommendation systems, in order to optimise marketing budgets and to increase the level of conversions of online stores.

Zh. Zhu & S.-F. Lin (2019) are focused on entrepreneur; they highlight the role of entrepreneurial perceptions which allow reaching higher efficiency and new ways of growth just as a response to the transformation of traditional commerce into electronic.

P. Patil *et al.* (2020) arise the topic of growing tendency in the use of mobile payments on example of Indian market and consumers. By implementing of Meta-UTAUT model, they underlined the most significant factors which impact consumer's behaviour and its change under conditions of transforming economy.

G.A. Lucas *et al.* (2023) emphasise the importance of research on m-commerce (mobile commerce), as one of the most promising forms of e-commerce. The investigation highlights the factors which influence consumer's selection of online platform for purchase (traditional electronic or mobile) the most and recommends appropriate practical implications for retailers.

Similarly, the study (Dastane *et al.*, 2023) substantiates that existing customer perceived value scales for traditional retail should be improved according to the current stage of business transformation and adoption to m-commerce. Considering the essential differences between different forms of commerce, the authors propose a multidimensional scale which helps to increase the efficiency of m-commerce.

However, it should be noted that in general, among the current works there are no works to summarise, compare and analyse all the trends in the transition from traditional commerce to e-commerce, especially given the speed of progress in this area. Regional and categorical differences in approaches to online trade are also not taken into account.

● MATERIALS AND METHODS

In the process of research, the following scientific methods were used: analysis, synthesis, projection. So, method of projection was used for consolidation of a necessary data for the further comprehensive analysis. The analysis, as the main method of the research, was carried out for solving the tasks needed for reaching the main goals of the study. Those goals were as following: review of the world economy, its dynamics; an assessment of the impact of shocks from the COVID-19 pandemic; an estimation of the shares of e-commerce and retail trade in terms of countries and an assessment of changes in trends in online trade, taking into account the different stages of development of commerce in different countries, etc.

Also, to expand the analysis and comparison of the state and trends of e-commerce in Ukraine and in the world, including different goods categories, by the methods of synthesis and analysis the assessment of Ukrainian

company “Lovely Bunny Group LLC” (Kharkiv) that imports and distributes Korean cosmetics in Ukrainian market (On-line-store..., n.d.) was carried out.

Methods of synthesis and projection were used for highlighting the trends in the process of transforming traditional commerce into e-commerce, for estimation of potential rates of growth and theoretical forecast of sales shares, for defining the expedient directions of further researches in the field of e-commerce in various categories and the countries with use of the newest economic and mathematical methods and models, such as fuzzy neural networks, big data science methods, auto-regressive models.

● RESULTS AND DISCUSSION

First of all, it should be noted that the global economy as a whole is growing from year to year. However, the growth rate is slowing down: according to the IMF from 5.9% growth in 2021 it will change to 3.8% in 2023, and in developed countries the growth rate will fall almost twice (World economic outlook update, 2022). As for retail trade, this segment of the economy has suffered the most due to the shock of COVID-19. Thus, in 2020 (the first year with quarantine restrictions) the volume of retail trade fell by

2.9%. At the same time, for this reason, in 2020 the share of online trade in total retail increased the most: from 13.8% to 17.8%, and in monetary terms – from 3.35 to 4.28 trillion US dollars (Verdon, 2021). As mentioned above, a decade ago, very few people used online shopping. According to a study (Chaffey, 2021) until March 2020 (when the first restrictions were massively introduced), about 9% of Americans and 15% of Britons have never bought anything online. Therefore, it can be assumed that the basis for further rapid growth of online sales is very large.

Indeed, these volumes form a steady linear upward trend. As noted in (E-Commerce..., 2022), the number of online consumers is growing significantly every year, and reached 2 billion customers in 2020. Moreover, it showed a growth rate of over 25%. Based on data (Verdon, 2021), the total volume of retail sales of e-commerce since 2014 (with forecasts for 2022-2025) are shown in Figure 1.

Thus, as can be seen from Figure 1, there is a constant very high rate of growth in electronic commerce. For 11 years, the average annual rate is an impressive 46.0%.

A similar trend is in the share of e-commerce in general retail. The dynamics of the growth of e-commerce share in the total retail for 2009-2021 and the forecast values of the share until 2025 are shown in Figure 2.

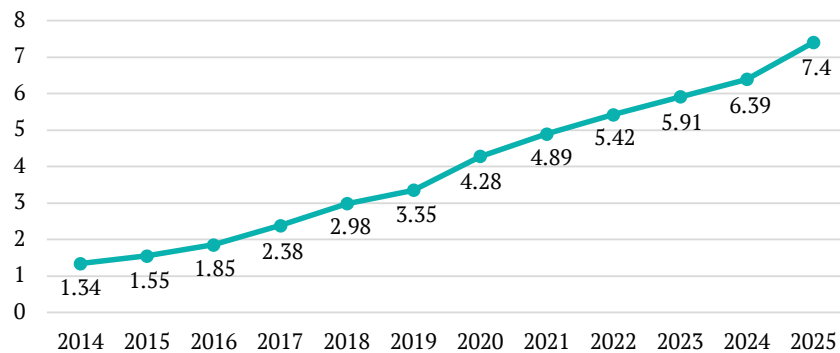


Figure 1. Retail sales of e-commerce in 2014-2025, trillion US dollars

Source: compiled by the author based on J. Verdon (2021)

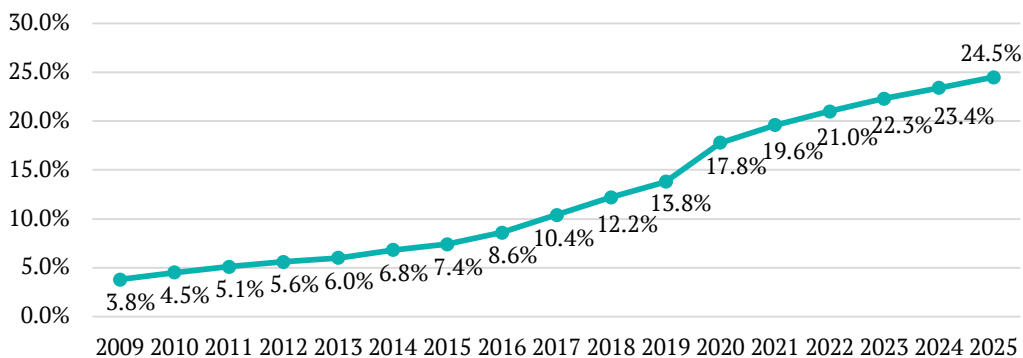


Figure 2. The share of e-commerce in total retail trade in the world in 2009-2025

Source: compiled by the author based on D. Chaffey (2021)

As can be seen from Figure 2, in 2020 there was the greatest growth of e-commerce. At the same time, we can say that both before (during 2009-2019) and after (2021-2025) the trend was growing linearly. In 2012, the average

share in the United States was 9.7%, in the United Kingdom – 10.6%, and in the European Union – 4.8% (the lowest share). By many aspects, the leading country in e-commerce is still the United States (which has almost a quarter of the

total sales), and, as shown in research (Chaffey, 2021), in the 1st quarter of 2021, the growth of e-commerce in the US market was 39% compared to 2020, with a growth of

38% worldwide. In the USA the share of e-commerce sales is also growing every year and, by forecast, will reach 23.6% by 2025, as shown in Figure 3.

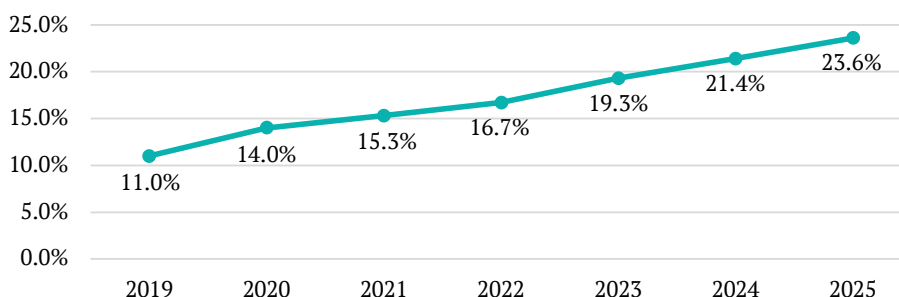


Figure 3. Forecast values of the share of e-commerce sales in the United States in 2019-2025

Source: compiled by the author based on D. Chaffey (2021)

In other words, at the beginning of the online sales era (2000-2010), the share of e-commerce in the United States was much higher than the world average, and in the last decade the figures have been roughly comparable, but the United States still accounts for about a quarter of all volumes of e-commerce, and it is projected that in 2022 for the first time the volume of e-commerce in the United States will exceed 1 trillion US dollars. In general, the growth rate in 2022-2025 is projected with some decline, but it will be at least 10% annually (Chaffey, 2021), and in the coming years the share of e-commerce will reach 25% of total retail sales. European countries (excluding the United Kingdom) show a smaller share (in 2019 it was only 10.1% in the EU), but have higher growth rates (from 4.8% in 2012, i.e. growth of 15.7% annually) (Gvozdytskyi, 2022).

All the above information allows us to conclude that the global retail economy is changing rapidly. And the COVID-19 pandemic was not a trigger, but another (and global, importantly) reason for all companies to pay the most attention to e-commerce. And in recent years, the leaders of the global e-commerce market (Amazon and Alibaba, which have more than 5 billion unique users each month) entered the TOP of the world’s largest companies (Yang, 2022).

The author believes that the main reason for the trend of high rates of growth of e-commerce in all spheres is the

total informatisation in the world, in particular: rapid expansion of Internet access in the world with the addition of space technology (hundreds of new satellites each year); rapid development of the mobile sector, so that all people cannot imagine life without a smartphone; sufficient growth of information and digital technologies, which allows users to choose from a variety of online platforms (to view, compare and purchase any goods and services), etc.

Also, according to the author, at the beginning of the era of online sales, one of the reasons for the rapid growth in the number of digital buyers and sellers was the creation, development and distribution of PayPal digital payment platform. After all, PayPal solved one of the biggest problems that was common among online stores at that time: potential buyers did not use online stores because they were afraid that: purchased goods or services will not suit them, because before buying they physically “did not test them”; after the transaction, the seller will simply disappear. And PayPal made a 100% guarantee of all payments and was completely on the side of the buyer, that is why it quickly gained an excellent reputation (Preibusch *et al.*, 2016).

Thus, today PayPal is still one of the leading mobile payment platforms worldwide and ranks third after credit and debit cards and ahead of all other payment methods. Volumes of transactions through PayPal in 2014-2021 are shown in Figure 4.

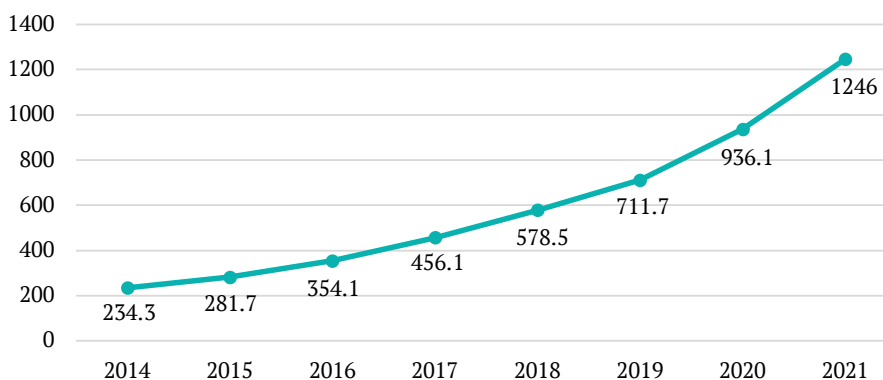


Figure 4. Dynamics of transactions through PayPal in 2014-2021, billion US dollars

Source: compiled by the author based on E-Commerce... (2022)

Thus, we can see that every year the total volume of transactions through the PayPal system increases significantly (average growth rate – 66.4%). In 2021, the total number of transactions was more than 16 billion, and at the end of 2021 the number of active users was 426 million (E-Commerce..., 2022).

For the reasons mentioned above, the Asia-Pacific region is constantly showing the greatest growth in e-commerce, especially India and China (Patil *et al.*, 2020). These are two countries that account for almost a third of the world’s population, they are among the largest in area, and until recently in many areas there was no good quality access to the Internet. Nowadays in these countries the availability of cheap mobile broadband networks brings the largest number of new digital buyers worldwide.

It should also be noted that if at the beginning of the transformation of traditional commerce into e-commerce (early 2000s) the change of purchasing for the buyer was the use of desktops, now the transformation of e-commerce involves using a smartphone instead of a desktop computer. And in some countries in the Asia-Pacific region, the share of purchases via smartphone reaches 75% (E-Commerce..., 2022; Nofrizal *et al.*, 2023).

And it can be argued that currently one of the most noticeable trends in the world of e-commerce is the growing use of mobile devices. For example, in 2021, smartphones accounted for almost 70% of all retail website visits worldwide, although visits to desktops and tablets led to higher conversion rates in 2020 (E-Commerce..., 2022). It should be noted that the average cost of online shopping orders via smartphones and tablets still lags behind traditional online orders via desktops, but the innovative component of mobile devices is constantly progressing altogether with combining improved site usability and annual increase in average smartphone screen sizes. So, we can conclude that in the future there will be a steady trend of increasing the share of purchases via mobile devices and the level of conversion through them.

Speaking about the trends of commerce in Ukraine, it should be noted that in general the country has noticeable global trends: the ever-increasing share of e-commerce, the share of smartphone use (although it is lower than the world average), the leading role of marketplaces and more. Thus, in 2020: the share of e-commerce in retail trade was 8.8% (in 2019 – 7.0%); sales were 4 billion US dollars (in 2019 – 3.3 billion); the share of mobile devices is 51% (Omelchuk, 2021). Following these indicators, it can be seen that e-commerce in Ukraine lags far behind the world average (for example, this share of e-commerce was the world average in 2017).

Another trend in Ukrainian e-commerce is the transformation of traditional online stores into multi-category marketplaces (Gvozdytskyi, 2022). Bright examples are Rozetka, Epicentr, Allo stores, which are the leaders in online trade. If at first these sites worked according to the usual scheme of the online store (minimal own stock of the goods; the biggest part of sales was got after receiving confirmation from suppliers; limited number of product categories (for example, Epicentr had only construction products, etc.), now they are full-fledged large-format marketplaces, where you can buy almost any product or even service. Together with other leaders of online sales in Ukraine (Prom, Bigl, Zakupka, etc.) in general in Ukraine 82.6% of online sales are marketplaces (E-commerce in the total turnover..., 2021).

Online electronics stores account for about 14.8% of sales (the largest ones are: Foxtrot, Eldorado, Comfy, Moyo, etc.). And it should be noted that historically, the largest share of sales in e-commerce in Ukraine was occupied by electronics, and this status was maintained in 2022. Other leading categories are clothing, cosmetics, toys, etc.

Below the analysis of e-commerce in Ukraine in the one of the most dynamically progressing category of “cosmetics” is presented. In general, this category has similar trends with others: the largest offline players are actively developing their own online stores, but still in cosmetics, these players pay less attention to e-commerce. Thus, the largest online sales sites for cosmetics in Ukraine are: Make-Up (focus only on cosmetics and perfumes, only online), Eva and Prostor (the largest offline networks), Rozetka (the largest online store in Ukraine in all categories in general), Prom (one of the largest marketplaces), Parfums, etc.

Among all sub-segments of the “cosmetics” category in Ukraine, cosmetics from South Korea have shown the highest growth rates in recent years. These cosmetics combine all the advantages of modern technology and are very popular both among the younger generation because of its innovation and among older people because of its functionality.

A characteristic feature of this market in Ukraine is that, unlike many others, the formation of the Korean cosmetics market in Ukraine began with e-commerce. And in traditional commerce until 2019, these products were not presented in the largest chain networks.

Therefore, it should be interesting to have a look at an example of one of the leaders in the Ukrainian market of Korean cosmetics – Lovely Bunny Group LLC, which began operations in 2014 and sells these products in their own online and offline stores, and through marketplaces and wholesale distribution.

The shares in sales of traditional and e-commerce of the company for the period 2014-2022 are presented in Table 1.

Table 1. The share of e-commerce of “Lovely Bunny Group” in 2014-2022

Year	E-commerce		Offline trade
	Total online	including marketplaces	
2014	100.00%	0.00%	0.00%
2015	100.00%	0.00%	0.00%
2016	89.29%	0.00%	10.71%
2017	81.71%	0.00%	18.29%
2018	71.30%	0.00%	28.70%

Table 1, Continued

Year	E-commerce		Offline trade
	Total online	including marketplaces	
2019	80.95%	0.09%	19.05%
2020	72.02%	3.93%	27.98%
2021	67.19%	44.28%	32.81%
2022	88.63%	53.25%	11.37%

Source: compiled by the author based on Online-store... (n.d.)

As can be seen from Table 1, trends in the sales channels of Korean cosmetics in Ukraine differ from other categories: for example, having started offline sales in 2016, their share in total volumes has been constantly increasing (except in 2019). And the most rapid is the growth of sales through marketplaces: from 3.93% in 2020 to 44.28% in 2021. It can be assumed that offline growth is due to the relative youth of this market in Ukraine with the general predominance of traditional commerce in Ukraine and very low representation of this segment offline. And the growth of marketplaces is due to the above reasons (pandemic, the general mood of commerce for the transformation into e-commerce). But it should be noted that despite the overall trends, sufficient decline in offline share in 2022 is related with Russian aggression and start of the war against Ukraine, because the company, based in Kharkiv, had to move its business.

In general, it should be noted that e-commerce does not only mean that the consumer buys a product or service not in a traditional store, but online. In e-commerce there is also a transformation of the rules of such trade: first of all, marketing strategies of sellers and behaviour before and at purchase by consumer.

Regarding marketing: search traffic provides the most users in e-commerce stores (about two thirds in total – 75% in the example of “Lovely Bunny Group”), and around 30% of the traffic is generated from contextual advertising. An interesting feature: every second potential buyer firstly tries to find and evaluate the necessary product on the largest sites (Amazon – in the US, Rozetka – in Ukraine), and then begins to actively look for it in different stores, to compare prices and other properties (73% of buyers use several channels in the process of search and purchase) (Harte, 2022). It is also difficult to overestimate the role of an electronic word of mouth and of the feedbacks: the same number of customers need an average of 6 real reviews from other customers, and for 64% of users the probability of buying increases if there is a video-feedback or video review (Gregoriades & Pampaka, 2020).

Social networks are very important now. In addition to their own huge traffic and the fact that they often already have a built-in marketplace, for other e-commerce sites, they act as both traffic generation and targeted advertising. They are also aimed at “facilitating” the whole purchase process. For example, in recent years, the buyer often has not been in need to register as a buyer in the online store – this uses the signing in through social networks.

In turn, brands use social networks to promote their products through influential bloggers (because social evidence from influencers increases sales easily), and video hosting (such as YouTube) actively disseminates not

traditional blog reviews about the product, but more original product placements. In addition, “real-time sales” technologies have been increasingly used as marketing in recent times, when watching a live broadcast, the buyer can make a purchase at the same time (Milne, 2022; Liu & Wang, 2023).

As mentioned above, such a rapid spread of e-commerce is due primarily to innovative information technology. On the one hand, these technologies are aimed at attracting a potential buyer “to the trap”, having previously fully studied it, and on the other – greatly facilitate and even make the buying process non-routine. For example, the e-commerce of the biggest giants uses Metauniverse, augmented realities, gaming platforms. And search services now allow you to find where to buy the desired product, simply by providing a photo of this product to a service.

It should be noted that other, more traditional technologies still have a significant impact in e-commerce. Although search traffic takes up more than two-thirds, loyal customers are always highly valued, so loyalty programs remain and are modernised. They are often combined with an individual approach and personal consultations. J. Ferreira *et al.* (2023) try to direct the businesses’ focus on their ability to implement new digital features; they substantiate that in modern circumstances the company’s competitiveness strengthens with implementing the innovative information technologies and digitalisation.

Although the share of e-commerce in trade is becoming more sufficient every year, offline stores still show huge volumes of sales. Results of the research (Higueras-Castillo *et al.*, 2023) present similar conclusions, especially noting the differences in shopping behaviours not only between online & offline purchasing but also between different countries and countries’ cultures. That’s why, as the authors conclude, it is of a high importance to analyse the most valuable factors which impact the intent to make purchase via e-commerce instead of an incentive to continue buying in physical stores.

At the same time, it should be noted, that digital transformation and e-commerce evolution requires the development of appropriate education of existing and potential entrepreneurs (Ho & Chen, 2023). Such education must provide up-to-date e-commerce competencies which contribute the performance the most. The author considers this area as a promising one for future research.

As it was mentioned above in the analysis of the reasons of formation of the current state of electronic commerce, commerce transformation is an evolutionary process, it develops under changing conditions. And researches R. Nicewicz & B. Bilska (2021), S. Modgil *et al.* (2022) confirm the results that changing conditions bring both obstacles for the development but the new opportunities for the

businesses as well. In the work (Nicewicz & Biliska, 2021) on an example of different market (food products in Poland) it is shown that long-term success of a business is related with the presence of business' ability to adapt, in terms of e-commerce – adaptation to the change in consumer's habits and behaviour during COVID-19 pandemic.

To reach this, the authors D. Koehn *et al.* (2020), Y. Xiao *et al.* (2023) propose to implement new algorithms for analysis of consumer's behaviour. Based on clickstream data, it is possible to model the influence trends and to create appropriate marketing campaigns. Moreover, improved campaigns should be based on the forecast of future engagement behaviour, which may increase the revenues significantly.

As it was mentioned above, one of the marketing trends in e-commerce is the use of livestreaming commerce. But the factors which impact on customer engagement behavior and purchase intention have not been studied deeply yet. L. Liu *et al.* (2023) highlight the importance of individual competencies of streamers for reaching higher sales performance by deep learning method and developing an econometric model to analyse the effects of the streamer's appearance on sales.

The work (Li & Wang, 2023) extends the research of the impact of individual competencies on e-commerce efficiency by studying the role of chatbots language style. The authors substantiate the high importance of chatbots especially in cases when customer is not familiar with the brand. They conclude that chatbot language style has a significant influence on consumer's continuance of interaction and on the attitude to the brand, which should be useful for developing optimal marketing strategies.

Thus, it can be summarized that being a modern trend in trade, e-commerce requires implementation of up-to-date methods as well. And a very big part of recent works (Leung *et al.*, 2019; Zhang *et al.*, 2021; Salamanis *et al.*, 2021) is devoted exactly to the usage of different technologies for evaluation and making appropriate managerial decision in e-commerce. Y. Xiao *et al.* (2023) substantiate the biggest role of artificial intelligence in commerce. On an example of such an option of e-commerce as fulfilment centres, they discuss a system of different features and resources which must be "orchestrated" by both information technologies and human, to be able to generate strong capabilities, such as learning, forecasting and decision support. Paper (Salamanis *et al.*, 2021) studies a traffic forecast by auto-regressive modelling and the use sparse least squares method; authors indicate that these methods allow to make faster models with remained balanced accuracy.

The study (Leung *et al.*, 2019) arises a relevant topic of the complexity of e-commerce logistics. Speed of order processing, its handling and delivery becomes a must-have for every business, and due to this it is important to create and implement an appropriate decision support system, with forecasting of e-commerce order arrivals and their further grouping into batches. For this purpose, the authors propose to use a set of econometric models, based on adaptive neuro fuzzy method, ARIMA-models, auto-regressive models and a hybrid model.

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The work (Cai *et al.*, 2023) investigate the most valuable factors which have the biggest influence on the sales. Using partial least squares structural equation modelling, it has been concluded that product description informativeness and richness impacts on sales the most. S. Zhang *et al.* (2021) analyse the market planning in e-commerce. To achieve this task, they recommend to perform transaction trend forecasts using different models based on enhanced whale optimisation algorithm with support vector machine.

Thus, it can be concluded that a promising area for research in the field of e-commerce is a development of a set of economic and mathematical models, which allow to select the factors which influence the sales performance the most, to forecast different marketing indicators of commerce, to simulate different scenarios, to support decision making.

● CONCLUSION

The comprehensive analysis of a modern stage of commerce development, which is stated as a study's goal of this work, has been carried out. It can be concluded that today the biggest players in the world economy have started their e-commerce. And the progress in this area is tremendous. The main reason for the growth of online commerce is significant progress in digitalization and implementation of innovative information technologies in the world. The role of e-commerce during the coronavirus pandemic, which has had a huge impact on consumer behaviour and has become a real security card for global business, is particularly significant. However, the transformation of traditional commerce has not completed yet, and a comparative analysis of the state of e-commerce in the world and in Ukraine, as well as in various product categories proved that for both micro and macro levels, local and segmental features should be taken into account, and an optimal balance should be found.

In general, global e-commerce traffic has a fixed growth trend. Therefore, for all types of business a short-term priority is the rapid development and implementation of new technologies for the promotion and selling of products on the Internet in all online channels. First of all, e-commerce marketing tools should be aimed at providing potential buyers with a more personalised experience that would improve the efficiency of trade and the level of conversions. Such state-of-the-art tools should be used through the implementation of neural network technologies, machine learning, recommendation systems based on artificial intelligence, big data science methods and auto-regressive models. That is why in order to increase the effectiveness of e-commerce, it is advisable to perform further research aimed at forecasting marketing indicators of e-commerce using methods of economic and mathematical modelling and modern models of socio-economic forecasting.

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● CONFLICT OF INTEREST

The author declares no conflict of interest.

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Трансформація традиційної комерції в е-комерцію: тренди у світі та в Україні

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Анотація. Зважаючи на сучасні обставини в Україні кінця 2010-х – початку 2020-х років (пандемія, війна), е-комерція отримала стійке підґрунтя для ще більших темпів зростання, тому впровадження інструментів електронної комерції в бізнеси будь-яких рівнів є особливо актуальним. Метою статті був аналіз питання розвитку комерції в світі та Україні та аналіз причин актуального стану е-комерції. Для досягнення мети методи аналізу, синтезу, проєкції, експертних думок були використані. Було обґрунтовано еволюційний характер трансформаційних процесів у комерції в світі, доведено значущість впровадження інструментів електронної комерції в бізнеси будь-яких рівнів. Проведено комплексний аналіз останніх досліджень із питань розвитку е-комерції, присвячених удосконаленню всіх стадій онлайн-торгівлі. Виявлено та структуровано причини сучасного формування глобальної світової торгівлі за соціальними, економічними та технологічними чинниками, виділено та обґрунтовано тенденцію подальшого розвитку торгівлі, а саме зростання частки онлайн-торгівлі. Проведено оцінку результатів впливу шоку від пандемії COVID-19 на стан як традиційної, так і електронної комерції, зроблено теоретичний прогноз щодо стану комерції в найближчі роки після пандемії та перспективні інструменти для використання в електронній комерції. Визначені основні чинники та особливості глобальних процесів трансформації традиційної комерції в електронну. Проведено порівняльний аналіз стану е-комерції в світі та в Україні, а також у різних товарних категоріях. Визначені тренди розвитку комерції на ринку південнокорейської косметики на прикладі української компанії ТОВ «Лавлі Банні Груп». Описано функціональні сучасні тенденції, які дозволяють збільшити трафік і продажі. Обґрунтовано доцільність впровадження інноваційних інструментів маркетингу електронної комерції. Результати дослідження можуть бути цікаві для бізнесу різних рівнів з метою значно підвищити ефективність продажів як у короткостроковому, так і в середньостроковому періодах.

Ключові слова: аналіз; маркетингові тенденції; розвиток комерції; вплив COVID-19; інноваційні інформаційні технології

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