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Харківський національний економічний університет імені Семена Кузнеця  
61166, пров. Інженерний, 1-А, м. Харків, Україна  
E-mail: [info@ecdev.com.ua](mailto:info@ecdev.com.ua)  
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**Editors office address:**

Simon Kuznets Kharkiv National University of Economics  
61166, 1-A Inzhenerny Ln., Kharkiv, Ukraine  
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## Natalia Kurhan

PhD in Economics, Associate Professor  
Simon Kuznets Kharkiv National University of Economics  
61166, 9A Nauka Ave., Kharkiv, Ukraine  
<https://orcid.org/0000-0003-1155-6859>

## Olha Fartushniak\*

PhD in Economics, Associate Professor  
Simon Kuznets Kharkiv National University of Economics  
61166, 9A Nauka Ave., Kharkiv, Ukraine  
<https://orcid.org/0000-0002-6305-5901>

## Lidiia Bezkorovaina

PhD in Economics, Associate Professor  
Simon Kuznets Kharkiv National University of Economics  
61166, 9A Nauka Ave., Kharkiv, Ukraine  
<https://orcid.org/0000-0002-0423-0626>

## Improvement of organization and automation of commercial enterprise electronic money accounting in conditions of economy digitalization

**Abstract.** In the conditions of digitization of the globalized world economy, Ukrainian enterprises have an informational request for methodical recommendations regarding the technique of conducting and computerized accounting of electronic money payments, which are an innovative form of settlement transactions. The purpose of the study was to form actual methodological recommendations regarding the organization of automated accounting of payments in electronic money at the enterprise, as well as to justify the choice of the necessary software product for this purpose. To achieve the goal, the method of morphological analysis, comparative and critical analysis, system-structural approach, bibliographic method was used. Ukrainian enterprises are suggested to implement accounting work with electronic money in two successive steps. The transformations that will take place in the accounting work for settlement transactions of the enterprise in the case of the introduction of national digital currencies are substantiated. The technological possibilities of using neural networks for processing arrays of data regarding electronic money calculations carried out in payment systems are explained. It has been proven that, according to the forecasted trends, it is expedient for Ukrainian enterprises to switch from local accounting software products to the use of cloud services. Functional capabilities of 12 cloud-based software solutions popular in Ukraine for automating accounting and analytical work were analysed, from the point of view of the possibility of computerized accounting of settlement operations in electronic money. The advantages and disadvantages of individual SaaS services are explained, and the expedient ones are recommended for use. Recommendations were made to adjust the Order on accounting policy, following the scheme of organizational and procedural measures developed in the work. It is proposed to assess the compliance of the existing accounting software product with management information

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\*Corresponding author



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requests that arise when using electronic money to make payments. The recommendations were developed on the basis of a detailed study of the prospects for the further popularization of electronic money. The study is of practical interest for Ukrainian enterprises that involve in their business innovative payment solutions in the conditions of rapid digitalization of the economy

■ **Keywords:** e-wallet; payment system; transaction; electronic financial reporting; taxonomy; cloud accounting services

## ■ INTRODUCTION

In today's world, the Internet, in addition to a global network of entertainment and communication, is also becoming an integral component in the field of payments. In the conditions of growing needs of people, changes in the economy and scientific and technical progress, there is a need for a fast and efficient payment system that is able to satisfy the requests of both buyers and sellers. Electronic money and electronic payment systems were developed for this purpose. There are many views of researchers on the origin of e-money, but almost all of them come down to this. This is confirmed by the works of W.J. Luther (2019), B. Eichengreen (2019), A. Klein (2020). In 2018, Law of Ukraine No. 2473-VIII "On Currency and Currency Transactions" (2018) included settlement transactions with electronic money to the set of currency transactions. Companies traditionally make payments in fiat money in cash and non-cash forms. Existing legal provisions, theoretical developments and methodological recommendations of scientists comprehensively explain the procedure for accounting settlement operations carried out in fiat national and foreign currencies. The role of electronic money is to create a universal payment environment capable of uniting the buyer and seller of goods and services. Electronic money is a fairly flexible payment instrument that can completely replace fiat money.

Accounting legislation regarding settlement operations in digital currencies is under development both in Ukraine and in other countries of the world. In accounting, electronic money is recognized as an asset. However, regulations and other methodological recommendations do not imply the allocation of e-money as an independent accounting object. At the same time, it can be considered that electronic money has enough individual characteristics for its identification as a separate, independent accounting object. This requires the development of e-money accounting methods. The problematic issues of electronic money accounting were studied by such Ukrainian scientists as T. Mokienko *et al.* (2019), O. Podolyachuk (2019) and others. The introduction of cloud technologies into the accounting process is of great importance for the improvement of the accounting system of payments using electronic money. The rapid development of science and technology, the growth of data volumes, and the widespread use of Internet applications created the necessary context for the emergence of such a concept as cloud accounting. This method of accounting has many supporters among scientists all over the world. Authors such as P.M. Modi (2018), L. Ou & Z. Zhang (2020), I. Paiman (2020), who in their works noted the convenience of cloud accounting and its development prospects. The technique and methodology of accounting for payments made in electronic money is a field of scientific research. The reason is the transition period of gradual introduction of e-money to the global

business environment. The question of the essence and role of electronic money was considered by such well-known scientists as T. Adrian & T. Mancini-Griffoli (2019), D. Duffie (2019), C. Berg *et al.* (2019). In their opinion, the use of e-money in the future will be extremely popular and widespread when making payments around the world.

A fairly wide range of researchers devoted their work to defining the essence and concept of electronic money, its classification. However, the issues of evaluating and documenting settlement transactions with electronic money, organizing their synthetic and analytical accounting, as well as choosing the appropriate accounting software remain unresolved. The inadequacy of the theoretical base is primarily related to the incompleteness of the long process of introducing e-money to the world financial system. Taking into account the relevance of electronic money and their growing popularity in calculations, as well as the insufficient degree of research into the accounting system of electronic money, the purpose of the study was the formation of relevant methodological recommendations regarding the organization of automated accounting of payments in electronic money at the enterprise in the conditions of the current transition period of the formation of digital currencies, as well as justification of the choice of the necessary software product for this. The objectives of the research were: development of methodical recommendations regarding the accounting of settlement operations of a commercial enterprise carried out in electronic money; formulation of prospective changes in the current procedure for accounting settlement transactions under the influence of digitalization of the global financial system; substantiation of the expediency of the transition of Ukrainian enterprises from the accounting of settlement operations with local software to cloud-based software.

## ■ LITERATURE REVIEW

In modern economic science, a coherent theory of electronic money has not yet been developed. The presence of numerous publications that investigate various aspects of the development of digital payment systems does not ensure the formation of a conceptual basis for the functioning of electronic money. Definitions of electronic money formulated by foreign scientists can be reduced to three most common interpretations:

- as a dematerialized or electronic form of a bank ticket, the emission of which is carried out by "transformation" into an electronic form of monetary value (Peneder, 2022);
- as a financial product with a prepaid cost (Duffie, 2019);
- an instrument of exchange issued by a separate issuer and is a guarantee of the issuer to pay an equivalent amount (Adrian & Mancini-Griffoli, 2019).

According to M. Peneder (2022), in the process of replacing fiat money with electronic money, the function of money as a measure of value absorbs the function of a medium of exchange. With digital payments, they are no longer distinguishable and verifiable units of account that have become de facto mediums of exchange. Digitization of money brings to the fore the immaterial nature of money as a social accounting technology.

As noted by N. Windasari *et al.* (2022), the emergence of digital banking has significantly influenced changes in banking, but it is still new and not sufficiently widespread in many countries of the world. However, this industry is promising and actively developing, as evidenced by the research conducted by the authors. Z. Kuppenova *et al.* (2020) believe that the use of electronic money by enterprises in settlement transactions requires the development of an effective system of their accounting. Such a system should be based on digital technologies. Significant changes in all areas of social life and the transformation of economy based on information drivers of development determine the importance of updating the information environment of the new economy, which significantly affects accounting. Traditional accounting software has certain disadvantages, among which limited access to data, constant updating of software maintenance and ongoing costs of backing up all financial information can be highlighted. This requires some initial investment, which is treated as a fixed cost. P. Sharma (2018) concluded that an IT team is needed for continuous support, because the main threat is potential physical damage to equipment that can cause data loss. The details of the impact of cloud accounting on various factors in the entire business sphere are discussed in the work of P.M. Modi (2018).

M. Allahverdi (2017) notes that the integration of accounting information systems in cloud systems provides many advantages and opportunities compared to traditional systems. Low costs, easy access and application of high security standards are the main advantages of cloud systems. However, there are also disadvantages: the need for online access, data confidentiality, integration and use in mobile applications, and legal barriers. L. Ou & Z. Zhang (2020). However, the authors note that by analysing the relationship between cloud accounting and traditional accounting, they discovered the advantages of cloud accounting technologies and the potential for their future development and distribution to all enterprises. S. Hosack (2015) describes in his work that from a tax perspective, cloud accounting allows accountants to perform work faster and with lower internal costs, which positively affects customer satisfaction. With e-reporting supported by the government and a number of online services and mobile applications, it serves the purposes of both individual and corporate taxpayers.

Cloud accounting is the future of the accounting profession. The only thing that limits the use of cloud accounting is security. M. Ummulkhairy (2022) determined that if cloud accounting service providers ensure high data security, then the implementation of cloud technologies in accounting will certainly increase in the future. A similar opinion is held by X. Wu (2021), T. Hrebenyk *et al.* (2023), who notes that the information system of cloud accounting combines accounts into an organic whole,

which will be the basis for decision-making and enterprise management. Despite the existence of a large number of studies on electronic money, e-money accounting, cloud accounting systems, the problem of organizing cloud accounting of e-money settlements for Ukrainian commercial enterprises is not enough researched.

## ■ MATERIALS AND METHODS

A combination of general scientific and special methods and techniques of scientific research were used to fulfil the tasks set in the work. The study of the degree of development of the problem of electronic money accounting was carried out using the bibliographic method. The use of causal analysis to establish connections and identify the state of development of electronic money payments in Ukraine made it possible to draw a conclusion about the growth of their popularity. Morphological, comparative and critical analysis was used. The method of systematization made it possible to systematize the proposals of Ukrainian scientists regarding the organization of the system of accounts for accounting for electronic money at enterprises of Ukraine. A logical-comparative method was used to substantiate possible options for accounting for electronic money. System-structural and functional approaches were used in the construction of a scheme of organizational and procedural measures for accounting for electronic money. The diagnostic approach was used to formulate the need to record digital data on the movement of electronic money and to form macro-arrays of information on the calculations made. A comparative method was used to compare the current and forecast order of accounting of enterprise settlement operations using electronic money. A comparative analysis of the functionality of cloud accounting SaaS (Software as a Service) services presented on the IT market of Ukraine made it possible to draw a number of conclusions regarding the choice of the optimal accounting product for accounting of settlement operations in electronic money. Through the system of analysis and synthesis, the work gradually revealed the accounting features of electronic money and their registration in the cloud environment.

The information base for writing the work was specialized scientific research on the problems of modern realities and trends of electronic money settlements, as well as on the construction of accounting and analytical support for the enterprise using local and cloud software products. During the study of the importance of using electronic money and its reliable accounting, the conclusions of T. Adrian & T. Mancini-Griffoli (2019) regarding the ease of use of e-money in payments, its prevalence in different countries, minimal transaction costs when making payments and network effects arising from the use of e-money were considered.

## ■ RESULTS AND DISCUSSION

### **Methodical recommendations regarding the accounting of payments of a commercial enterprise with electronic money**

As of 2023, Ukrainian enterprises make payments in fiat money: with residents of Ukraine in national currency, and with foreign partners in foreign currency. At the same time, there is a gradual formation, state regulation and spread of the use of electronic money. Over the years 2000-2020,

experience has been accumulated in making settlements with fiat electronic money (PayPal, Virtual digital card of Visa, Virtual digital card of MasterCard, Global Money, Maxi, NovaPay, Alfa-Money, Electrum Prostrir) and electronic money of private issue (Skrill, Epayments, Payeer, Facebook Pay, Google Pay, Perfect Money, EasyPay) (Kurhan & Aksyuta, 2021).

According to the NBU (National Bank of Ukraine), in Ukraine during 2020, the number of “electronic wallets” increased by 5 million units (by 7%) – to 79 million, and the volume of transactions with electronic money – by UAH 2,590 million (by 15%), up to UAH 19,304 million (Statistics at the..., n.d.). The use of e-money is becoming more and more transparent, and e-money users are more informed and protected. Digital payment systems identify and verify users in the same way as during the usual opening of a bank account. Law of Ukraine No. 2473-VIII “On Currency and Currency Transactions” (2018), Law of Ukraine No. 2346-III “On Payment Systems and Money Transfer in Ukraine” (2001), as well as Resolution of the Board of the National Bank of Ukraine No. 210. “Regulations on Issuing Electronic Money and Carrying Out Payment Transactions with It” (2022) comprehensively regulate the issue, conversion, storage in digital wallets and settlements with electronic money in Ukraine. As of 2023, the use of e-money issued by Ukrainian banks is allowed (for example, GlobalMoney from JSC Bank “Alliance”, Maxi from PJSC “Taskom-bank”, Alfa-Money from PJSC “Alfa-Bank”, Electrum from JSB “UkrGasbank”) and non-residents (Facebook Pay; Google

Pay; PayRun; Apple Pay), provided that the issuers of these e-money are registered in the Register of Payment Systems of Ukraine. Illegal digital payment systems are prohibited for use by Ukrainian enterprises. In view of the above, the object of accounting is a legally limited number of types of electronic money, including fiat money (issued by banks) and private issuance.

The financial system of the globalized economy is preparing for the innovative introduction of national electronic currencies in the countries of the world. China is testing a digital yuan (e-CNY) from 2020. The EU plans to launch a digital euro in 2026. The US is considering a digital dollar (Stephenson, 2022). In September 2021, the National Bank of Ukraine launched the “e-hryvnia” project with the aim of “wide-scale issuance of the digital form of the hryvnia” (About e-hryvnia..., n.d.). Therefore, the current legislative approach to electronic money, including its accounting, will necessarily be modernized in accordance with the changes that will take place. The scientific search for organizational and program solutions regarding the accounting of e-money is carried out during the transition to national electronic currencies. The methodology of electronic money accounting in compliance with Ukrainian accounting standards was developed by T. Mokienco *et al.* (2019), N. Kurhan (2020), A. Stovpova (2021). The views of these researchers regarding the organization of the accounting system of electronic money can be conventionally divided into two groups, as illustrated in Table 1.

**Table 1.** Systematization of the proposals of Ukrainian scientists regarding the organization of the system of accounts for the accounting of electronic money at the enterprises of Ukraine

Authors and regulatory documents	Names and codes of the accounts proposed by the authors for accounting of the company's payments with e-money			
	accounting of e-money on account 33 “Other funds”		accounting of e-money on account 32 (additional)	
	335 “Electronic money denominated in the national currency”	336 “Electronic money denominated in foreign currency”	32 “Software electronic money”	32 “Electronic money”
Order of the Ministry of Finance of Ukraine No. 291 “Chart of Accounts for Accounting of Assets, Liabilities, Capital and Business Operations of Enterprises and Organizations” (1999)	✓			
N. Kurhan (2020)	✓	✓		
A. Semenets (2017)	✓			
T. Mokienco <i>et al.</i> (2019)	✓			
O. Podolyachuk (2019)	✓	✓		
P. Sakharov (2017)			✓	
A. Stovpova (2021)				✓

**Source:** developed by the authors

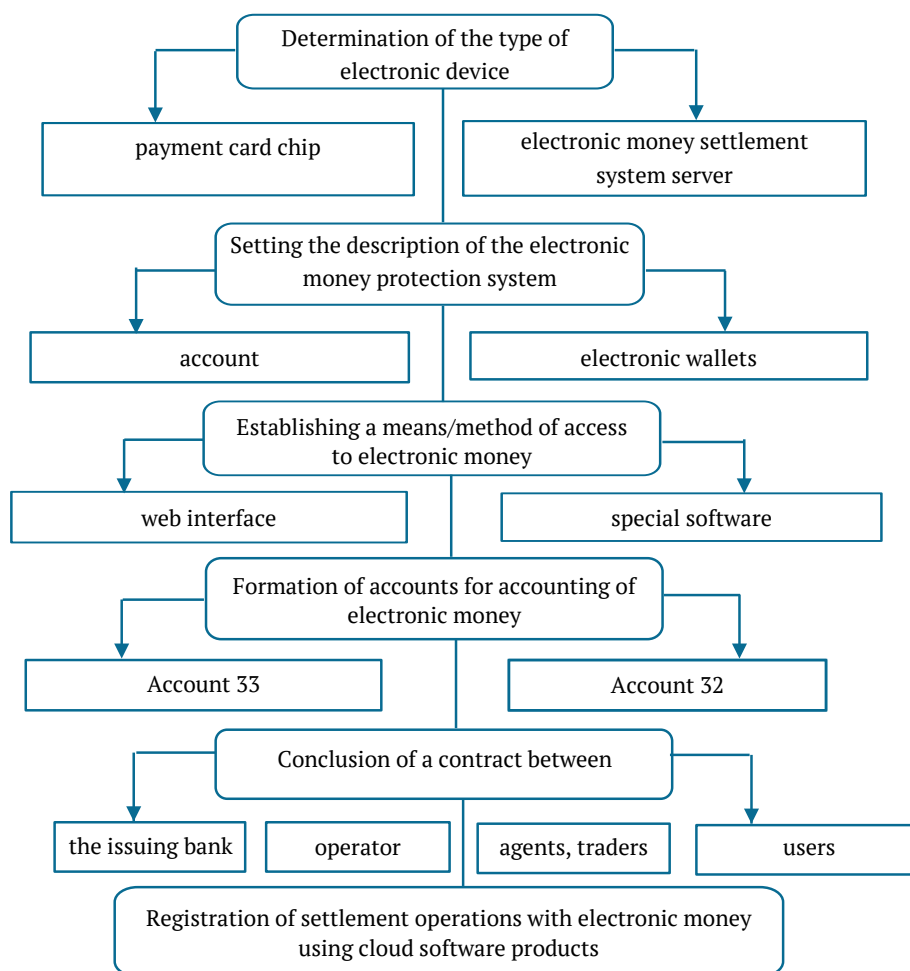
According to the results of the theoretical generalization performed in Table 1, it was concluded that one group of authors (Semenets, 2017; Mokienco *et al.*, 2019; Kurhan, 2020) suggests that Ukrainian enterprises conduct synthetic accounting of electronic money using account 33 “Other funds”. The second group (Sakharov, 2017; Stovpova, 2021) follows an alternative approach and emphasizes the need to separate electronic money on a separate

account 32, which is not used in the Chart of Accounts as of 2023. Regarding the feasibility of using account 32, A. Stovpova (2021) states the following arguments: firstly, electronic money is an independent payment instrument and therefore it does not need to be equated with other monetary funds; secondly, the presence of only one account 335 for recording electronic money makes it impossible to account for exchange rate differences.



Regarding the development of methodological recommendations for the accounting of settlement operations of a commercial enterprise carried out in electronic money, the following is proposed. In view of the fact that electronic money as an innovative type of currency is increasingly acquiring the status of an independent payment instrument, it is considered sufficient to display and register exchange

rate differences in the accounting establish sub-accounts to account 33 or 32. Such detailing will allow for the separation of electronic money in national and foreign currencies, as well as by types and methods of carrying such money. Figure 1 suggests a scheme of organizational and procedural measures for the development of electronic money accounting at a Ukrainian commercial enterprise.



**Figure 1.** Scheme of organizational and procedural measures of electronic money accounting

**Source:** developed by the authors

According to Figure 1, it is possible to give the main recommendations to Ukrainian commercial enterprises regarding the improvement of the organization of e-money accounting with mandatory reflection in the Order on Accounting Policy: determination of the type of electronic device using which settlement operations with e-money are carried out; establishment of the e-money accounting procedure in accordance with the involved stakeholders of settlement transactions; description of the system of protection against unauthorized viewing and the means/method of access to e-money; development of a scheme for the movement of information flows of settlement transactions with e-money, which participate in the exchange and processing of such information; defining the system of accounts and opening sub-accounts for electronic money settlement operations in accordance with the company's accounting policy; formation and collection of

documentation to confirm settlement operations with e-money (service contract, cryptographic protocols, algorithms and keys); selection, description and justification of a cloud-based software product for accounting of settlement operations with e-money. The provided recommendations will contribute to the clear establishment of specific organizational procedures for accounting for e-money, taking into account the specifics of each company's activities, as well as the protection of information from fraudsters and unscrupulous stakeholders.

For the organization of e-money accounting at the enterprise, the proposed improvements to the accounting policy and accounting system are insufficient. Organizational or business decisions of modern companies require digital implementation. In this case, it is about the search for software, the functionality of which will allow implementing methodological recommendations developed by

the authors. Since electronic money is in the current process of rapid development, it is necessary to choose a software product for accounting of settlement operations with electronic money after researching existing trends in the transformation of the world economy under the influence of the latest digital technologies. Further, the article examines the main trends of ongoing changes in the current order of accounting for settlement operations, which are produced by the digitalization of the global financial system.

#### Justification of projected changes in the accounting of settlement transactions under the influence of digitalization of the financial system

The innovative difference of electronic currency is the possibility of recording and saving electronic records of all settlement operations for each electronic monetary unit. Similar functionality has already been tested as transaction records for cryptocurrency transfers using blockchain technology. The recording of digital data on the movement of e-currency opens up the possibility of forming macro-arrays of information on the performed calculations in the analytics of all payment participants. In the future, calculations using national digital currencies will not require the operator to enter primary payment documents into the accounting information databases of enterprises. Registers of completed transactions can be uploaded to the database from the server of the e-money issuer.

The gradual transition from fiat currency to electronic currency will fundamentally change both the technique of conducting settlement transactions of enterprises and the procedure for accounting for such transactions. Simultaneously with the global development of the financial system of electronic currencies, such large-scale transformations are observed in the global economic environment as: the creation, testing and implementation of the use of neural networks, virtualization of business assets, development of intangible forms of capital. There is continuous digitization and the accompanying internationalization of both

economic and social life. Information is becoming an increasingly significant factor in production and sales. Neutron networks (for example, ChatGPT, Galactica Meta, deep learning artificial intelligence of Google, EOSDA, Amazon) imitate the analytical work of the human brain and demonstrate impressive results during testing, instantly processing macro-arrays of data and interacting with users in the mode of normal human communication. According to the authors, in the future, the technological capabilities of neural networks will be used to process digital data related to payments in electronic money.

Against the background of the described changes, the transition to the international XBRL (XBRL – eXtensible Business Reporting Language) format of electronic financial reporting is being carried out in Ukraine, in accordance with Clause 6 of Article 11 Law of Ukraine No. 996-XIV “On Accounting and Financial Reporting in Ukraine” (1999), recommended by the International Financial Reporting Standards Board (IFRS) and generally accepted in the EU and the USA. The content of this form of reporting is the transfer to external users of financial information standardized according to the IFRS taxonomy via the Internet, the possibility of its high-speed machine processing and viewing by a person exclusively in electronic form on an IT device using special software. The reporting of enterprises is modified from graphic not simply to digital, but to interactive, which opens up the possibility of storing and processing digital arrays of virtual financial information about business entities.

Table 2 shows the forecast changes that will take place in the accounting of settlement operations of a commercial enterprise in the event of the transition of the world economic system to electronic money. For now, the further digitization of the technique of carrying out, documenting and accounting for payments is clear. Row 4 of Table 2 explains that the current trend is a gradual transition to processing business data on the Internet using cloud software products.

**Table 2.** Comparison of the current and forecast order of accounting of the enterprise’s settlement operations (in case of introduction of electronic money as an alternative to fiat money)

Stages of accounting for settlement operations	The procedure for accounting settlement operations as of the beginning of 2023	Predictive data processing procedure for settlement operations
1. Documentation and initial accounting of the enterprise’s settlement operations	When using fiat money (in cash and non-cash forms), primary bank and cash documents are drawn up by executors for each separate payment transaction and entered into the company’s information base (manually or by uploading an electronic document – bank statement, receipts, etc.); based on these primary documents, the accounting program automatically forms a transaction.	When using electronic money, information on settlement operations carried out with each monetary unit will be stored as an accompanying digital protocol in a single array of data of the state financial system. The primary accounting of settlement transactions in the company’s information base will take place as a data download from such a macro array.
2. Processing of data related to settlement operations, formation of accounting registers	On the basis of transactions compiled according to primary documents, accounting journals, information and other registers are automatically created in the information base at the user’s request. Turnovers and balances according to accounting registers allow the accounting specialist to determine the necessary financial indicators of the period, as well as to check their correctness.	When using neural networks, there will be no need to compile a set of accounting registers and check their correctness, completeness and comparability. Artificial intelligence will provide unwavering data control over all the company’s settlement operations, performing instant retrospective and predictive calculations at the user’s request.

Table 2. Continued

Stages of accounting for settlement operations	The procedure for accounting settlement operations as of the beginning of 2023	Predictive data processing procedure for settlement operations
3. Display of settlement operations in the company's financial statements	Accountants of enterprises required to report under IFRS manually prepare electronic financial statements in XBRL format using special programs (for example, IPHIX, Arkk XBRL Adapter); it is not possible to transfer data from the information base. Financial reporting of all other commercial enterprises is compiled in an information base with the direct participation of a user specialist, then downloaded in XML (XML – eXtensible Markup Language) format to reporting programs (e.g. “M.E.Doc”, “OPZ”, “iFin”). Reporting is verified by electronic digital signatures and sent to external users via the Internet.	The XBRL format for electronic financial reporting is based on the metadata provided in the IFRS taxonomy. This allows you to quickly identify, structure, compare and analyse the financial data of enterprises through machine processing. If neural networks are used to process and analyse period accounting data, reporting will also be fully automated. The array of financial indicators of an individual enterprise will be subject to software processing for prompt generation of XBRL reports in the necessary analytics.
4. Software and conditions necessary for accounting of settlement operations of the enterprise	Local (on a personal computer) or cloud-based accounting software for maintaining the information base; remote banking software for servicing accounts (“Client-Bank”); special software for preparing and transmitting reports; Internet access (systematic in the case of the accounting base on a local server; uninterrupted in the case of a cloud-based server).	Information flows regarding electronic money payments will be generated online and stored in special cloud storage. Under these conditions, priority will be given to cloud-based software solutions that will allow the use of virtual artificial intelligence to generate arrays of data for an individual company.

**Source:** developed by the authors

The introduction of electronic money, digital reporting and analytical processing of calculation operations and financial indicators by neural networks is accompanied by the expansion of the scale of cloud computing and storage. Under such trends, it is obvious to choose a cloud-based software solution for organizing enterprise accounting, including accounting for settlement operations.

#### **The advantages of cloud services over local programs for automating the accounting of e-money payments**

The expediency of the transition of Ukrainian enterprises from local software solutions to cloud-based ones for maintaining an information base and accounting in it, among other things, for e-money settlement transactions in digital payment systems is explained and proved below. At the time of the study, most companies in Ukraine used individually developed accounting information bases at the companies (NJSC “Naftogaz”, PJSC “Shvydko-Ukraine”, LLC “Procter & Gamble Ukraine”, Fozzy Group networks, LLC “ATB-market”) or standardized licensed software products (for example, “MASTER: Accounting”, “1C: Enterprise. 8.3”, “BAS Accounting”), which were installed on local servers. Since 2018, there has been continuous dynamic growth of the cloud services market in Ukraine, including cloud accounting services (for example, “MASTER: Accounting”, “jSolutions”, “IT-Enterprise: Accounting”, “Oblik Saas”, “BukhSoft”, “BookKeeper”, “1C DataStore”, “Parus”). The potential of cloud-based accounting software products of Ukraine should be investigated in more detail in terms of the organization of automated accounting of payments with electronic money. Summarizing the results of the study in Table 2, it can be seen that as of 2023, it is expedient for Ukrainian enterprises to organize accounting work based on software products with cloud access, abandoning Stand-Alone technology based on local computers.

Cloud software solutions are classified by the degree of user involvement in administration into three groups: PaaS (Platform as a Service), IaaS (Infrastructure as a Service) and SaaS services. A cloud service in the form of PaaS means that the user enterprise receives a platform and sets of ready-made components, on the basis of which it independently creates functional modules (applications), which it later administers and uses. In the case of an IaaS solution, the user rents cloud processors, memory, and networks from the vendor (service provider), on the basis of which he creates router servers and configures the individual topology of the accounting system. SaaS services are used by subscription; in this case, the vendor performs full administration of the service, and the user company receives a ready-made accounting software product that requires minimal individual settings.

In Ukraine, as of 2023, more than 95% of commercial enterprises according to the parameters of Article 2 Law of Ukraine No. 996-XIV “On Accounting and Financial Reporting in Ukraine” (1999) belong to small business (State Statistics Service of Ukraine, n.d.). This explains that the vast majority of cloud accounting products on the Ukrainian IT market are represented by SaaS services. The development of individual cloud PaaS and IaaS accounting and analytical systems requires significant financial and human resources, which can be afforded only by large companies that need comprehensive compliance of the system with the specifics of their organization and management, as well as complete information confidentiality (Iorgachova & Kovalova, 2023). Small and medium-sized businesses choose between various options of ready-made SaaS solutions, the use of which is convenient and economical (Kurhan, 2020). Table 3 compares the functionality of 12 popular SaaS services in order to justify the best of them for use by a Ukrainian enterprise that performs settlement operations in electronic money.

**Table 3.** Comparison of the functional capabilities of cloud accounting SaaS services presented on the IT market of Ukraine as of 2023

Functional characteristics, users of the cloud accounting SaaS service/ name of the SaaS service	Application modules			Sustainable software solution						Reporting		
	iBuh.Online	IT-Enterprise: Accounting	ISpro	MASTER: Accounting	jSolutions	Oblik Saas (standard)	BookKeeper	Dilovod	DebetPlus	M.E.Doc	Webzvit	Taxer
1. General functionality available to users of the SaaS service:												
1.1. financial accounting;	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	P	P
1.2. management accounting;	Y	P	Y	Y	N	P	N	P	N	N	N	N
1.3. tax accounting;	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1.4. electronic administration of VAT (value added tax);	Y	N	N	N	N	N	N	N	N	Y	Y	Y
1.5. sending electronic reports with digital signatures to supervisory bodies;	Y	N	N	N	N	N	N	N	N	Y	Y	Y
1.6. electronic document flow with buyers and suppliers;	Y	Y	Y	P	P	P	N	P	N	Y	Y	Y
1.7. electronic document flow with servicing banks;	P	P	P	P	N	N	N	N	N	N	N	N
1.8. automatic updating of documents and reports, according to legislation.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
2. Functional capabilities of e-money accounting:												
2.1. built-in algorithm for state-regulated e-money accounting;	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N
2.2. editing the Chart of Accounts;	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N
2.3. adding new forms of electronic payment documents;	P	P	P	N	N	N	N	N	N	N	N	N
2.4. data exchange with digital wallets, digital payment systems for e-money settlements.	N	N	N	N	N	N	N	N	N	N	N	N
3. Administration of software applications and service algorithms for their adjustment in accordance with user requests.	N	N	N	N	N	N	N	N	N	N	N	N
4. Groups of users of the SaaS service, according to the classification of Article 2 of the Law on Accounting (Law of Ukraine..., 1999):												
4.1. large enterprises;	-	-	-	-	-	-	-	-	-	-	-	-
4.2. medium enterprises;	✓	✓	✓	✓	✓	✓	-	-	-	✓	-	-
4.3. small enterprises (including micro-enterprises).	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

**Note:** Y – the functionality is fully provided by the SaaS service; N – the functionality is not provided in the SaaS service; P– the functionality is partially, but not completely, provided by the SaaS service

**Source:** developed by the authors

With the help of the comparative analysis performed in Table 3, a number of conclusions can be drawn that will allow choosing the best cloud accounting product for accounting of settlement operations in electronic money. First, the structure of SaaS services is different: more complex software products that provide users with a wider range of opportunities, formed as a set of functional modules (applications) that are activated at the user's request ("IT-Enterprise: Accounting", "ISpro", "iBuh.Online"). Other SaaS services are a single standardized cloud software product that cannot be improved by connecting applications (for example, "MASTER: Accounting", "BookKeeper", "M.E.Doc"). Second, the general functionality of the SaaS service usually subordinated to a clear goal: either compiling and providing electronic reporting to authorized bodies ("M.E.Doc", "Webzvit", "Taxer"), or keeping company accounting records. This practice has developed due to the fact that many companies use local software products and need an electronic application for interaction with state authorities in terms of VAT administration and reporting. Some modular SaaS services (for example, "iBuh.Online") already provide a digital document management service, which is indicated in points 1.4-1.5 of Table 3. Thirdly, accounting SaaS services addressed exclusively to small businesses (for example, "BookKeeper", "Dilovod"), have the most simplified functionality for simple accounting calculations and records.

Points 2.1-2.4 of Table 3 reveal the functionality of the studied SaaS-services regarding the accounting of company payments in electronic money. As you can see, SaaS products focused on reporting ("M.E.Doc", "Webzvit", "Taxer") are absolutely not suitable for this purpose. Cloud accounting and analytical systems (from "iBuh.Online" to "DebitPlus" in Table 3) contain a built-in algorithm for state-regulated e-money accounting, as well as an edited Plan of accounts, which allows the use of accounts 32 and 33 for electronic money accounting. Only modular SaaS products ("IT-Enterprise: Accounting", "ISpro", "iBuh.Online") can add new forms of electronic payment documents and registers at the user's request. However, it is not yet possible to interact with digital wallets and digital payment systems regarding e-money calculations of the user database created in the SaaS resource.

Thus, under the influence of digitalization of the global economy, Ukrainian enterprises are increasing the volume of settlement operations in electronic money. A predictable prospect is the transition to national electronic currencies as an alternative to fiat money. In the transitional conditions of the transformation of the financial system, commercial enterprises are recommended to master the technique of making and accounting for payments with digital money, using cloud accounting software products for this. The study of the functionality of 12 popular SaaS services made it possible to establish that modular SaaS products (such as "iBuh.Online", "IT-Enterprise: Accounting", "ISpro") have the most complete functionality for cloud accounting of a Ukrainian enterprise. Developers of modular SaaS services quickly update existing applications and offer new ones at the request of the market, as well as carry out their individual refinement at the request of the client. The enterprise can implement innovative software solutions

for the accounting of electronic money payments only on the basis of cloud PaaS and IaaS services, but this requires financial investments.

The conclusions obtained by the authors are consistent with the conclusions and proposals of foreign and Ukrainian scientists, and also supplement and continue them. Review of works by A. Semenets (2017), T. Mokienko *et al.* (2019), A. Stovpova (2021) indicates the lack of scientific research and development on the issue of electronic money accounting using cloud software products, which complicates the development and implementation of effective technologies in this area. Group of researchers T. Mokienko *et al.* (2019) singled out the classification features of electronic money and studied the development of electronic money circulation. A. Semenets (2017) carried out the identification of the economic essence of the concept of "electronic money" and formed a classification approach to the accounting display of transactions with electronic money without the use of accounting software systems. A. Stovpova (2021) substantiated the feasibility of accounting for electronic money on a separate account 32 "Electronic money". In the work of O. Podolyachuk (2019), a comprehensive approach to the accounting provision of funds in the relationship of the elements of the accounting method is proposed. The work of A. Klein (2020) emphasizes the integration of the Chinese payment system into global payments. The transformation of accounting activities in the conditions of digitalization of the economy, changes in the accountant's function and the addition of artificial intelligence to accounting operations were studied by scientists Z. Kупenova *et al.* (2020) and L. Ligonenko *et al.* (2022). However, none of the listed works contain proposals for accounting display of e-money using cloud environment programs.

It is explained that the attractor of these inevitable changes is the further distribution of electronic money, the highest point of which will be the introduction of digital national currencies. Similar conclusions were reached in their works by T. Adrian & T. Mancini-Griffoli (2019), D. Duffie (2019), M. Peneder (2022), who studied the chronology of the formation of electronic money and tried to identify further trends. M. Peneder (2022) emphasizes the importance of understanding the transition to digital currencies and changes in payment systems. In his opinion, it is possible to observe the preservation of public sovereignty over the common unit of account by central banks, which in the near future are considering the possibility of issuing their own digital fiat money. D. Duffie (2019) investigated the efficiency of the payment system and the control of monetary policy transmission by central banks. In his work T. Adrian & T. Mancini-Griffoli (2019) continue the general thinking of researchers D. Duffie (2019) and M. Peneder (2022) regarding the emergence of a digital form of money and its transformation into electronic money, which will be measured by an electronic monetary value denominated and tied to such a currency, like euro or dollar. The developed Table 2 not only embodies the collective opinion of the mentioned scientists regarding the inevitability of digitization of the global financial system and its modification due to this, but deepens and continues their research, as it contains a forecast exclusively for the subjects of the Ukrainian economy, taking into account the specifics of national business realities.

The authors' conclusion regarding the prerogative of cloud services over local accounting software is consistent with the opinion of Z. Kuppenova *et al.* (2020), N. Windasari *et al.* (2022), who emphasize the importance of using advanced software solutions to automate the accounting of companies participating in electronic money settlements. Also, in the study, the opinion asserted by Z. Kuppenova *et al.* (2020) was developed that the use of a cloud-based accounting program provides resource savings that are significant enough to represent a relevant criterion when choosing an accounting solution. P.M. Modi (2018), L. Ou & Z. Zhang (2020), I. Paiman (2020) substantiated the advantages of cloud accounting solutions over programs installed on local servers using examples from different countries around the world. L. Ou & Z. Zhang (2020), W. Hongyue *et al.* (2022) investigated the adoption of cloud computing for accounting purposes in China and demonstrated the benefits of cloud computing for small and medium-sized enterprises. I. Paiman (2020) directed his research to review the concept of cloud accounting and its advantages on the example of companies in Kurdistan. I. Paiman (2020) singled out five key reasons for the popularization of cloud accounting services, which are consistent with the opinion of the authors expressed in the work: lower cost of using the program, easy and fast access to the information base located in the cloud, a high level of data security, which the vendor provides a large amount of virtual memory for storing client data and automatic backup, compatibility of cloud services with all operating systems and web browsers. At the same time, the researcher formulated six main risks of using cloud solutions for accounting, which are related to potential technical shortcomings of Internet connections and cybercrime. Similar conclusions to I. Paiman (2020) were reached in his research by P.M. Modi (2018), who, using the example of accounting practices of Indian companies, identified the benefits and challenges of cloud accounting, as well as the capabilities of an individual small firm in terms of accounting and decision-making. In his opinion, the benefits outweigh the challenges of using a cloud-based accounting system. The researches of these scientists confirm the results of the work carried out regarding the advantages of cloud technologies (Table 2): continuous digitalization of economic and social relations; digitization of relations and document flow of market subjects among themselves, with state bodies and financial institutions; artificial intelligence testing for the analysis of information macroarrays; formation of global cloud capacities for data processing and storage.

The difference between the research conducted by the authors of options for cloud automation of accounting is that one of the criteria was the functionality of entering e-money settlement transactions into the accounting base. This criterion was not taken into account by scientists, since only in the last two years the popularization of electronic money took place and business requests for software support for their use and accounting were formed. Instead, J. Singerová (2018) indicates that the reason for choosing cloud accounting is the possibility of fast user access to the database from any software device, as well as the constant updating of the cloud service algorithm by its vendor. The authors share the opinion of J. Singerová (2018)

regarding the fact that cloud accounting software gives its users real-time access to business finances, easy setup and easy use, access to information from anywhere, which is a great advantage. according to S. Hossack (2015), companies choose cloud services due to their cost-effectiveness compared to the purchase of computer equipment and licensed accounting software, which provides lower internal costs for automation of accounting and analytical work. The criteria for choosing an accounting software product identified by these scientists are important, but insufficient. The paper substantiates that when choosing a cloud program, it is necessary to familiarize yourself in advance with its compliance with the realities of the transition to digital banking. The authors agree with the opinion of I. Paiman (2020) that when implementing a cloud solution for accounting automation, it is necessary to detect the presence of uninterrupted Internet connection conditions. It is also advisable to take into account the recommendations of P.M. Modi (2018) and M. Ummulkhairy (2022), who warn about cyber threats of losing confidential business information and call for careful selection of a cloud service provider also based on this criterion.

## ■ CONCLUSIONS

The result of the conducted research was the development of recommendations relevant in the conditions of total digitalization regarding the development of automated accounting of payments in electronic money at the Ukrainian enterprise, as well as regarding the selection of the necessary software product for this. The analysis of the views of Ukrainian scientists on the organization of the electronic money accounting system allowed to draw a conclusion about the need to detail information about electronic money in national and foreign currency, as well as exchange rate differences related to the use of electronic money, in the system of synthetic and analytical accounts. Ukrainian commercial enterprises that use electronic money were asked to implement certain organizational and procedural measures that will allow to improve the organization of electronic money accounting. Among such procedures, the establishment of the accounting procedure taking into account the involved stakeholders of settlement transactions, the development of the scheme of movement of information flows of settlement transactions using e-money, the formation and collection of documentation to confirm settlement transactions, etc. are separated.

When choosing software for accounting for digital payments in electronic money, it is necessary to take into account the existing trends of further digitalization of business. It is explained in the paper that the procedure for accounting for settlement operations, effective at the beginning of 2023, will inevitably be modernized under the influence of the following main factors: the transition to electronic national currencies, which have transaction records for each monetary unit; application of technological capabilities of neural networks and artificial intelligence for the analysis of macro-arrays of data on the circulation of e-money; implementation of electronic financial reporting of enterprises by taxonomy. Objective changes in the accounting of settlement operations at all stages of its implementation – documentation, data processing in registers, reporting – are substantiated. It was revealed that the

further rejection of local media in favour of cloud storage will be a distinctive feature of the forecast changes.

The use of electronic money in settlement operations causes the need to expand the scale of cloud computing and storage. The conducted research showed that it is expedient for enterprises to organize accounting work on the basis of software products with cloud access. This article presented an overview of various groups of cloud software solutions. At the same time, special attention was paid to the functional capabilities of cloud accounting SaaS services available on the Ukrainian market. This made it possible to draw conclusions that help choose the best cloud accounting product for accounting settlement operations using e-money. Enterprises are recommended to use modular SaaS products that can be customized,

scaled, and systematically updated. The novelty lies in the development of methodological approaches to the construction of an accounting system for settlement transactions using electronic money based on cloud software. The conducted research opens up prospects for further research in this subject area, aimed at establishing cause-and-effect relationships between indicators of the efficiency of calculations using e-money and digital accounting technologies.

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#### ■ CONFLICT OF INTEREST

None.

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### **Наталя Володимирівна Курган**

Кандидат економічних наук, доцент  
Харківський національний економічний університет імені Семена Кузнеця  
61166, просп. Науки, 9А, м. Харків, Україна  
<https://orcid.org/0000-0003-1155-6859>

### **Ольга Вікторівна Фартушняк**

Кандидат економічних наук, доцент  
Харківський національний економічний університет імені Семена Кузнеця  
61166, просп. Науки, 9А, м. Харків, Україна  
<https://orcid.org/0000-0002-6305-5901>

### **Лідія Василівна Безкорвайна**

Кандидат економічних наук, доцент  
Харківський національний економічний університет імені Семена Кузнеця  
61166, просп. Науки, 9А, м. Харків, Україна  
<https://orcid.org/0000-0002-0423-0626>

## **Удосконалення організації та автоматизації обліку розрахунків комерційних підприємств е-грошима в умовах цифровізації економіки**

■ **Анотація.** В умовах цифровізації глобалізованої світової економіки українські підприємства мають інформаційний запит на методичні рекомендації щодо техніки проведення та комп'ютеризованого обліку платежів електронними грошима, які є інноваційною формою розрахункових операцій. Метою дослідження було формування актуальних методичних рекомендацій щодо організації на підприємстві автоматизованого обліку розрахунків у електронних грошах, а також обґрунтування вибору необхідного для цього програмного продукту. Для досягнення мети було використано метод морфологічного аналізу, порівняльний та критичний аналіз, системно-структурний підхід, бібліографічний метод. Українським підприємствам запропоновано впроваджувати облікову роботу з електронними грошима у два послідовні кроки. Обґрунтовано трансформації, які відбуватимуться в обліковій роботі за розрахунковими операціями підприємства, в разі впровадження національних цифрових валют. Пояснено технологічні можливості використання нейромереж для обробки масивів даних щодо проведених у платіжних системах розрахунків електронними грошима. Доведено, що за прогнозованих тенденцій українським підприємствам доцільно переходити від локальних бухгалтерських програмних продуктів до використання хмарних сервісів. Проаналізовано функціональні можливості 12 популярних в Україні хмарних програмних рішень для автоматизації обліково-аналітичної роботи, з позиції можливості ведення комп'ютеризованого обліку розрахункових операцій у електронних грошах. Пояснено переваги і недоліки окремих SaaS-сервісів та рекомендовано доцільні до використання. Надано рекомендації відкоригувати Наказ про облікову політику, дотримуючись розробленої в роботі схеми організаційних та процедурних заходів. Запропоновано оцінити відповідність наявного бухгалтерського програмного продукту інформаційним запитам управління, які виникають при використанні електронних грошей для проведення платежів. Рекомендації розроблено на підставі детального вивчення перспектив подальшої популяризації електронних грошей. Дослідження має практичний інтерес для підприємств України, які залучають до свого бізнесу інноваційні рішення проведення платежів в умовах швидкісної цифровізації економіки

■ **Ключові слова:** електронний гаманець; платіжна система; транзакція; електронна фінансова звітність; таксономія; хмарні бухгалтерські сервіси

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## Olena Stryzhak\*

PhD in Economics, Associate Professor  
Simon Kuznets Kharkiv National University of Economics  
61166, 9A Nauka Ave., Kharkiv, Ukraine  
<https://orcid.org/0000-0002-9367-9061>

## Nataliia Pohuda

PhD in Economics, Associate Professor  
Simon Kuznets Kharkiv National University of Economics  
61166, 9A Nauka Ave., Kharkiv, Ukraine  
<https://orcid.org/0000-0002-8926-9350>

## Restaurant brand management in wartime

■ **Abstract.** Full-scale military operations taking place since 2022 in Ukraine have had a negative impact on all sectors of the economy, including the restaurant business. An important factor that helps Ukrainian restaurants to work and develop is the brand. Therefore, the issues of restaurant brand management taking into account wartime conditions are gaining relevance. The purpose of the research is to determine the characteristic features of branding of restaurant business entities in the context of military operations. The article used such scientific methods as: bibliographic analysis, analysis and synthesis, grouping and comparison. Data from the State Statistics Service of Ukraine were used to analyse the food and beverage sector. The data cover the period from late 2014 to early 2023. The Ukrainian food and beverage sector has been analysed (including an assessment of changes in business situation, analysis of the level of employment and fluctuations in demand in this sector) to determine the peculiarities of functioning and prospects for the development of restaurant business. The problems faced by Ukrainian restaurant enterprises during 2022-2023 are outlined. It is substantiated that management of the restaurant brand is important to ensure its operation in the conditions of military operations and further for post-war recovery. The features and functions of the restaurant brand are determined, and the factors affecting the restaurant brand in crisis conditions are systematized. The implementation of foreign experience in promoting the restaurant brand, including the promotion of services in social networks and other online channels, has been proposed. The results of the research are of practical importance for Ukrainian restaurants as they can use them to adjust their overall strategy of development and their brand promotion measures

■ **Keywords:** catering establishments; food sector; crisis conditions; label functions; factors influencing the image of the company

## ■ INTRODUCTION

Due to the military operations on the territory of Ukraine, most industries faced a significant decline in consumer demand, an increase in operating costs, high risks, etc. The restaurant business appeared to be one of those areas that most of all felt the negative impact of war. However, despite

the difficult situation, the restaurant business is gradually recovering in Ukraine. This process is uneven, taking into account territorial characteristics (in the west of Ukraine and in Kyiv), and the type of activities: coffee shops, bakeries, restaurants of the luxury segment have recovered

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\*Corresponding author



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the fastest. Some establishments have reoriented their work to prepare meals for the Armed Forces of Ukraine, territorial defence and internally displaced persons. According to V. Danylenko-Kulchytska (2022), the Ukrainian restaurant business, having not had time to recover from the crisis caused by the COVID-19 pandemic, faced even more serious problems as a result of the Russian invasion. At the same time, the war crisis practically did not affect the western regions of Ukraine, which, however, felt the rise in prices, and there are also difficulties with logistics. It should be noted that a significant part of the restaurant business to one or another degree supports the Ukrainian army. One of the means to solve the issues of restoring the restaurant business is by implementing the experience of those countries that also suffered from military operations. I. Banyeva & O. Velychko (2022) also pay attention to the uneven recovery of the restaurant business in Ukraine and focus on the need to reorient it to provide budget services in the context of post-war recovery.

The restaurant industry was significantly negatively affected by the quarantine caused by COVID-19. As a result, there was a reduction in the number of restaurants. H. Haponenko *et al.* (2021) note that the Ukrainian restaurant business quickly adapted to changing conditions by introducing delivery services, offering new menu items such as non-alcoholic wine, vegan food, craft meals and drinks, seasonal product menus, mono-product orientation, introduction of dark kitchen format, etc. The global pandemic has shifted the focus of research to the specifics of restaurant operations in crisis conditions. For example, B. Li *et al.* (2021) noticed that Chinese restaurants used different innovation strategies during and after COVID-19. A. Madeira *et al.* (2021) point out that COVID-19 has caused many problems in restaurant business, such as the lack of appropriate government measures to regulate this area and the developed strategies of what to do, and difficulties in forming working capital during the pandemic.

During the war, the hotel and restaurant business faces much more threats than development opportunities. M. Kulyk *et al.* (2022) noted that at the same time, in the restaurant business, Ukrainians are attracted by flash mobs and ideas aimed at supporting the Armed Forces of Ukraine, and B. Polotaj & B. Gmur-Klumenko (2022) also noted the growth of social responsibility of the Ukrainian restaurant business. K. Protsak & M. Peredrii (2022) emphasize the idea that, in a sense, the crisis is an impetus that opens up new opportunities for development. V.H. Hranovska *et al.* (2021) stress the importance of implementing innovative approaches in the hotel and restaurant sector. The Ukrainian restaurant business is characterized by such modern trends as food delivery and takeaway, digitalization and automation, menu reduction, creation of mono-menus, etc.

One of the tools to ensure restaurant activities in crisis conditions is a brand management strategy. A restaurant brand is a set of associations and perceptions associated with it among customers and the general public. It can be created due to various factors such as product and service quality, interior design, advertising and many others. A restaurant brand is a combination of elements such as: name, logo, slogan, colours, atmosphere, style of service and other elements that define the unique identity and style of the restaurant. The problem of promoting one's own brand is

an urgent task for establishments in the restaurant business. These questions were raised in the scientific works of the world's leading scientists. In their study, A.O. Dandis *et al.* (2022) concluded that brand experience, the impact of word-of-mouth advertising have a significant positive effect on the willingness of fast-food restaurant visitors to pay more, and also increase repeat purchase intentions. C.G. Oñate *et al.* (2019), N. Niemczyk *et al.* (2021) found that cultural emotions give the best results when determining the effectiveness of an advertising campaign. According to the observations of N. Jin *et al.* (2016) restaurant customer satisfaction and loyalty largely depend on brand prestige, and C. Wei *et al.* (2022) concluded that brand trust has a positive effect on customers' willingness to visit a restaurant.

While there is plenty of research on restaurant branding, most of it is focused on working in a stable economy. However, there are very few recommendations regarding the organization of the restaurant industry during the war, which confirms the relevance and timeliness of this research. In this context, the purpose of the article is to determine the peculiarities of restaurant brand management in the conditions of military operations.

## ■ MATERIALS AND METHODS

In order to achieve the defined goal and solve the tasks in the research process, the authors used a differentiated theoretical-methodical and practical-analytical scientific toolkit, based on the use of the following scientific methods. Bibliographic and comparative analyses were used to analyse research in the problem area by Ukrainian and other scientists. General scientific methods of analysis and synthesis, induction and deduction, comparison and generalization were used to define and formulate the functions of the restaurant brand, to substantiate the peculiarities of the factors that influence the Ukrainian restaurant business in the conditions of military operations. Based on a comparative analysis of literary sources of different researchers, common features of restaurant brand functions and factors influencing the restaurant business were identified, then these selected features were summarized and synthesized and presented in figures for more convenient visual representation using visualization methods. The statistical method of scientific research was used in collecting analytical information on analysing trends in the development of restaurant business enterprises and assessing economic sentiment by enterprises in various industries. Grouping and matching methods were used to build analytical tables based on data obtained from open sources. Dynamic changes in the business situation, the number of employees and demand for services of food and beverage service enterprises were analysed by the method of analytical assessment. The graphic method is aimed at visual representation of trends in economic sentiment by sectors of the economy, as well as the dynamics of the influence of factors restraining activities in food and beverage services. The systems method made it possible to combine the research with a single approach and, based on the obtained results, formulate proposals and recommendations for the restaurant business establishments in the conditions of war. The generalization method was used in formulating the research results. With the help of inductive and deductive methods, the conclusions of the

research were summarized and proposals for further scientific research were developed.

The research uses the following data: 1) State Statistics Service of Ukraine (2023), namely: Indicator of economic sentiment, calculated in accordance with the Methodology for calculating business expectations indicators (2021); Indicator of employee employment expectations, calculated in accordance with the Methodology for calculating business expectations indicators, Expected changes in demand for services (volume of sales of services) of enterprises in the service sector in the next three months, Assessment

of changes in the business situation in the service sector for the previous three months; 2) Internet portals HoReCa (Where restaurateurs live well..., 2023) and Statista (Restaurant delivery – Worldwide, 2023).

## ■ RESULTS AND DISCUSSION

A brand is a unique identifier that allows a restaurant to differentiate itself from competitors and create a recognizable image in the eyes of consumers, so it has a distinctive ability. The importance of brand for the restaurant lies in the following (Fig. 1).

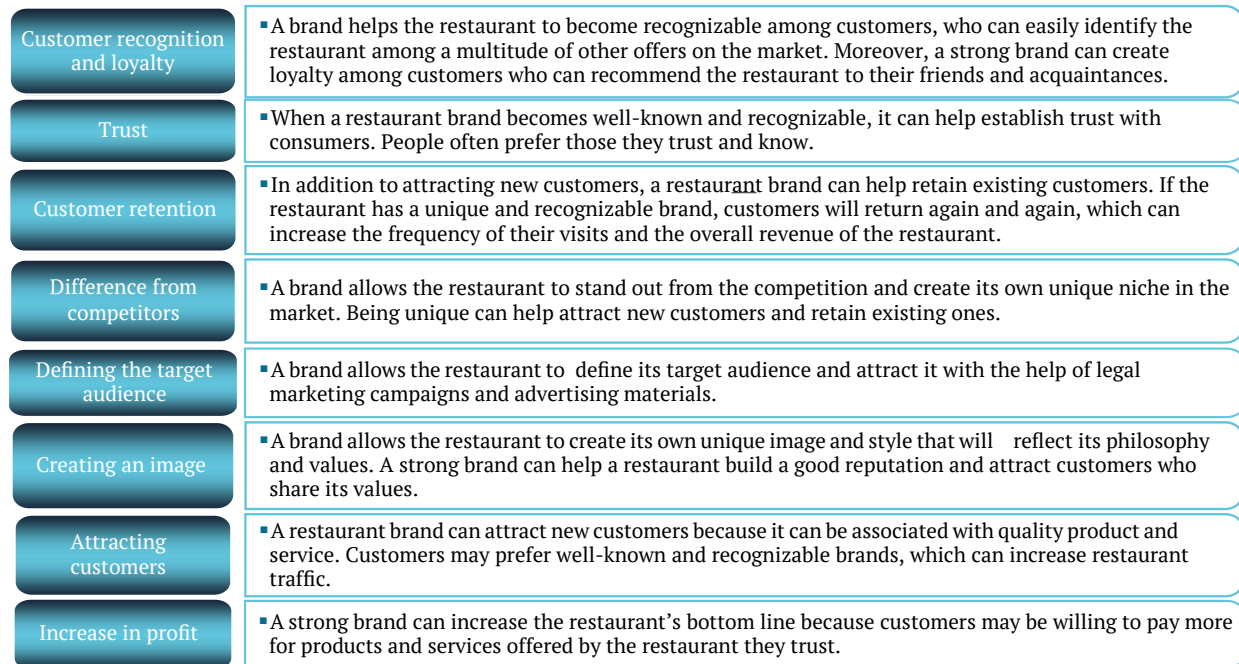


Figure 1. Restaurant brand functions

Source: developed by the authors

A restaurant brand plays an important role in restaurant activities, helping to attract customers, distinguish itself from competitors and create its unique image. The market in which Ukrainian restaurant enterprises operate belongs to the sector of food and beverage provision activities according to the State Statistics

Service of Ukraine (2023). It seems appropriate to analyse in more detail the trends in the development of this sector. The results of the assessment of changes in business situation in food and beverage service provision on a quarterly basis for 2014-2022 are presented in Table 1.

Table 1. Assessment of business situation in food and beverage service activities

period	data reports of enterprises	improved	remained unchanged	deteriorated	no response	balance
<b>2014</b>						
October–December		3	41	56	0	-53
<b>2015</b>						
January–March		10	30	60	0	-50
April–June		13	40	46	1	-33
July–September		7	56	37	0	-30
October–December		11	63	25	1	-14
<b>2016</b>						
January–March		5	61	33	1	-28
April–June		17	49	34	0	-17
July–September		6	54	40	0	-34
October–December		21	47	32	0	-11

Table 1. Continued

period \ data reports of enterprises	improved	remained unchanged	deteriorated	no response	balance
<b>2017</b>					
January–March	18	63	18	1	<b>0</b>
April–June	15	66	18	1	<b>-3</b>
July–September	21	53	26	0	<b>-5</b>
October–December	20	63	17	0	<b>3</b>
<b>2018</b>					
January–March	0	78	20	2	<b>-20</b>
April–June	8	69	23	0	<b>-15</b>
July–September	10	72	18	0	<b>-8</b>
October–December	22	63	15	0	<b>7</b>
<b>2019</b>					
January–March	18	58	23	1	<b>-5</b>
April–June	5	66	29	0	<b>-24</b>
July–September	13	66	21	0	<b>-8</b>
October–December	19	69	12	0	<b>7</b>
<b>2020</b>					
January–March	2	26	72	0	<b>-70</b>
April–June	5	15	80	0	<b>-75</b>
July–September	33	22	45	0	<b>-12</b>
October–December	22	27	51	0	<b>-29</b>
<b>2021</b>					
January–March	18	30	52	0	<b>-34</b>
April–June	19	49	32	0	<b>-13</b>
July–September	25	45	30	0	<b>-5</b>
October–December	17	59	24	0	<b>-7</b>
<b>2022</b>					
January–March	6	11	83	0	<b>-77</b>
April–June	6	23	71	0	<b>-65</b>
July–September	11	33	56	0	<b>-45</b>
October–December	27	33	40	0	<b>-13</b>

**Source:** compiled by the authors based on the data from the State Statistics Service of Ukraine (2023)

According to the results of data comparison presented in Table 1, it can be stated that the assessment of changes in business situation in the provision of food and beverages in Ukraine has been generally negative in recent years. The hostilities of 2022–2023 have even worsened the economic

expectations of business entities. To some extent, the level of employment reflects the state of affairs in the industry. The results of the assessment of changes in the number of employees at food and beverage service enterprises on a quarterly basis for 2014–2022 are presented in Table 2.

**Table 2.** Assessment of employment at food and beverage service enterprises

period \ data reports of enterprises	improved	remained unchanged	deteriorated	no response	balance
<b>2014</b>					
October–December	3	63	34	0	<b>-31</b>
<b>2015</b>					
January–March	7	63	30	0	<b>-23</b>
April–June	0	60	40	0	<b>-40</b>
July–September	7	53	40	0	<b>-33</b>
October–December	8	74	17	1	<b>-9</b>
<b>2016</b>					
January–March	3	80	17	0	<b>-14</b>
April–June	3	74	23	0	<b>-20</b>
July–September	9	62	29	0	<b>-20</b>

Table 2. Continued

period \ data reports of enterprises	improved	remained unchanged	deteriorated	no response	balance
<b>2016</b>					
<i>October–December</i>	13	63	24	0	-11
<b>2017</b>					
<i>January–March</i>	15	66	18	1	-3
<i>April–June</i>	18	66	15	1	3
<i>July–September</i>	18	50	31	1	-13
<i>October–December</i>	20	68	12	0	8
<b>2018</b>					
<i>January–March</i>	13	75	10	2	3
<i>April–June</i>	15	62	23	0	-8
<i>July–September</i>	28	57	15	0	13
<i>October–December</i>	34	51	14	1	20
<b>2019</b>					
<i>January–March</i>	21	58	21	0	0
<i>April–June</i>	16	34	50	0	-34
<i>July–September</i>	34	45	21	0	13
<i>October–December</i>	26	60	14	0	12
<b>2020</b>					
<i>January–March</i>	13	62	25	0	-12
<i>April–June</i>	8	26	66	0	-58
<i>July–September</i>	25	35	40	0	-15
<i>October–December</i>	10	56	34	0	-24
<b>2021</b>					
<i>January–March</i>	13	55	32	0	-19
<i>April–June</i>	7	51	42	0	-35
<i>July–September</i>	23	47	30	0	-7
<i>October–December</i>	19	55	26	0	-7
<b>2022</b>					
<i>January–March</i>	6	44	50	0	-44
<i>April–June</i>	6	24	70	0	-64
<i>July–September</i>	5	17	78	0	-73
<i>October–December</i>	13	40	47	0	-34

**Source:** compiled by the authors based on the data from the Statistics Service of Ukraine (2023)

As can be seen from Table 2, the level of employment in the provision of food and beverages also has a negative trend, which has even intensified as a result of war. Due to significant migration, the Ukrainian restaurant industry will experience a shortage of qualified personnel in

the coming years, which may negatively affect the pace of its development. Expected changes in demand for services (volumes of sales of services) of food and beverage service enterprises on a quarterly basis for 2014-2023 are presented in Table 3.

**Table 3.** Expected changes in demand for services (of turnover) at food and beverage service enterprises

period \ data reports of enterprises	improved	remained unchanged	deteriorated	no response	balance
<b>2015</b>					
<i>January–March</i>	6	44	50	0	-44
<i>April–June</i>	17	43	40	0	-23
<i>July–September</i>	7	43	50	0	-43
<i>October–December</i>	26	47	23	4	3
<b>2016</b>					
<i>January–March</i>	11	43	45	1	-34
<i>April–June</i>	22	61	16	1	6
<i>July–September</i>	17	43	40	0	-23

Table 3. Continued

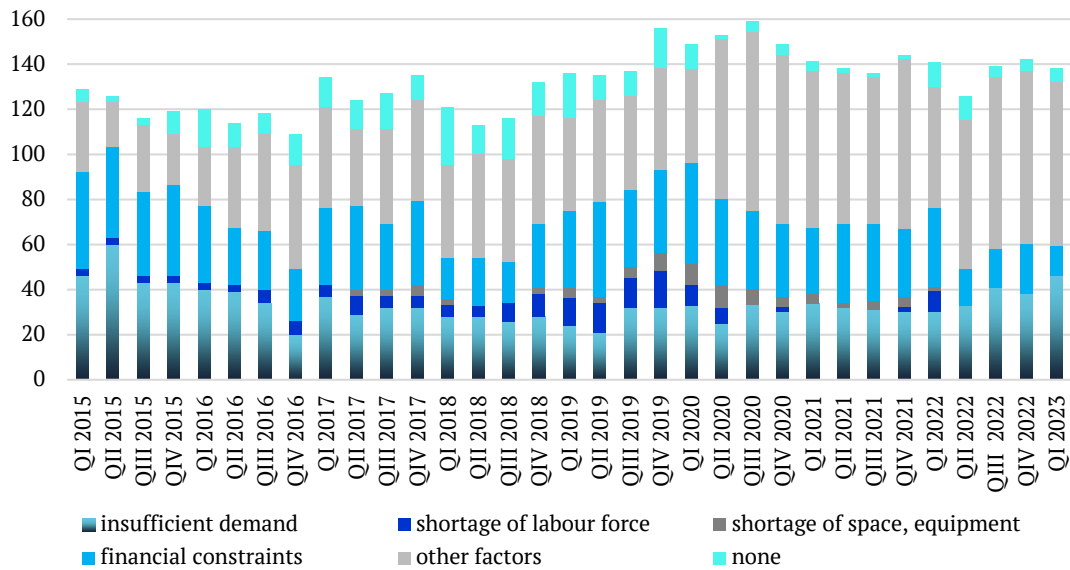
data reports of enterprises period	improved	remained unchanged	deteriorated	no response	balance
<b>2016</b>					
<i>October–December</i>	23	54	23	0	<b>0</b>
<b>2017</b>					
<i>January–March</i>	11	57	32	0	<b>-21</b>
<i>April–June</i>	29	45	26	0	<b>3</b>
<i>July–September</i>	21	58	21	0	<b>0</b>
<i>October–December</i>	24	52	24	0	<b>0</b>
<b>2018</b>					
<i>January–March</i>	15	52	33	0	<b>-18</b>
<i>April–June</i>	10	65	23	2	<b>-13</b>
<i>July–September</i>	12	58	30	0	<b>-18</b>
<i>October–December</i>	23	57	20	0	<b>3</b>
<b>2019</b>					
<i>January–March</i>	29	46	24	1	<b>5</b>
<i>April–June</i>	23	37	39	1	<b>-16</b>
<i>July–September</i>	23	37	39	1	<b>-16</b>
<i>October–December</i>	44	37	18	1	<b>26</b>
<b>2020</b>					
<i>January–March</i>	12	50	38	0	<b>-26</b>
<i>April–June</i>	8	18	74	0	<b>-66</b>
<i>July–September</i>	18	38	44	0	<b>-26</b>
<i>October–December</i>	18	45	37	0	<b>-19</b>
<b>2021</b>					
<i>January–March</i>	15	41	44	0	<b>-29</b>
<i>April–June</i>	15	30	55	0	<b>-40</b>
<i>July–September</i>	17	46	37	0	<b>-20</b>
<i>October–December</i>	20	45	35	0	<b>-15</b>
<b>2022</b>					
<i>January–March</i>	24	45	31	0	<b>-7</b>
<i>April–June</i>	6	39	55	0	<b>-49</b>
<i>July–September</i>	24	35	41	0	<b>-17</b>
<i>October–December</i>	17	39	44	0	<b>-27</b>
<b>2023</b>					
<i>January–March</i>	13	47	40	0	<b>-27</b>

**Source:** compiled by the authors based on the data from State Statistics Service of Ukraine (2023)

According to Table 3, it can be concluded that the largest drop in consumer demand in this area occurred during the pandemic caused by COVID-19, i.e., the worst expectations were for demand in 2020. In 2023, despite the general negative expectations, they are better than during the quarantine period. The dynamics of the influence of factors that restrain activities in food and beverage service provision, according to estimates formed on the basis of the data of proactively submitted reports of enterprises, is presented in Figure 2.

As can be seen from Figure 2, insufficient demand plays a significant restrictive role in restraining business activities in the food and beverage services sector, but a group of factors identified as “other factors” has been a key containment factor in recent years. At the same time, such factors as “shortage of labour force”, “shortage of space, equipment”, “financial constraints” do not play a decisive role in the implementation of this type of activity. Since the beginning of

2023, the restaurant business in Ukraine, especially in the territories located in close proximity to the places of hostilities, has been facing the following problems. A significant decrease in consumer demand, problems with logistics and a corresponding increase in delivery prices, as well as problems with the delivery itself, as roads may be blocked or destroyed; restriction of the work of restaurants in order to ensure the safety of the population; high risk of destruction or damage to buildings and equipment as a result of hostilities; economic volatility, including exchange rate fluctuations, rising prices for fuel, products and services. The number of visitors has decreased, there has been a decrease in the size of the average receipt due to a decrease in the income of population. A decrease in the number of corporate events due to the inability or unwillingness to celebrate events in restaurants; lack and difficulties in hiring qualified personnel, as many specialists leave the regions in search of safer and more stable conditions, reduction in the number of tourists, etc.



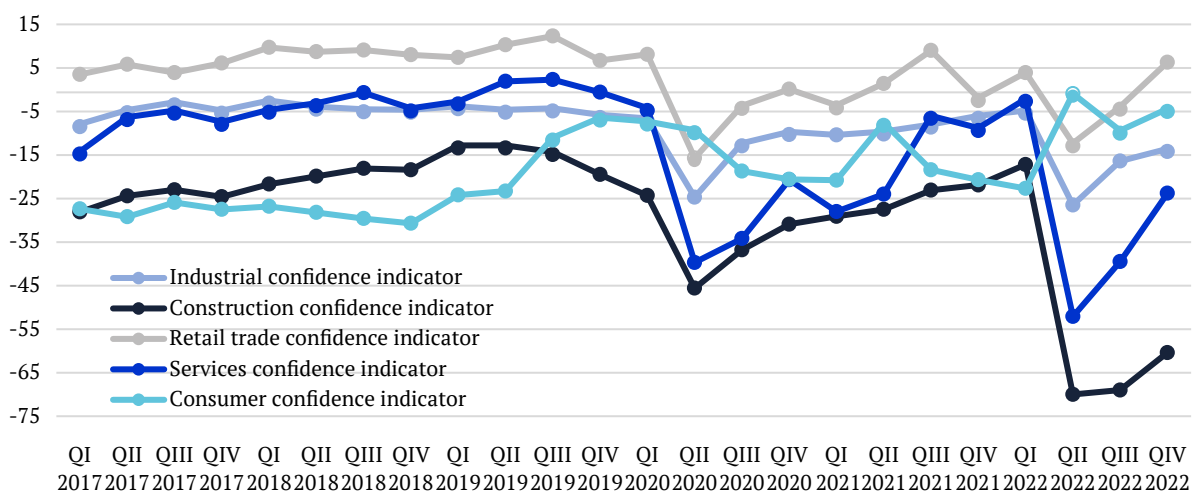
**Figure 2.** Factors limiting food and beverage service activities

**Note:** QI – 1 quarter; QII – 2 quarter; QIII – 3 quarter; QIV – 4 quarter

**Source:** built by the authors based on the data from the State Statistics Service of Ukraine (2023)

According to the HoReCa online portal (Where restaurateurs live well..., 2023), over the past year, attendance at restaurant establishments has decreased significantly in the frontline regions, as well as in Kyiv and the region amid an increase in attendance in almost all regions of Western and Central Ukraine. This is due to migration processes in the country caused by military operations, and it also shows that the demand for restaurant services does not disappear even in crisis conditions. Despite the complication of operating conditions, the Ukrainian restaurants are gradually resuming their work, adapting

to the crisis caused by hostilities on the part of the Russian Federation. The ways of restaurant promotion are changing, new dishes appear on the menu, adapted to local products and increased prices, the concept of order delivery and pricing policy is being revised, safe zones for visitors are being arranged, etc. – these and other measures allow the Ukrainian restaurant business to ensure its functioning in times of crisis conditions caused by the war. Prospects for the development of restaurant business are influenced in a certain way by the economic sentiment that prevails in society (Fig. 3).



**Figure 3.** Economic sentiment indicator, %

**Note:** QI – 1 quarter; QII – 2 quarter; QIII – 3 quarter; QIV – 4 quarter

**Source:** made by the authors based on research by State Statistics Service of Ukraine (2023)

As can be seen from Figure 3, industrial confidence, retail confidence and consumer confidence of business entities have not undergone significant changes over the past year. The hostilities had the greatest impact on economic

expectations in construction and service sector, where, as can be seen from the graph, there was a significant drop in indicators. However, after a sharp drop in early 2022, economic sentiment is gradually returning to pre-war levels.

This indicates significant adaptive capabilities of the Ukrainian economy. But it should be noted that the promotion of

restaurant services during the war has its own peculiarities and requires consideration of a number of factors (Fig. 4).



**Figure 4.** Peculiarities of impact on restaurant brand during military operations

**Source:** developed by the authors

Despite all the difficulties caused by the war and related factors, according to preliminary forecasts, the Ukrainian restaurant business has positive prospects. According to the Internet portal Statista (Restaurant delivery – Worldwide, 2023), in Ukraine, revenue in the restaurant delivery segment will reach 7.10 million USD at the end of 2023, and in subsequent years will grow at an annual rate of 8.21% until 2027 (with a global growth rate of 6.28% per annum). The restaurant business should expect a post-war recovery associated with the reconstruction of the country, a corresponding increase in income and the presence of deferred demand for restaurant services and products.

The problems of managing the restaurant brand and other public catering establishments were considered in the works of many scientists on examples of different

situations and countries (Biliavska *et al.*, 2023). Taking the pandemic caused by COVID-19 as an example, N. Messabia *et al.* (2022) prove that the crisis can exert both negative and positive pressure on the activities of restaurants. During the crisis, entrepreneurs explore new markets and acquire new skills, such as flexibility, innovation, and adaptability. M. Nowacki & M. Nurkowska (2022) emphasize the idea that joint marketing strategies, price reductions, and the introduction of new services are the measures important for the restaurant to survive in crisis. J.Y.-H. Lo (2018) discovered that brand awareness has a positive effect on customer satisfaction of Cantonese restaurants in cities in Fujian Province, China, and further encourages repeat purchases. J. Xu *et al.* (2022) found that ideal authenticity has a significant effect on the brand image of time-tested

restaurants in Beijing, while authenticity has both direct and indirect effects on brand loyalty. And this influence varies depending on the age of visitors. The study by E. Sezgin & M.O. Göde (2017) shows that both behavioural intentions and brand loyalty among fast food restaurant customers largely depend on service quality. H. Song *et al.* (2022) found that brand recognition affects brand trust and, accordingly, customer intentions of branded coffee shops and family restaurants. T.-J. Wu *et al.* (2015) point out that not only delicious dishes that represent Taiwan's national cuisine, but also the brand of catering establishments are essential to ensure the success and promotion of establishments to the markets of China and Southeast Asia. R. Odoom *et al.* (2017) emphasize the idea that social benefit, research, and entertainment are important for restaurant brand loyalty.

The Internet plays an important role in the recognition of restaurant brand and its promotion in modern conditions. Restaurateurs are increasingly using social media to advertise restaurant services. A positive consumer response to social media advertising ultimately helps attract customers, increase sales, and boost restaurant profitability. M.S. Alnsour *et al.* (2021) emphasize the importance of advertising on Facebook. Using the example of the restaurant sector in Jordan, scientists emphasize the importance of social networks in communication between establishments and customers. Based on the comparative analysis of consumer behaviour of restaurant visitors from the USA and Korea, J.-H. Kwon *et al.* (2020) found that social media content, such as Facebook and Instagram, and advertising have a significant positive effect on consumer engagement and brand trust. Moreover, according to the analysis, the attitude of consumers towards the brand of restaurants in Korea and the USA does not differ. S. Fissi *et al.* (2022) found a connection between brand communication on social media and the dynamics of engagement on Instagram of Italian restaurants awarded 2-3 Michelin stars. According to the authors of the article, to overcome the effects of the pandemic caused by COVID-19, restaurants have changed their brand communication strategies towards increased activity on social networks.

Modern ways of promotion on the Internet have a significant impact on the formation of demand for restaurant services. According to the results of the study by J. Baek & Y. Choe (2020), customers most often make decisions about visiting a restaurant based on the online reviews. Restaurant attendance is influenced by their online ratings. T. Dirsehan & E. Cankat (2021) noticed that restaurant customers' use of mobile applications to order food from a restaurant saves time and effort, which ultimately increases their satisfaction and brand loyalty. J. Raudeliuniene *et al.* (2018) and L. Bovsh *et al.* (2020) suggest that as the popularity of social networks grows, more and more restaurants resort to using them as a means of advertising and as a channel of communication with customers. Besides, the activity of the restaurant in social networks has a positive effect on its value, as evidenced by S. Kim *et al.* (2015).

In the time of war, restaurant brand management becomes even more important, as wartime is associated with economic hardship, danger, high risk, and uncertainty. In such a situation, a strong brand can help a restaurant survive in the market and attract customers who are looking for a reliable place to eat and relax (Postova, 2021). At the same time, it is necessary to take into account the fact that

the influence of brand manifests itself differently across countries and regions, as discussed in the work of O. Stryzhak *et al.* (2021). It is also important to note that a restaurant brand may be associated with a particular culture or national cuisine that may be popular with diners during times of war. For example, a restaurant specializing in local cuisine can use its brand to attract customers who are looking for popular local dishes in a limited food base. If a restaurant has already had a recognizable brand and a good reputation before the war, consumers may be more inclined to choose it, even if it is located in a conflict zone. Additionally, customers may express brand loyalty based on association with national identity in the context of supporting a national manufacturer.

The war has had a significant negative impact on the restaurant industry of Ukraine, but restaurant activity throughout the country is gradually recovering taking into account an increase in volumes compared to pre-war periods in the west of the country to some revival in the south-eastern part. Restaurants and other catering establishments have demonstrated their viability and high adaptability, through brand management, as well.

## ■ CONCLUSIONS

In today's increasingly competitive markets, brand management is important for all industries. But the use of brands is especially noticeable in those areas where the business result largely depends on trust in service providers. One of these industries is public catering. Restaurants occupy a significant segment in this sector of the economy, for them brand management is extremely important, because it is brand loyalty that encourages consumers to visit restaurants, and brand commitment that makes them regular customers. In crisis conditions, in particular during the war, when the overall demand for restaurant services decreases, brand management is one of the most effective measures that allow restaurants not to go bankrupt, to ensure their functioning and to form a certain development potential. Determining the functions and peculiarities of impact on the restaurant brand during military operations will allow establishments to improve the quality of brand management in difficult conditions.

Thus, a restaurant may need to change its marketing and advertising strategy to maintain and develop its brand in a wartime environment. In particular, a restaurant can use social networks and other online channels to promote its services and connect with customers. Also, a restaurant can set discounts and promotions for customers who are limited in their financial capabilities. One of the main tasks of a restaurant during the war is to keep customers and staff safe. Therefore, the restaurant brand can be used to strengthen customers' trust in the restaurant and guarantee the safety of their lives and health. Given the heterogeneity of restaurant business development by regions of Ukraine, promising areas for further research include the working out of restaurant development strategies taking into account regional specifics.

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## ■ CONFLICT OF INTEREST

None.

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### Олена Олегівна Стрижак

Кандидат економічних наук, доцент  
Харківський національний економічний університет імені Семена Кузнеця  
61166, просп. Науки, 9А, м. Харків, Україна  
<https://orcid.org/0000-0002-9367-9061>

### Наталія Вікторівна Погуда

Кандидат економічних наук, доцент  
Харківський національний економічний університет імені Семена Кузнеця  
61166, просп. Науки, 9А, м. Харків, Україна  
<https://orcid.org/0000-0002-8926-9350>

## Управління брендом ресторану в умовах війни

■ **Анотація.** Повномасштабні воєнні дії, що відбуваються з 2022 року в Україні, негативно впливають на всі сфери економіки, включно зі сферою ресторанного бізнесу. Важливим чинником, що допомагає працювати та розвиватися українським ресторанним закладам є бренд. Тому актуальності набувають питання управління брендом ресторану з урахуванням воєнних умов. Мета дослідження – визначення характерних рис брендингу суб'єктів ресторанної справи в контексті воєнних дій. У статті застосовано такі наукові методи, як: бібліографічний аналіз, аналіз та синтез, групування та порівняння. Для аналізу сектору діяльності із забезпечення стравами та напоями було використано дані Державної служби статистики України. Дані охоплюють період з кінця 2014 до початку 2023 року. Проаналізовано український сектор діяльності із забезпечення стравами та напоями (включно з оцінюванням змін бізнес-ситуації, аналізу рівня зайнятості та коливань попиту в цій сфері) для визначення особливостей функціонування та перспектив розвитку ресторанного бізнесу. Окреслено проблеми, з якими зіштовхуються українські ресторани підприємства протягом 2022-2023 рр. Обґрунтовано, що управління брендом ресторану важливе для забезпечення його діяльності в умовах воєнних дій та надалі для післявоєнного відновлення. Визначено особливості та функції бренду ресторану, а також систематизовано чинники впливу на бренд ресторану в кризових умовах. Запропоновано імплементацію закордонного досвіду щодо просування бренду ресторану, зокрема просування послуг у соціальних мережах та інших онлайн-каналів. Результати дослідження мають практичне значення для українських ресторанних закладів та можуть бути використані ними з метою корегування як загальної стратегії розвитку ресторану, так і заходів просування бренду

■ **Ключові слова:** заклади громадського харчування; сфера харчування; кризові умови; функції лейбла; чинники впливу на імідж компанії

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## Dmytro Shyian\*

Doctor of Economics, Professor  
Simon Kuznets Kharkiv National University of Economics  
61166, 9A Nauka Ave., Kharkiv, Ukraine  
<https://orcid.org/0000-0002-0815-267X>

## Irina Litovchenko

PhD in Economics, Associate Professor  
Simon Kuznets Kharkiv National University of Economics  
61166, 9A Nauka Ave., Kharkiv, Ukraine  
<https://orcid.org/0000-0002-8117-1244>

## Yelyzaveta Sevriukova

Postgraduate Student  
Simon Kuznets Kharkiv National University of Economics  
61166, 9A Nauka Ave., Kharkiv, Ukraine  
<https://orcid.org/0000-0002-0757-490X>

## Peculiarities of the formation of human capital in rural areas in the pre-war period

■ **Abstract.** In Ukraine, there is a systemic crisis related to the reduction of the population in rural areas. As a result, settlements disappear, the industrial and social sphere declines. Revival of rural areas is becoming a problematic process, and one of the main reasons for this is the lower quality of life of rural residents compared to residents of large cities. The purpose of the study was to assess individual components of human capital formation in rural areas in the pre-war period. In the research process, a dialectical method of cognition, a systematic approach to the study of economic phenomena and processes, an abstract-logical, statistical grouping and a method of comparing averages using the Student's t-Test were used. It was established that in 2019-2021, the incomes of rural households increased from UAH 96,692 to UAH 118,890. Households in rural areas and in large cities were also grouped according to the level of self-assessment of their income level. It was established that in households with an income of up to UAH 40,000 the share of those who assessed the level of their income as "It was enough and savings were made" in rural areas and in large cities was equal to 0.8%. The specific weight of those who assessed their income level as "It was not possible to provide even enough food" was equal to 14.2% and 11.4%, respectively. A study of the impact of the level of income on the amount of expenses for such items as food, education and health care was conducted. The specific weight of expenditure on food products in their total value was determined. It has been established that the amount of expenditure on food products is clearly dependent on the level of household income both in rural areas and in large cities. In rural areas, healthcare costs were 22% lower than in large cities. The results of this study can be used during the development of the state strategy for the post-war reconstruction of rural areas

■ **Keywords:** households; household incomes; household expenses; income structure; quality of life; sustainability

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\*Corresponding author



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## ■ INTRODUCTION

The full-scale invasion of the Russian Federation into Ukraine had a significant impact on the level and quality of life of the population which forced millions of people to leave their homes, emigrate and start life anew. Also, the number of financial losses increased. As a result of these events, the financial losses of households were very significant, which seriously affected their quality and standard of living. People stopped their normal economic activities, tax payments, the connections and logistics chains developed over the years were disrupted. O. Novikova *et al.* (2023) and V. Opanasiuk (2023) believe that it is the losses in human capital, despite significant material losses, that are the main losses of Ukraine. At the same time, in 2023, when drawing up the state budget, the government predicts GDP (gross domestic product) growth at the level of approximately 3%. According to forecasts of the Ukraine Economic Outlook group, in the event of a cessation of hostilities in 2023, in 2024 the gross domestic product may even be slightly higher than in 2021, and by 2025, the wage level will already exceed 2021 (Kulyk, 2022; Ukraine Economic Outlook, n.d.) This is an optimistic forecast, but it is realistically calculated and quite possible under the conditions of economic reforms and the fight against corruption in the post-war period. There should be a clear picture of the situation that existed on the eve of the military aggression of the Russian Federation. This will provide an opportunity to better understand the problems that existed on the eve of the war and may be relevant again in the process of gradually reaching the level of household incomes in 2021.

As D. Melnychuk (2015) notes, the concept of human capital has a political and economic meaning and characterizes the patterns of distribution of the social product between different strata of the population. The author defines human capital as an economic asset that is formed as a result of investments through the acquisition of knowledge and appropriate modification of the productive capabilities of an individual (labour team, society as a whole), and is a form of representation of the latter in the course of work, which provides a certain income to the participants of the investment and production process. From the point of view of A. Kolot *et al.* (2009), human capital is: "Formed and developed as a result of investments and accumulated by a person, a certain stock of health, knowledge, skills, abilities, motivations, which is purposefully used in a certain sphere of economic activity, contributes to increasing labour productivity and, thanks to this, affects the growth of the income of its owner, the profit of the enterprise and the national income". Researchers Y. Yao & Y. Zhang (2023) pay attention to the influence of difficult times for the country on the formation of human capital. On the example of China, it was analysed how hunger affects the formation of human capital. The authors' conclusion was that the negative impact of the difficulties experienced will decrease, but only with the next generation. The authors also drew attention to the problems of human capital formation related to energy consumption in a historical perspective (Hondroyannis *et al.*, 2022; Awaworyi Churchill *et al.*, 2023), the impact of changes in the amount of human capital on economic growth (Eftimoski, 2022), the factor of human capital on career growth (Andersen *et al.*, 2022).

It should also be noted that the problems of household income formation are related to the formation of human capital. According to O. Lozychenko (2022), it is considered that the household is a separate economic institution, which is an association of individuals who carry out joint activities related to household management. The level of human capital in the country will largely depend on how the wealth of households is formed. C. Barone *et al.* (2022) analysed the prevalence of approaches to the social situation of households according to the criteria of income, class and social status based on the publications of the most cited sociological journals. Their conclusion was that income indicators dominate the research compared to criteria of the class and social status. The problems of income and expenditure formation were studied in the works of A.T. Byrne & D.R. Just (2022), D.W. Schanzenbach (2023). Ukrainian scientists S.Yu. Goncharova & I.V. Buryak (2021), O. Lozychenko (2021) also pay considerable attention to the issues of household income formation. The purpose of this study was to assess the socio-demographic characteristics of rural households compared to households in large cities, the structure of their costs and resources and the level of material well-being of various social groups.

## ■ MATERIALS AND METHODS

The statistical data of state observations of the living conditions of households served as the basis of the research. The file Anonymous microdata on key indicators of household income, expenditure and living conditions (2019; 2020; 2021) included 8,107 households (17.4 thousand people) in 2019, 7,849 households (16.9 thousand people) in 2020 and 7,614 households (16.2 thousand people) in 2021. This statistical survey is based on a survey of a selected group of households, which represents the structure of the population of Ukraine according to various criteria. Detailed information about the organization, methodology of conducting the Survey of Living Conditions of Households, distribution of its results to the general population, data quality, etc. is posted on the official website of the State Statistics Service of Ukraine (Demographic and social statistics..., n.d.). The survey does not cover the institutional population (military servicemen, persons in prison, persons permanently living in boarding houses, homes for the elderly), marginal strata (homeless, etc.), as well as the population living on temporarily occupied territory. Depersonalized microdata protection methods were applied to the published data in order to minimize the risk of indirect identification of a specific statistical unit. The file includes variables related to income and resources, individual socio-demographic characteristics of households, the amount of expenses, food consumption. Households also indicated additional information related to the type of settlement (a large city, a rural area, a small town), the region of residence, the number of persons in the household and the type of household (with children, without children).

During the work, all households of Ukraine were divided into eleven groups according to the income level from to UAH 40,000 up to more than UAH 240,000 and structural shifts in their distribution in rural areas for 2019-2021 were investigated (Table 1).

**Table 1.** Specific weight of households with different income levels in rural areas in Ukraine in 2019-2021

Income level, UAH	2019		2020		2021	
	number	in % to the total number	number	in % to the total number	number	in % to the total number
up to 40,000	548	17.0	420	13.1	263	8.5
40,000.1-60,000	564	17.5	578	18.0	496	16.0
60,000.1-80,000	481	15.0	515	16.0	488	15.8
80,000.1-100,000	402	12.5	405	12.6	377	12.2
100,000.1-120,000	326	10.1	320	9.9	322	10.4
120,000.1-140,000	235	7.3	212	6.6	247	8.0
140,000.1-160,000	186	5.8	215	6.7	201	6.5
160,000.1-180,000	140	4.4	154	4.8	170	5.5
180,000.1-200,000	91	2.8	106	3.3	136	4.4
200,000.1-240,000	126	3.9	136	4.2	151	4.9
more than 240,000	118	3.7	157	4.9	244	7.9

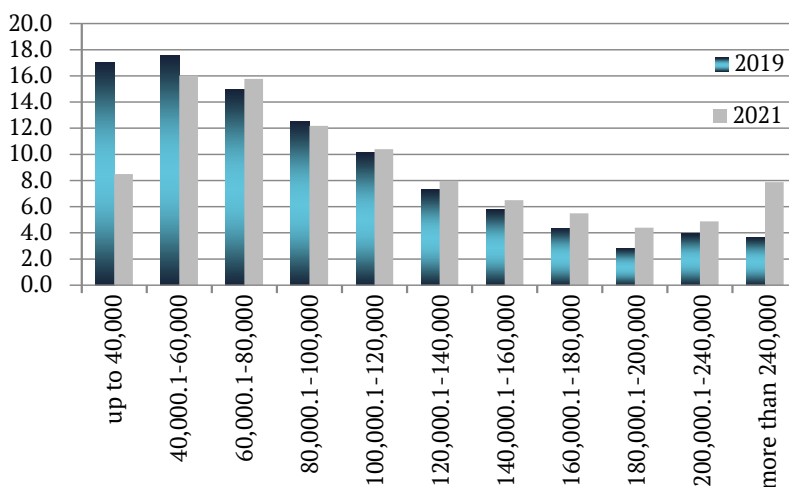
**Source:** created by the authors based on Anonymous microdata on key indicators of household income, expenditure and living conditions (2019; 2020; 2021)

The purpose of this analysis was to assess changes in the dynamics of incomes of individual groups of households relative to their total number. A comparison of the reliability of differences in the level of income between groups and in dynamics was made with the help of the method of comparing averages using the Student's t-test. A separate assessment was made between the level of self-assessment of one's income and the level of income of households both in rural areas and in large cities. Household members had the opportunity to answer the question regarding income adequacy by choosing one of the four answer options: "It was enough and savings were made"; "It was enough, but no savings were made"; "Constantly denied the most necessary things, except for food"; "It was not possible to provide even enough food". Differences in the income levels of residents of large cities and rural areas were also compared using the Student's t-test. The choice of these two types of settlements was determined by migration processes from the village to large cities, which have been taking place for the past seventy years. The study was conducted in accordance with the Declaration of Helsinki (n.d.). All participants were informed

about the purpose of the study, confidentiality, the utilization of their data, and potential risks. When examining the influence of the household income level on the amount of expenses, the following positions were distinguished: influence on food, education, and health care. Data processing was carried out across rural areas and large cities, which made it possible to assess the relationship between the level of income and the absolute and relative level of expenses for selected items of households with different income levels. Reliability of differences between groups was performed with the help of the method of comparing means using the Student's t-test.

### RESULTS AND DISCUSSION

When analysing the given data (Table 1), it should be noted that in 2019, the largest share of households fell to the first two groups with an income of up to UAH 60,000 (34.5% of the entire population). Whereas in 2021, their specific weight was already equal to 24.5%, that is, it decreased by exactly 10.0%. The share of households of the last two groups with the highest level of income in 2019 was equal to 7.65%, and in 2021 – to 12.8% (Fig. 1).

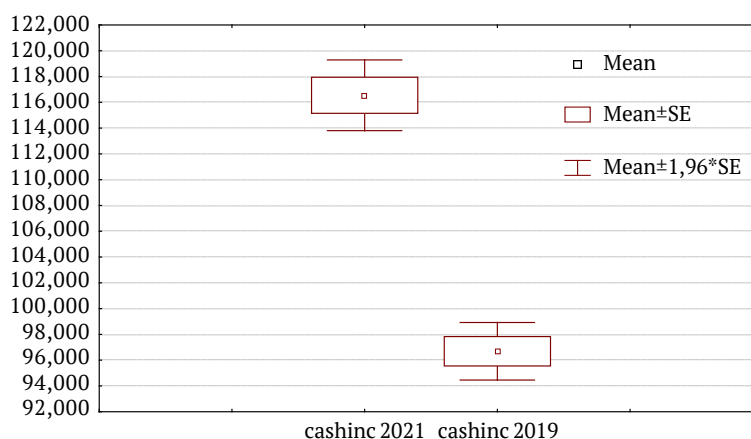


**Figure 1.** Distribution of rural households by income level in Ukraine in 2019 and 2021, %

**Source:** created by the authors based on Anonymous microdata on key indicators of household income, expenditure and living conditions (2019; 2020; 2021)

Specific weight of households with an income level of UAH 80,000 up to UAH 12,000 remained stable. At the same time, the average level of income increased from UAH 96,692 up to UAH 118,890. At first glance, this growth indicates an increase in the level of income. However, considering that the accumulated inflation during this period was equal to 19.6%, such an increase in income actually only compensates for inflationary losses (Consumer

price..., 2019; Consumer price..., 2020; Consumer price..., 2021). The reliability of differences between the income levels of 2019-2021 was checked with the help of the method of comparing averages, using the Student's t-test. The resulting span dendrogram is shown in Figure 2. In this way, there is a situation when a clear increase in the level of household incomes is nominal, without an increase in their real value.



**Figure 2.** Dendrogram of household incomes in rural areas of Ukraine in 2019 and 2021

**Note:** the dot inside is the average value; the rectangle – value of one standard deviation; the whiskers are the value of two standard deviations

**Source:** created by the authors

It should be emphasized separately that the average income for all households in large cities was UAH 144,422, while in rural areas it was UAH 118,890. This difference is significant and determines many problems of the rural population which is forced to reduce its expenses. Such situation leads to population migration from rural areas and their depopulation. This is a matter of state policy and national security.

An assessment of the specific weight of the household survey was carried out depending on the level of income, separately in rural areas (RA) and in large cities (LC). The logic of such comparison is due to the fact that in Ukraine, internal migration from villages to large cities has been

taking place since the time of collectivization. Since the 1990s, rural migration has grown even more significantly and has become one of the dominant factors that determines the size of the rural and urban population (Maly-novska, 2018; Pozniak, 2020). Another criterion for division was the self-assessment of income sufficiency by the households themselves. There were 4 possible answer options: “It was enough and savings were made” (1<sup>st</sup> option); “It was enough, but no savings were made” (2<sup>nd</sup> option); “Constantly denied the most necessary things, except for food” (3<sup>rd</sup> option); “It was not possible to provide even enough food” (4<sup>th</sup> option). In the given table, the numbering of the answer options is presented by groups (Table 2).

**Table 2.** The specific weight of households with different levels of self-assessment by households of their income level in rural areas and in large cities of Ukraine in 2021, %

Income level, UAH	1 <sup>st</sup> option		2 <sup>nd</sup> option		3 <sup>rd</sup> option		4 <sup>th</sup> option	
	LC	RA	LC	RA	LC	RA	LC	RA
up to 40,000	0.8	0.8	20.8	20.9	64.2	66.9	14.2	11.4
40,000.1-60,000	0.7	3.4	21.5	26.0	70.7	60.3	7.2	10.3
60,000.1-80,000	3.1	3.7	32.8	37.5	61.4	50.8	2.8	8.0
80,000.1-100,000	6.2	6.9	40.9	41.6	51.5	44.8	1.5	6.6
100,000.1-120,000	7.9	11.8	48.4	47.8	40.1	33.5	3.6	6.8
120,000.1-140,000	8.3	11.7	56.9	51.8	31.7	29.6	3.2	6.9
140,000.1-160,000	10.4	12.4	60.1	60.7	28.2	24.4	1.2	2.5
160,000.1-180,000	10.4	15.9	67.4	54.7	20.8	27.1	1.4	2.4
180,000.1-200,000	16.0	12.5	66.4	62.5	17.6	23.5	0.0	1.5
200,000.1-240,000	19.8	19.2	63.5	64.2	16.8	13.9	0.0	2.6
more than 240,000	24.4	27.0	68.0	64.8	7.3	6.1	0.3	2.0

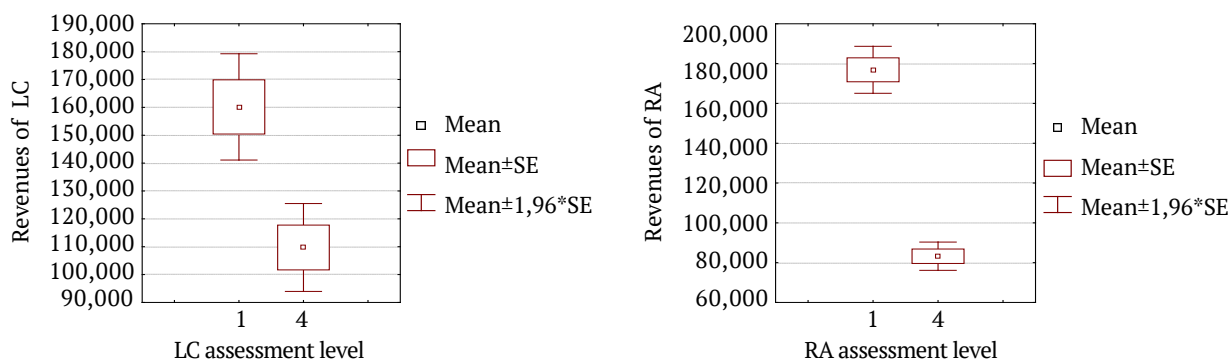
**Note:** RA – rural areas; LC – large cities

**Source:** created by the authors based on Anonymous microdata on key indicators of household income, expenditure and living conditions (2019; 2020; 2021)

It can be stated that the level of self-esteem is clearly dependent on the level of household income. Thus, in the group of households with an income level of up to UAH 40,000, the share of those who assessed their income level as “It was enough and savings were made” in rural areas and in large cities was equal to 0.8%. While the percentage of those who rated their income level as “Couldn’t provide even enough food” was 14.2% and 11.4%. In this group of households, the largest specific weight was of those who assessed their financial status as “Constantly denied the most necessary things, except for food”. It was equal to 64.2% in large cities and 66.9% in rural areas. In the group with an income level of UAH 12,000-140,000 the specific weight of those who belonged to the first group was already equal to 8.7% in large cities and 11.7% in rural areas. 3.2% of households in large cities and 6.9% in rural

areas belonged to group four “It was not possible to provide even enough food”. Households of the last group, with an income level of more than UAH 240,000. The specific weight of those who belonged to the first group, was equal to 24.4% in large cities and 27.7% in rural areas. The share of households belonging to the fourth group was equal to 0.3% in large cities and 2.0% in rural areas.

The proof that these discrepancies are not random was the examination of the data on the difference in average incomes between groups of households 1 and 4. For this, the method of comparing means using the Student’s t-test was used again. It was found that the probability that the mean values could be random is almost 0. Constructed graphs of dendrograms visually confirm this (Fig. 3). In this case, it is only necessary to state that the level of disagreements in rural areas turned out to be more significant than in large cities.



**Figure 3.** Dendrogram of household incomes in large cities and rural areas with different levels of self-esteem (groups 1 and 4) in Ukraine in 2021

**Note:** the dot inside is the average value; rectangle – value of one standard deviation; whiskers are the value of two standard deviations

**Source:** created by the authors

An assessment of the impact of the level of income on the amount of expenses for such items as food, education and health care was carried out. The specific weight of food costs in their total amount was also determined. This indicator is a kind of index of the quality of life. It is believed

that a country can be classified as a kind of elite group according to the level of its economic development and the quality of life of the population, if the share of expenditure on food does not exceed 20-25% (Larsen, 2014; Sydorchuk *et al.*, 2022). The obtained results are shown in Table 3.

**Table 3.** The impact of the level of household income on the amount of expenses for individual items in large cities and rural areas of Ukraine in 2021

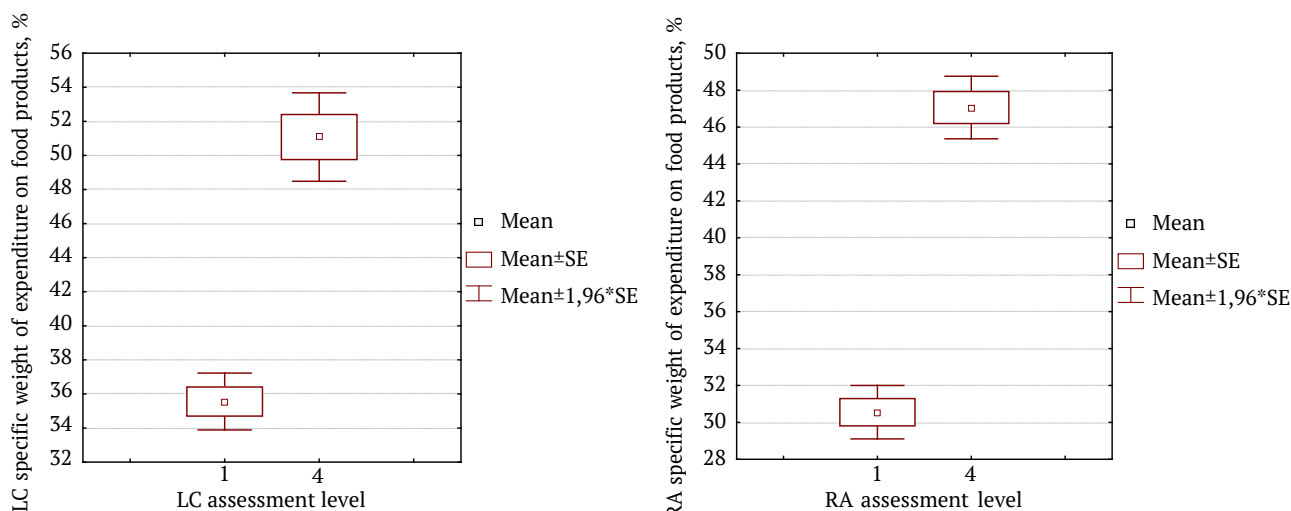
Income level, UAH	Food		Specific weight of food costs to all costs, %		Health care		Education	
	LC	RA	LC	RA	LC	RA	LC	RA
up to 40,000	22,923	19,218	70.6	63.0	1,650	1,674	217	0
40,000.1-60,000	29,346	22,971	58.2	45.8	3,241	3,339	316	15
60,000.1-80,000	36,148	28,892	51.5	41.4	4,238	4,114	593	33
80,000.1-100,000	43,440	34,200	48.1	38.3	3,871	4,609	528	159
100,000.1-120,000	48,463	37,877	43.9	34.5	6,634	5,693	684	236
120,000.1-140,000	50,906	42,192	39.3	32.6	5,745	5,968	1,338	232
140,000.1-160,000	60,152	44,021	40.4	29.4	7,633	5,081	1,789	647
160,000.1-180,000	57,327	49,888	33.9	29.6	9,310	4,927	2,626	527
180,000.1-200,000	65,483	56,292	34.6	29.7	6,840	7,124	2,004	1,186
200,000.1-240,000	72,467	55,717	33.5	25.6	8,529	7,199	2,973	1,062
more than 240,000	79,602	70,975	24.1	22.8	9,417	8,905	4,518	1,256

**Source:** created by the authors based on Anonymous microdata on key indicators of household income, expenditure and living conditions (2019; 2020; 2021)

The obtained data give grounds for the conclusion that there is a close relationship between the amount of household income and the amount of their expenditure on food products. Households with an income of up to UAH 40,000 spent on food in large cities equalled UAH 22,923, or 70.6% of the total expenditure. In rural areas, these indicators were equal to UAH 19,218 and 63.0%. In the group of households with an income level of 120,000-140,000 UAH expenditure on food products in large cities was equal to UAH 50,906 (39.3% of their total value), and in rural areas – UAH 42,192 (32.6% of their total value). In the group with the highest level of income, the amount of expenditure on food products was equal to UAH 79,602 in large cities (24.1% of their total amount), in rural areas this figure was UAH 70,975 (22.8% of their total value). Therefore, it

should be stated that households in large cities spent significantly more on food products than households in rural areas. The average cost of this item in large cities was UAH 51,504 against UAH 37,730 in rural areas. In this case, the explanation of this situation can be the fact that rural residents consume part of food products of their own production, but this cannot completely compensate for this difference.

The reliability of differences was checked using the method of comparing means using the Student's t-test between groups 1 and 4 according to the level of self-assessment of household income. The given dendrograms make it possible to ascertain the significance of the differences in the specific weight of expenses on the level of nutrition from the selected RA factor (Fig. 4).



**Figure 4.** Dendrogram of the specific weight of food expenditure of households in large cities and rural areas with different levels of self-esteem (groups 1 and 4) of Ukraine in 2021

**Note:** the dot inside is the average value; the rectangle – value of one standard deviation; the whiskers are the value of two standard deviations

**Source:** created by the authors

Based on this, it can be stated that in Ukraine, only in the group of the most affluent households, the level of expenditure on food products corresponds to their value in the developed countries of the world. In this respect, the gap is very significant. In addition to the level of expenditure on food products, the level of expenditure on health care and education are significant factors affecting the quality of human capital. In this case, first of all, it should be noted that the level of spending on education in rural areas is significantly inferior to its value in large cities. In particular, in the group of households with incomes of UAH 120,000-140,000 the amount of expenses for education equalled UAH 1,338, respectively, and UAH 232. In the group with an income level of more than UAH 240,000 – UAH 4,518, respectively, and UAH 1,256. On average, households in large cities spent UAH 7,478 on education, while in rural areas – UAH 3,357 (Table 3). This is the evidence that residents of rural areas have significantly fewer opportunities to provide their children with quality education. In this case, the problem may be that people do not have the opportunity to pay for additional courses and classes for children due to the absence of such

courses. Perhaps the influence is due to the peculiarities of the mentality of rural residents who believe that these expenses can be saved. But such position may lead to a decrease in the competitiveness of rural school graduates on the labour market in the future.

The amount of health care costs was quite similar for different groups. At the same time, out of the eleven selected groups, in seven of them the costs in large cities exceeded their value in rural areas. This conclusion is confirmed by the average values of these expenses for the entire population, which were equal to UAH 6,305 in large cities and UAH 5,173 in rural areas. Although such difference is not significant, it also indicates the limited access of rural residents to medical services.

It should be noted that studies related to the level and quality of life of the rural population, the causes of migration, and poverty are of considerable interest for Ukrainian scientists (Radchenko *et al.*, 2023). In particular, V.L. Zhakhovska (2019) notes that the rural population is socially vulnerable to a greater extent than the urban population and more often exposed to the risks of poverty and social exclusion. Among the prerequisites that affect these processes,

the author singles out the aging of the rural population, the difficulty of finding employment due to the remoteness of their places of residence from cities and settlements, which are centres of economic activity, the automation of workplaces and the release of a significant share of workers from agriculture, the preservation of a high level of informal employment. M.P. Butko *et al.* (2021) link the development of rural areas and communities with the development of agrarian formations and the formation of balanced business environment. V. Riabokon (2021) also emphasizes that the problems of preserving the Ukrainian countryside and human capital are mutually dependent. The decentralization reform should contribute to solving these tasks.

Foreign researchers paid considerable attention to the issues of poverty and the level of wealth of households. C. Luo *et al.* (2020), on the example of China, based on sociological research of rural households, concluded that income inequality creates poverty, but the economic growth that takes place in the country's economy makes it possible to reduce the level of poverty. A similar conclusion was made by S.H.C. Matt *et al.* (2012) on the example of the analysis of sociological data of one of the provinces of Malaysia. The authors of the study drew attention to the fact that non-agricultural incomes provide an opportunity to reduce the level of poverty, but lead to increased differentiation of households by the level of prosperity. Studies by O. Neme Castillo & C. Chiatchoua (2022), C.O. Omodeo (2022) on poverty in developing countries made it possible to establish that international companies entering their market can improve the social situation and reduce poverty. A. Rodriguez-Alvarez *et al.* (2021) draw attention to the issue of so-called "energy poverty", that is, the inability of individual households to pay their energy bills. According to the researchers, one of the effective measures to solve this problem is direct subsidies from the state and increasing energy efficiency. Another problem concerns the relationship between the level of poverty and the development of democratic institutions. C. Dörffel & A. Freytag (2023) concluded that democratic countries can help reduce poverty by encouraging redistribution, removing barriers for the poor, that is, democratization reduces poverty.

C.M. Lindsay (1971), O. Yavorska (2018) noted that the correct measure of return on investment in human capital is the wealth effect from increased wages. It was concluded that the indicator of "difference in income" of employees contains a difference due to the size of investments. G.S. Becker *et al.* (1990) also analysed investment in human capital, but from a different angle. They concluded that societies with limited human capital choose large families and invest little in each member, but those with abundant human capital do the opposite. An example of this is many developing countries. Ukraine also falls into this group of countries in terms of its income, but it differs in that the birth rate in Ukraine is one of the lowest in the world. The need for an optimal tax policy regarding investments in human capital is also emphasised (Stantcheva, 2017). At the same time, it is important to reduce taxation with age, which will make it possible to maintain the appropriate level of human capital. A. Angelsen *et al.* (2014) conducted a comparative income analysis of approximately 8,000 households in 24 developing countries and concluded that environmental income accounts for 28% of

total household income, 77% of which is attributable to natural forests. It is concluded that the preservation of the natural environment and forests, in particular, is a necessary condition for the growth of incomes of rural residents. One of the problems is also the irrationality of households in planning expenses and the inability to optimize future incomes. According to G. Kaplan & G.L. Violante (2014) households show large propensities to consume due to additional temporary income and small propensities to consume due to news of future income.

All the mentioned issues and problems have a direct impact on the level and quality of human capital formation. The conducted research made it possible to clarify and specify certain aspects of the formation of human capital in Ukraine in the pre-war period from the point of view of both the level of income and expenses for the main consumer items.

## ■ CONCLUSIONS

The conducted research revealed a number of problems in the formation of the appropriate level of human capital in rural areas of Ukraine in the pre-war period and made it possible to establish the following: in 2019-2021, there was a nominal increase in the level of household incomes in rural areas, which did not lead to their real increase. The comparison of the distribution of households in large cities and in rural areas between the amount of income and the level of their self-esteem revealed their clear dependence, which was also confirmed by the method of comparing averages using the Student's t-test.

The assessment of the absolute and relative value of food costs proved that their value is clearly dependent on the income level of households both in rural areas and in large cities. However, only in the group of households with an income level of more than UAH 240,000, the specific weight of expenditure on food was equal to 22.8% in rural areas, which can be considered a level corresponding to developed countries. It is noted that rural households spend significantly less on education compared to residents of large cities. The difference in these expenses exceeded two times. Based on this, it can be argued that such difference in costs can significantly affect the level of competitive positions of rural youth in the labour market in the future. It was also established that households in rural areas spend less on health care than in large cities. In this case, the difference in costs was not significant, but again, this is evidence of fewer opportunities for rural residents to receive quality medical services. Based on the conducted research, it can be concluded that the state should pay much more attention to the development of rural areas, which, in turn, will make it possible to stop their depopulation, and give rural residents equal conditions, in terms of quality of life, with residents of large cities. Ultimately, this will make it possible to restore not only rural settlements, but also to form and improve the quality of human capital in rural areas.

The loss of human capital is one of the main obstacles to the country's further revival. The problem lies, on the one hand, in creating conditions for the return of the population from emigration, and on the other – in restoring the economic conditions of the population's quality of life. These problems are interrelated and will require solutions

in the first stages of post-war reconstruction. Therefore, further research in this direction may be aimed at assessing the impact of the war on the quality and problems of human capital formation in Ukraine in general and in rural areas in particular.

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## ■ CONFLICT OF INTEREST

None.

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### **Дмитро Вікторович Шиян**

Доктор економічних наук, професор  
Харківський національний економічний університет ім. Семена Кузнеця  
61166, просп. Науки, 9А, м. Харків, Україна  
<https://orcid.org/0000-0002-0815-267X>

### **Ірина Володимирівна Литовченко**

Кандидат економічних наук, доцент  
Харківський національний економічний університет ім. Семена Кузнеця  
61166, просп. Науки, 9А, м. Харків, Україна  
<https://orcid.org/0000-0002-8117-1244>

### **Єлизавета Олександрівна Севрюкова**

Аспірант  
Харківський національний економічний університет ім. Семена Кузнеця  
61166, просп. Науки, 9А, м. Харків, Україна  
<https://orcid.org/0000-0002-0757-490X>

## **Особливості формування людського капіталу на сільських територіях у передвоєнний період**

■ **Анотація.** В Україні має місце системна криза пов'язана зі скороченням населення на сільських територіях. Внаслідок цього зникають населенні пункти, занепадає виробнича та соціальна сфера. Відродження сільських територій стає проблемним процесом і одною з головних причин цьому є нижча якість життя сільських мешканців у порівнянні з мешканцями великих міст. Метою дослідження була оцінка окремих складових формування людського капіталу на сільських територіях у передвоєнний період. У процесі дослідження використано діалектичний метод пізнання, системний підхід до вивчення економічних явищ і процесів, абстрактно-логічний, статистичних групувань, метод порівняння середніх з використанням t-критерію Стьюдента. Встановлено, що у 2019-2021 роках доходи сільських домогосподарств зросли з 96692 грн. до 118890 грн. Було також здійснено групування домогосподарств на сільських територіях та у великих містах за рівнем самооцінки рівня своїх доходів. Встановлено, що в домогосподарств з рівнем доходу до 40000 грн. питома вага тих, хто оцінював рівень своїх доходів «Було достатньо і робили заощадження» в сільській місцевості та у великих містах дорівнювала 0,8 %. Питома вага тих, хто оцінював свій рівень доходу, як «Не вдалося забезпечити навіть достатнє харчування» дорівнювала 14,2 % та 11,4 % відповідно. Проведено дослідження впливу рівня доходів на величину витрат по таким статтям, як продукти харчування, освіта та охорона здоров'я. Визначено питому вагу витрат на продукти харчування в їх загальній величині. Встановлено, що величини витрат на продукти харчування знаходяться у чіткій залежності від рівня доходів домогосподарств як на сільських територіях, так і у великих містах. На сільських територіях витрати на охорону здоров'я були на 22 % меншими ніж у великих містах. Результати даного дослідження можуть бути використанні під час розробки державної стратегії повоєнного відновлення сільських територій

■ **Ключові слова:** домогосподарства; доходи домогосподарств; витрати домогосподарств; структура доходів; якість життя; сталий розвиток

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## Kateryna Leshchenko\*

PhD in Economics, Associate Professor  
Kyiv National Economic University named after Vadym Hetman  
03057, 54/1 Peremohy Ave., Kyiv, Ukraine  
<https://orcid.org/0000-0001-8467-5141>

## Serhii Leshchenko

PhD in Politics  
NGO New Solutions Center  
01015, 16 Lavrska Str., Kyiv, Ukraine  
<https://orcid.org/0009-0000-1928-251X>

## Determining priorities for Ukraine's post-war reconstruction in the conditions of preparation for EU membership

**Abstract.** The priorities for Ukraine's post-war reconstruction in preparation for its membership in the European Union are to ensure integration, efficient use of resources, socio-economic growth, and sustainable development. Finding ways to effectively develop the economic and other sectors, adapt to European norms and create a sustainable framework for integration into the European space was the purpose of this study. The methodology is based on the empirical research method. The reform priority coefficient was calculated using a formula for determining the priority areas for improving the economic, demographic, and political sectors of Ukraine. The study identified priority areas for Ukraine's post-war development, including mechanisms such as ensuring sustainable economic growth, modernising infrastructure, developing trade relations with EU countries, supporting innovation and entrepreneurship, improving the quality of education and healthcare, which can be used by scientists and the state to ensure the country's effective development and obtaining the status of a full EU member. The importance of ensuring social protection of the population, including raising living standards and ensuring access to basic social services, was identified. The study found that effective economic diplomacy and the expansion of international relations with EU member states are crucial factors for Ukraine's successful preparation for EU membership. The focus is on ensuring strategic orientation, efficient use of resources and achieving the country's socio-economic development in line with European standards and values. In practice, these results can become the basis for developing strategic decisions and programmes in line with EU criteria

**Keywords:** international economy; international relations; economic reform; European integration; socio-economic indicators

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## INTRODUCTION

Post-war reconstruction is an important stage for restoring economic development and strengthening the stability of countries that have suffered from the consequences of military conflicts. It requires concentrating resources and making strategic decisions to restore the destroyed economic infrastructure and create the preconditions for

sustainable development. As Ukraine embarks on the path to EU membership, it is preparing its economy to meet EU standards and criteria.

There is already prior experience of EU accession among countries that have undergone military conflict, which has been researched by several scholars. For instance,

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\*Corresponding author



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M. Kržan & D. Birac (2021) describe the experience of Slovenia, which underwent a military conflict during the breakup of Yugoslavia in the 1990s but later implemented significant economic reforms that facilitated its accession to the EU in 2004. The study by T. Popic (2023) describes the reforms that took place in the country during the restructuring of the system following EU requirements, namely the reform of the healthcare system in Slovenia, which directly affects the country's economic development. Reforms included the introduction of compulsory health insurance, reorganisation of medical institutions, and improved access to healthcare services. From 1991 to 1995, Croatia was the object of armed aggression by Serbia, but thanks to the chosen path of reform, in 2013 it became a full member of the EU, as described by Croatian researcher M.C. Grubišin (2023). The study analysed the strategies and measures adopted by Croatia to achieve success in the post-war reconstruction process, including economic and other reforms; it also examined the role played by EU integration in changing the economic, political, and social situation in Croatia. The positive impact of the EU on the reconstruction after the military crisis in Bosnia and Herzegovina, which applied for EU accession in 2016, is analysed in study by A.V. Kostrubitska (2022). The author examined the effectiveness of management practices and strategies used in Bosnia and Herzegovina during post-war reconstruction and analyses the possibility of their application in the Ukrainian context.

As noted by M. Pashkov *et al.* (2022), EU membership implies the achievement of economic, political, legal, and other criteria that must be met by the candidate country. Each accession process is individual and depends on many factors, such as the state of the economy, democracy, legal system, and other aspects of the country. Thus, in obtaining EU membership, Ukraine needs to reform many sectors of its economy. Ukrainian researcher O. Lokshyna (2022) examines the issue of education in Ukraine in the context of the achievements of European integration and development prospects in the context of the military conflict and post-war reconstruction. The author emphasises the need to reform the educational system, specifically in the context of integration of European values, pedagogical approaches and innovative methods.

Considering the above-mentioned studies, this study is relevant, because at the time of the study, Ukraine has yet to go through the post-war reconstruction phase, and there are not enough scientific studies that would consider possible areas of reform in Ukraine. The purpose of this study was to identify key areas for reforming and adapting the Ukrainian economy and other sectors, which is a necessary requirement for obtaining the status of an EU member state.

## ■ MATERIALS AND METHODS

The theoretical basis included academic articles, studies, and analytical reports, specifically, the Razumkov Centre's Analytical Report of December 2022 (Pashkov, 2022) and the Analytical Report published in the National Security and Defence magazine in 2022 (Pashkov *et al.*, 2022). These documents contain important information on post-war reconstruction in Ukraine and its integration into the EU, allowing for a better analysis of key issues and prospects for development. An additional tool was the official statistical

reports, studies and reports of international organisations on economic development, social indicators and other aspects of post-war reconstruction in Ukraine, such as the State Statistics Service of Ukraine (n.d.) and Corruption perception index-2022 (2022). All materials used are open source and freely available on the Internet. The study used methods of empirical scientific cognition, namely, the descriptive method was useful in collecting information and interpreting it about foreign practices of preparing for EU membership. The data collected was used to analyse the interaction of economic and political factors, and the impact of preparations for EU membership on Ukraine's post-war reconstruction. To collect and process data, statistical information was used, calculations of economic growth indicators (State Statistics Service of Ukraine, n.d.), as well as documents related to the implementation of the Deep and Comprehensive Free Trade Area (DCFTA), economic diplomacy and international relations (Agreement on partnership..., 1998; The agenda of the Ukraine-EU..., 2009; Free trade agreements, 2019). Considering all the information received, a formula was derived to determine the priority areas for improving and reforming Ukraine's economic, demographic and political sectors to accelerate its acquisition of EU membership status, which is as follows (1):

$$P = \left( W1 * \left( \frac{V1_{UA}}{V1_{DE}} \right) \right) + \left( W2 * \left( \frac{V2_{UA}}{V2_{DE}} \right) \right) + \left( W3 * \left( \frac{V3_{UA}}{V3_{DE}} \right) \right), \quad (1)$$

where  $P$  is the compliance score;  $W1$ ,  $W2$ ,  $W3$  are weighting factors for the economic, demographic, social and political sectors, respectively (their sum should be equal to 1);  $V1_{UA}$ ,  $V2_{UA}$ ,  $V3_{UA}$  are the values of the assessment of the relevant sector of Ukraine for the selected metric or indicator;  $V1_{DE}$ ,  $V2_{DE}$ ,  $V3_{DE}$  are the benchmark values of the assessment of the relevant sector for the selected metric or indicator. In the current study, the benchmark country is Germany, given the comparable vector of economic and political development of this country with Ukraine and the state of functioning of the German economy.

In the study, the derived formula (1) was used in combination with the empirical method of measurement. This formula allows to consider the importance of different sectors and assign them appropriate scores depending on their significance for the EU integration process. This formula can be modified depending on the particular needs and specific features of Ukraine's development trajectories. The weightings are based on the analysis, assessment, and consideration of national and European development strategies. The use of this methodology and the chosen assessment formula are substantiated by the ability to consider the complex aspects of reforming Ukraine's economic, demographic, and political sectors.

## ■ RESULTS

In preparing for EU membership, Ukraine can draw on the practices of other countries that have successfully implemented reforms and already achieved membership, such as Poland, Croatia, and Slovenia, which had post-war experience of reconstruction and sustainable transformation to achieve compliance with EU criteria. They actively implemented reforms in the economic, legal, administrative,

social, and political sectors. Poland is an example of a successful reform experience, having undergone considerable economic transformations since joining the EU in 2004 (Kolodko, 2020). Poland has implemented wide-ranging reforms aimed at improving the competitiveness of its economy, fighting corruption, and strengthening democratic institutions (Ladonko *et al.*, 2022). These reforms have helped Poland to achieve stable economic growth, attract foreign investment and improve the quality of life of its citizens. After gaining independence in 1991 and the end of the Croatian War of Independence, Croatia began rebuilding its country to gain EU membership (Šabić, 2019). The main principles that guided Croatia included economic reform, democratic values, political stability, the rule of law, and the protection of human rights. The country has also implemented reforms in agriculture, tourism, and infrastructure, which has contributed to improving living standards and developing the country's economy (Kollias & Messis, 2022). To join the EU in 2004, Slovenia implemented reforms in the areas of financial system, budget policy, labour relations, and public administration (Kržan & Birac, 2021). These reforms have resulted in economic stability, foreign investment, and improved living standards. The described practices of Polish, Croatian, and Slovenian reforms demonstrate that successful acquisition of full EU membership requires a comprehensive approach and implementation of reforms in various areas. Ukraine should use this experience as a basis for setting priorities for post-war reconstruction and reforms aimed at gaining EU membership.

The main requirements for countries intending to join the EU should be considered in the reform process. These requirements, which are reflected in the Copenhagen criteria, were defined by the European Council to ensure sustainable development and strengthen the EU

by accepting new members (Kollias & Messis, 2022). An analysis of these requirements is necessary to understand the process of preparing for and accepting countries into the EU. The economic criteria require a candidate country to have a well-functioning market economy. This means that it must be competitive in the EU internal market and capable of adapting to EU economic rules and regulations. These requirements include economic reforms, specifically with regard to financial stability, transparency and efficiency of market mechanisms. The political criteria stipulate that a candidate country must have a stable democracy and guarantee full respect for human rights and fundamental freedoms. Considerable attention is paid to ensuring the rule of law and equality of minorities. These criteria indicate the need for political system development and stability in the country's governance. The candidate country must also prove its ability to adopt and implement EU legislation and its effective application on its territory. They require the adaptation of national legislation to EU norms and standards. The candidate country must have an effective public administration system, an open and fair justice and control system, and the ability to take part in the EU decision-making and implementation processes. Considering these basic requirements, that EU accession is a complex and long-term process that requires significant efforts and changes in many areas of the candidate country's life. However, fulfilling these requirements contributes to economic development, strengthening democracy, and improving the quality of life of citizens in the country under preparation. Considering the hostilities, the state of the Ukrainian economy in 2023, the social and demographic situation, and political processes, the key areas that need to be reformed to achieve EU membership status have been identified, all of which are interconnected (Table 1).

**Table 1.** Key areas requiring reform

Area	Feature
Economic	Priority is given to developing a competitive high-tech industry, promoting exports under the DCFTA, improving the business climate, and attracting foreign investment. Structural reforms are required, particularly in the banking system, tax policy, and labour market regulation.
Social	Ensuring affordable and quality education, healthcare, and social protection. It is necessary to improve the social security system and ensure social inclusion.
Demographic	Ukraine is facing a demographic outflow and an ageing population. Sustainable development requires engaging young people, providing them with quality education and employment opportunities. It is necessary to develop family support policies and ensure access to housing and infrastructure for young families.
Political	One of the key aspects affecting Ukraine's path to EU membership is ensuring further strengthening of democratic institutions, the rule of law, independence of the judiciary, anti-corruption bodies, freedom of the media, and respect for human rights.

**Source:** compiled by the authors

It can be concluded that to achieve the status of an EU member state, Ukraine should focus on reforming its economic, social, demographic, and political sectors. It is necessary to improve the management system, engage expert support and take comprehensive measures to improve the situation in these areas. The implementation of these priorities will

contribute to the country's sustainable economic development and improve the quality of life of its citizens. Within the framework of this analysis, it is advisable to make a certain comparative characterisation of the Polish and Ukrainian experience of statehood formation since Poland is a territorial neighbour of Ukraine and a member of the EU (Table 2).

**Table 2.** Comparative analysis of the development of Poland and Ukraine in the context of the striving for integration and accession to the EU

Factors	Ukraine	Poland
Political stability	Instability and political turbulence	Stability and a consolidated political system
Corruption	High levels of corruption at all levels in all sectors	Significant efforts to combat corruption
Management system	High level of bureaucracy, with a much higher level of transparency	Building an effective management system
Systemic issues	Problems in the energy sector and the effectiveness of law enforcement and judicial bodies. Imperfect implementation of reforms or failure to complete reforms	System stability and efficiency
Russian aggression and the existence of military conflicts	Military aggression (since 2014), military, social, economic losses, and temporary occupation of the territories of the Autonomous Republic of Crimea, Donetsk, Zaporizhzhia, Luhansk, and Kherson regions	Absence of military conflicts (in recent decades) and membership in the North Atlantic Treaty Organisation as a guarantee of security

**Source:** compiled by the authors based on T. Gylfason *et al.* (2022)

The findings highlight the difference in the development of the two analysed countries, emphasising the existence of numerous problematic aspects in Ukrainian development. The results demonstrate that, on the way to integration into European society, it is crucial for Ukraine to carry out reforms in almost all areas. For in-depth analysis, a comparative characterisation with the Croatian experience of statehood and EU membership was conducted, as the experience of Croatia is significantly correlated with the experience of Ukraine (Jović, 2011). The decision to become an EU member was quite favourable for Croatia, as evidenced by the country's post-war development, reforms and time as an EU member state (Agreement on partnership..., 1998). The economic measures taken to stimulate growth and development in Croatia during the reconstruction process were analysed by D. Jović (2011), namely economic reforms aimed at improving the investment climate and ensuring the competitiveness of Croatian enterprises. Croatia has focused on reforms in key sectors such as tourism, agriculture, industry, and infrastructure. The country has attracted foreign investment, improved the business climate, and developed trade ties with other EU member states. This has helped to increase economic growth, create jobs, and improve the lives of the population. In addition, D. Jović (2011) examined political reforms, reforms of the judiciary, the fight against corruption and crime, which led to the improvement of Croatia's rankings in global anti-corruption indices (Corruption perception index-2022, 2022), implementation and adaptation to EU legislation, which included harmonisation of domestic legislation with EU rules and standards. In the area of political stability, Croatia has made significant strides in strengthening democratic institutions by ensuring freedom of speech and human rights.

Croatia has received support and assistance from its partners in its efforts to become an EU member. The EC (European Commission) and other EU institutions have been actively assisting Croatia in the process of reforms and fulfilment of the criteria for membership (Jović, 2011). Consultations, financial support, and experience exchange with other EU member states were provided, which helped to implement the necessary changes and solve problems. Thus, Croatia's reconstruction and EU membership were

interrelated processes. Croatia has been actively working to implement economic, political, and legal reforms, which allowed it to become a full member of the EU in 2013 (Šabić, 2019). The support of partners, specifically the EU, was a key factor in Croatia's success on the path to membership. The EU has provided financial and technical support, promoted reforms and provided expert support in various fields (Jović, 2011). More specifically, Croatia has received financial support from the Pre-Accession Funds Instrument and other EU programmes, which has helped to implement important projects and contributed to the country's growth (Šabić, 2019). In summary, Croatia's progress towards EU membership was made possible by consistent reforms and great efforts of the government and the population. As of 2023, Croatia continues to perceive positive benefits from integration. For instance, it has full access to the EU internal market, which supports trade growth and economic development, and receives financial support from European funds for the development of infrastructure, agriculture, and other sectors (Kržan & Birac, 2021). EU membership has provided Croatia with access to a wide range of opportunities, including economic development, increased investment, and improved living standards.

Ukraine's history on the way to becoming an EU member state began in 1994, when the Agreement on Partnership and Cooperation between Ukraine and the European Communities and their Member States (1994) was signed (which expired in 2017). The next step was the signing of the bilateral document The Agenda of the Ukraine-EU Association for the Preparation and Promotion of the Implementation of the Association Agreement (2009), which regulated relations and outlined the main requirements for Ukraine to become an EU member. In 2013, the Ukrainian authorities chose the path to European integration, but on 21 November 2013, the Verkhovna Rada of Ukraine did not accept any of the EU's requirements for signing the Association, which led to massive peaceful protests that eventually led to the ouster of the then government and President of Ukraine Viktor Yanukovich (Holovko, 2021). In the spring of 2014, Russia occupied a part of Ukrainian territories and started a military conflict in eastern Ukraine, which led to destructive processes in Ukraine and the freezing of the EU Association Agreement (Ukraine 2014-2015..., n.d.). It

was only in 2019 that the Constitution of Ukraine (1996) spelled out Ukraine's accession to the EU. After the start of the full-scale military invasion on 24 February 2022, Ukraine's application for EU membership was signed on 28 February 2022, and on 8 April 2022, Ukraine received the legislative questionnaire, the first part of which was completed on 17 April 2022 and the second part on 9 May 2022. On 23 June 2022, the European Council officially granted Ukraine the status of candidate for EU membership (Pryshchepa *et al.*, 2022).

The main requirements for Ukraine to achieve EU member state status include: combating money laundering; implementation of the anti-oligarchic law; reform of the Constitutional Court; continuation of judicial reform; anti-corruption, including the appointment of the head of the specialised anti-corruption prosecutor's office; harmonisation of audiovisual legislation with European legislation; and changes to legislation on national minorities (Sydorenko, 2022). The EC confirmed that Ukraine had

met only 2 requirements in full (The European Commission..., 2023). The EC believes that Ukraine should focus on amending the procedure for selecting judges to the Constitutional Court in line with the recommendations of the Venice Commission. Ukraine also needs to take further systemic measures and establish a track record in high-level corruption cases. The need to bring Ukraine's anti-money laundering legislation in line with international standards and the need to implement the recommendations of the Venice Commission on de-oligarchisation and national minorities (The European Commission..., 2023) were emphasised.

To assess the priority areas for improving and reforming Ukraine's economic and other sectors to accelerate its accession to the EU, a formula was developed that considers the weight of a range of factors. To assess the trajectories of reforms and development of the country, this study analysed the socio-economic indicators of Ukraine for 2018-2022 (Table 3).

**Table 3.** Analysis of Ukraine's socio-economic indicators for 2018-2022

Indicator	2018	2019	2020	2021	2022
GDP (billion USD)	130.8	153.8	155.6	200.9	142.4
Unemployment rate (%)	9.1	8.6	9.9	10.3	25
Inflation rate (%)	9.8	4.1	5	10	26.6
Average salary (UAH/month)	8,870	10,500	11,590	14,017	14,200
External debt (UAH billion)	1,397.2	1,159.2	1,518.9	1,560.2	2,610.9
Exports (billion USD)	47.3	50.1	49.2	65.9	44.4
Imports (billion USD)	57.2	60.8	53.7	69.9	75.2
Average life expectancy (years)	71.8	72.1	71.4	71.3	70.7
Retirement age (years)	60	60	60	60	60
Standard of living (index)	0.68	0.69	0.70	0.71	0.73
Population (million people)	42.4	42.2	41.9	41.6	36.2
Level of corruption (index)	32	30	33	32	33

**Note:** the table does not include data on the temporarily occupied territories of Ukraine

**Source:** compiled by the authors based on State Statistics Service of Ukraine (n.d.), Corruption perception index-2022 (2022)

The analysis of Ukraine's socio-economic indicators for 2018-2022 shows that there are challenges and a need for further reform and development of the country. The Razumkov Centre's Analytical Report describes the current state and prospects of Ukraine's accession to the EU membership (Pashkov *et al.*, 2022). The report analyses the reforms that Ukraine is implementing to meet EU standards and requirements. The report by M. Pashkov *et al.* (2022) addresses the following aspects. Economic integration. The study assesses the level of Ukraine's economic integration with the EU, including trade ties and investment flows. It analyses cooperation in the energy sector, customs cooperation, and the implementation of the DCFTA. The study concludes that Ukraine needs to improve its economic performance and establish better relations with its EU partner countries (Kryvenko, 2022). Political reforms. The report examines the political reforms undertaken by Ukraine to become an EU member. It analyses the state of democracy, human rights, the fight against corruption and judicial reform. Social changes. The authors of the report study the impact of European integration processes on the social sector of Ukraine. It analyses access to education and healthcare, employment rates, social support, and human rights

protection. The findings of the analytical report show that the country is showing positive dynamics in this area. Civil society. The report examines the role of civil society in Ukraine's European integration. It analyses the role of civil society organisations, citizen activism, and their impact on reforms. Future prospects. The report concludes with an assessment of Ukraine's future prospects on the path to the EU. The report examines the possibilities of expanding cooperation, the benefits and challenges that Ukraine may face.

The analytical report highlights the need to reform and improve many areas of Ukraine's performance to accelerate the country's EU membership in the near future (Pashkov *et al.*, 2022). Ukraine has enough problematic sectors that need to be carefully analysed to implement optimal measures in reforming them. Particular attention should be paid to Ukraine's economic integration into the EU, as it is the country's economic sector that is experiencing the greatest difficulties in post-war reconstruction (Bruszt & Campos, 2019; Endrődi-Kovács & Tankovsky, 2022). Political reforms are also a high priority, as they directly affect social change, the development of civil society, etc. (Pezdevšek Malovrh *et al.*, 2019; Efe & Yazici, 2022). The EU's support and cooperation is important, and victory and

restoration of peace are necessary for Ukraine's further progress towards membership (Petrov & Hillion, 2022). According to the results obtained, it is possible to assess the

priority areas for improving and reforming the economic, demographic, and political sectors of Ukraine in the post-war period (Table 4).

**Table 4.** Assessment of priority areas for improving and reforming Ukraine's economic, demographic, and political sectors

Factor	Value
Weighting factor for the economic sector	W1 = 0.3
Weighting factor for the demographic sector	W2 = 0.3
Weighting factor for the political sector	W3 = 0.4
GDP in 2022	V1 <sub>UA</sub> = \$142.4 billion
Average life expectancy of the population	V2 <sub>UA</sub> = 70.7 years
Corruption level (index) for 2022	V3 <sub>UA</sub> = 33
GDP in 2022	V1 <sub>DE</sub> = \$4072 billion
Average life expectancy of the population	V2 <sub>DE</sub> = 81.1 years
Corruption level (index) for 2022	V3 <sub>DE</sub> = 80

**Source:** compiled by the authors of this study based on State Statistics Service of Ukraine (n.d.), Corruption perception index-2022 (2022)

The assessment (coefficient) of Ukraine's level of development on the way to identifying priority areas of reform in the process of acquiring the EU member state status is as follows:

$$P = \left(0.3 * \left(\frac{142.4}{4072}\right)\right) + \left(0.3 * \left(\frac{70.7}{81.1}\right)\right) + \left(0.4 * \left(\frac{33}{80}\right)\right) = 0.435$$

The resulting coefficient of 0.435 (out of a possible 1.0) indicates the overall level of priority for improvement and reform in all the categories under consideration. From an economic standpoint, attention should be paid to the development of GDP, which grew in 2018-2022, although in 2022 there was a decline compared to 2021. In the demographic sector, it is important to pay attention to the population, which also declined during this period. This could cause considerable issues for the country's economic development, and therefore it would be advisable to develop government initiatives aimed at returning Ukrainians to Ukraine after the war. The level of corruption will remain at a similarly elevated level during 2018-2022, which requires further measures to combat this problem. Based on the results obtained, it is recommended that resources be allocated to economic sector development and political reforms, as they are of the highest importance. Work should continue to improve the country's demographic and social situation, which also play a vital role in accelerating the process of becoming a full EU member and affect the economy as a whole. However, as of 2023, it is almost impossible and ineffective to carry out quality reforms in these sectors due to active military aggression. That is why it is necessary to enlist the support of international partners in Ukraine's post-war reconstruction.

According to an assessment made during the European Parliament's plenary session on 17 June 2023, Ukraine needs the help and support of the European community and organisations in almost all areas (Joint Motion for..., 2023). During the full-scale war, Ukraine's GDP has more than halved, demographic indicators have declined significantly, many people have moved abroad, a certain number

are in a difficult situation in the temporarily occupied territories, critical infrastructure has been destroyed, and agricultural activities have almost ceased in the country (Joint Motion for..., 2023). According to a damage and needs assessment conducted by the Government of Ukraine, the World Bank Group, the European Commission, and the United Nations, published on 23 March 2023 (Joint Motion for..., 2023), the estimated cost of reconstruction and recovery in Ukraine has risen to at least €383 billion. The international community and partner states have a clear vector of comprehensive support for Ukraine, e.g., the European Commission has decided to allocate €50 billion to replenish Ukraine's long-term budget as part of financial assistance (€50 billion..., 2023), and call on Ukraine to prioritise strengthening the rule of law, continuing judicial reform and fighting corruption, as progress in these areas will determine not only its progress on the European path, but the success of its reconstruction and recovery. According to the authors, it is necessary to consider the issues, needs and experiences of internally displaced persons and refugees, as their reintegration into local communities will be crucial for strengthening Ukraine's economic, social and institutional resilience and unity.

## ■ DISCUSSION

The issue of identifying priority areas for Ukraine's reconstruction in the context of its preparation for EU membership requires careful research and analysis. Due to the active process of Ukraine's European integration and the need to prioritise post-war reconstruction in preparation for EU membership, there is a growing interest in research in this area among academics. Within the framework of the analysis of the current issue, both Ukrainian and other scholarly works have been published to study the requirements for EU candidate countries and Ukraine's potential to achieve EU membership.

A study by German scholar A. Sapir (2022) highlights that Ukraine is already taking active steps in line with European standards. The author analyses the current state of Ukraine's European course and the challenges that Ukraine

will face on its way to joining the EU. He emphasises the need to prioritise post-war reconstruction to prepare the country for EU membership. The author argues that economic reform, fighting corruption and improving the legal system are the main priorities that Ukraine should consider, which correlates with the results of this study and confirms the need to reform many areas of Ukraine, including the economic and legal systems. The importance of reforms in Ukraine is a prerequisite for achieving successful EU integration. This analysis shows that successful post-war reconstruction cannot be limited to economic and political aspects alone. Social reconstruction of the country plays a significant role, as all aspects are interconnected. Improving the quality of education, healthcare, and social protection is an integral part of Ukraine's successful integration into the EU. The development of regional infrastructure and access to services for all segments of the population should also be considered (Erfan & Korol, 2017).

The study by Y. He (2022) notes that social reconstruction is one of the crucial areas of development for Ukraine. The author examines how Ukraine assimilates and uses social norms, standards and rules in its integration practice, and how these factors influence the country's development. The author analyses the processes of social reforms taking place in Ukraine and considers how this process affects its political, economic, and social spheres. These results are also in line with the study, which confirms the importance of social reconstruction. However, according to the authors, social reconstruction and reforms should not be the top-priority for Ukraine's post-war reconstruction, which partially contradicts Y. He (2022). The results of the study demonstrate that the priority area of Ukraine's development and reconstruction will be based on the restoration of the country's economy and achievement of economic stability in the first place, as well as on the reform of the political system. In the area of economic stability, Ukraine should focus on reducing inflation, developing entrepreneurship, and privatising state-owned enterprises. Achieving economic stability will help attract foreign investors and ensure Ukraine's competitiveness in the European market. It is necessary to continue reforming the legal system, fighting corruption, and improving democracy. This will become the foundation for strengthening democratic institutions and the rule of law in Ukraine, which are crucial factors for successful integration into the European political space. The study proved that without improving economic and political processes in the country, it will be impossible to achieve social reconstruction.

T.V. Oriekhova (2022) focuses on Ukraine's economic prospects in the context of preparations for EU accession. The author emphasises the importance of stimulating economic growth and attracting foreign investors. This approach is more consistent and coincides with the results of the study. However, this study has shown that although economic and political reforms are among the top priorities for Ukraine's reconstruction in the context of the country's integration into the European space and its achievement of EU membership, one should not forget about the need to comprehensively improve the country's performance in all areas of activity. The study by V. Berch (2022) highlights the key challenges faced by Ukraine's judiciary in the context of its European integration. The author

emphasises the need to address these issues to achieve compliance with European standards and requirements. One of the key issues identified in the study is corruption in the judiciary. The author notes that corruption seriously undermines trust in the judiciary and violates the principles of justice and equality before the law. To fight corruption, V. Berch (2022) proposes the introduction of effective control mechanisms, ensuring the independence of the judiciary and improving its professional competence. The author emphasises the need for comprehensive reforms in the judicial system of Ukraine to adapt it to European standards and norms. The results of the study also confirm the need to reform the judicial system of Ukraine. These reforms will be a major step towards Ukraine's accession to the EU and will help improve the judicial system and ensure the rule of law in the country.

According to O. Kvasha & A. Syniakova (2019) one of the key aspects of Ukraine's successful integration into the EU is the development of infrastructure and energy efficiency. The development of transport, energy, and digital infrastructure is a prerequisite for Ukraine's competitiveness in the European market. It is worth concurring with these researchers, as attracting foreign investment and cooperation with international partners in infrastructure projects are essential elements of the country's development. Furthermore, expanding international cooperation is of immense importance to Ukraine (Smoliy *et al.*, 2021; Vasylychak *et al.*, 2023). Strengthening diplomatic, economic, and cultural ties with other countries will help develop Ukraine's foreign economic activity, and attractiveness to foreign investors. Continued support and assistance from international partners is essential to the success of Ukraine's reconstruction. Notably, without victory, recovery and reconstruction will be impossible. The issue of membership of some EU candidate countries in the context of military conflict, including Ukraine, is considered in the study by D. Cenusa (2022). The author addresses the complexity of the integration process in such conditions and the possible obstacles that countries face. This study also highlights the need to resolve conflicts and ensure stability in the region for a successful path to EU membership.

The data obtained as a result of the analysis confirm that Ukraine is actively moving towards compliance with European norms and standards to obtain the status of an EU member state. It is established that Ukraine is carrying out large-scale reforms aimed at economic, political, and social modernisation of the country. These measures are aimed at ensuring Ukraine's successful integration into the European space and accelerating the country's accession to the EU. The analysed studies are important for understanding the current state and prospects of Ukraine's European integration and provide a valuable contribution to the formation of strategies for the country's development on the path to EU membership. The research discussion demonstrates that the process of setting priorities for Ukraine's post-war reconstruction, in the lead up to its EU membership preparation, is a challenging task. Considering economic, social, and other factors requires a comprehensive and balanced approach. It is essential to consider the best practices and experience of EU member states, but it is also necessary to preserve Ukrainian identity and uniqueness of national reconstruction.

## ■ CONCLUSIONS

Ukraine is taking active steps in line with European norms and standards to obtain the status of an EU member state. Within the framework of this movement, Ukraine is actively pursuing reforms aimed at economic, political, and social modernisation. It was found that to achieve successful integration into the EU, the priority areas of reconstruction are economic reforms, specifically in the areas of economic stability, inflation reduction, entrepreneurship development, and privatisation of state-owned enterprises, the legal system, fighting corruption, and increasing the level of democracy. The resulting coefficient indicates the overall degree of importance of improving and reforming all the areas considered in the survey. Ukraine should focus on stimulating economic growth in the post-war period: conducting economic reforms; attracting investment and creating a favourable investment climate; developing and restoring infrastructure; supporting entrepreneurship; developing trade relations, taking part in international trade, etc.

Infrastructure development, energy efficiency, and expanding international cooperation are vital aspects of ensuring Ukraine's competitiveness in the European

market. For social reconstruction, attention should be paid to improving the quality of education, healthcare, and social protection. It is essential to ensure the development of regional infrastructure. Based on the study's findings, it can be concluded that setting priorities for Ukraine's post-war reconstruction in preparation for EU membership requires a comprehensive approach and the involvement of various sectors of society. Implementation of these priorities will help strengthen the economy, improve the quality of life of citizens, and ensure sustainable economic development of Ukraine. Removing barriers to trade and investment, promoting foreign economic activity, and making Ukraine more attractive to foreign investors are also high priorities. Future research could focus on the effectiveness of the reforms, assessing their impact on the country's economy and social sector, and analysing Ukraine's current progress in line with European standards.

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## ■ CONFLICT OF INTEREST

None.

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### **Катерина Андріївна Лещенко**

Кандидат економічних наук, доцент  
Київський національний економічний університет імені Вадима Гетьмана  
03057, просп. Перемоги, 54/1, м. Київ, Україна  
<https://orcid.org/0000-0001-8467-5141>

### **Сергій Володимирович Лещенко**

Кандидат політичних наук  
ГО «Центр нових рішень»  
01015, вул. Лаврська, 16, м. Київ, Україна  
<https://orcid.org/0009-0000-1928-251X>

## **Визначення пріоритетів післявоєнної відбудови України в умовах підготовки до членства в ЄС**

■ **Анотація.** Визначення пріоритетів післявоєнної відбудови України в умовах підготовки до членства в Європейському Союзі полягає в необхідності забезпечення інтеграції, ефективного використання ресурсів, соціально-економічного зростання та сталого розвитку країни. Знаходження шляхів ефективного розвитку економічного та інших секторів, адаптації до європейських норм та створенні стійких засад для інтеграції в європейський простір було метою цього дослідження. Методологія побудована на використанні емпіричного методу дослідження. Коефіцієнт пріоритетності реформування вираховано за допомогою створеної формули визначення пріоритетних напрямків вдосконалення економічних, демографічних та політичних секторів України. Визначено пріоритетні напрямки розвитку України в післявоєнний час, враховуючи такі механізми, як забезпечення сталого економічного зростання, модернізація інфраструктури, розвиток торговельних зв'язків із країнами ЄС, підтримка інновацій та підприємництва, покращення якості освіти та здоров'я, які можуть бути використані науковцями та державою для забезпечення ефективного розвитку країни й отримання статусу повноправного члена ЄС. Визначена важливість забезпечення соціального захисту населення, включно з підвищенням рівня життя, забезпеченням доступу до основних соціальних послуг. Дослідження виявило, що ефективна економічна дипломатія та розширення міжнародних відносин із державами-членами ЄС є важливими факторами для успішної підготовки України до членства в ЄС. Акцентовано на забезпеченні стратегічної орієнтації, ефективному використанні ресурсів та досягненні соціально-економічного розвитку країни відповідно до європейських стандартів та цінностей. На практиці ці результати можуть стати основою для розробки стратегічних рішень та програм відповідно до критеріїв ЄС

■ **Ключові слова:** міжнародна економіка; міжнародні відносини; економічне реформування; європейська інтеграція; соціально-економічні показники

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## Darya Butenko\*

PhD in Economics, Associate Professor  
Simon Kuznets Kharkiv National University of Economics  
61166, 9A Nauka Ave., Kharkiv, Ukraine  
<https://orcid.org/0000-0001-7027-7767>

## Kateryna Zaslavska

PhD in Economics, Associate Professor  
Simon Kuznets Kharkiv National University of Economics  
61166, 9A Nauka Ave., Kharkiv, Ukraine  
<https://orcid.org/0000-0002-1323-6325>

## Yuliana Sheianova

PhD Candidate  
Simon Kuznets Kharkiv National University of Economics  
61166, 9A Nauka Ave., Kharkiv, Ukraine  
<https://orcid.org/0000-0003-1461-6247>

## Scientific and methodological principles of organizational capital management and its assessment

■ **Abstract.** The transition from the concept of Industry 4.0 to the concept of Society 5.0 requires investments, the application of the latest knowledge and the ability to use them effectively. Therefore, the achievements of technological and digital industries, which were obtained by Industry 4.0, do not lose their value, but, on the contrary, are relevant. This is precisely what determines the purpose of the research – substantiating the system of managing the organizational capital of business entities and the mechanism for assessing its effectiveness. During the research, such methods as theoretical generalization, abstract-logical method, methods of analysis and synthesis, graphic method were applied. The main results of the work include the developed organizational capital management system, which, unlike the existing ones, includes the process of transforming human capital into commercialized results (intangible assets) of the enterprise. Also, an achievement is the comprehensive assessment of organizational capital presented in the work, which includes three levels of analysis: macro level, meso level and micro level. The article specifies the definition of the concept of “the system of organizational capital management”, by which the authors understand the process of transformation of human capital into commercialized results through the formation of organizational capital on the basis of an innovative approach with the help of certain management principles and technologies. The composition of the main elements of organizational capital is clarified and the stages of its formation, from creation to futurization, are defined. A system of indicators for assessing the organizational capital of the enterprise has been developed, which is based on the principles of complexity, conciseness, accessibility, systematicity and logic. The practical significance of the results lies in their application as a basis for making managerial decisions. The developed recommendations can be used by entrepreneurs and senior managers to identify the strengths and weaknesses of their organizational capital and identify opportunities to improve the efficiency of resource use

■ **Keywords:** human resource; object of intellectual property; management system; commercialized results; intangible resources

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\*Corresponding author



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## ■ INTRODUCTION

In the conditions of the European integration of Ukraine and the transition of the world to the new concept of Society 5.0, there was an urgent need to increase the level of competitiveness of enterprises due to the transition to new guidelines – human-oriented approach in combination with a high level of development of digital technologies. Most researchers, such as A.G. Pereira *et al.* (2020) and V. Potočan *et al.* (2021) consider Industry 4.0 related to the global digitalization of society, which requires changes in the management of human resources, the formation of digital competencies and adaptability to the digital environment. Considering the importance of human orientation, sustainability and strength, in the concept of Society 5.0, it is proposed to complement the existing Industry 4.0 to better meet industrial and technological goals without compromising socio-economic and environmental indicators (Xu *et al.*, 2021). At that time, the concept of Society 5.0 is reduced primarily to human interaction with modern intelligent digital technologies, which leads to the prioritization of human needs (Breque *et al.*, 2021). The scientists call 2015 the beginning of the transition from the concept of Industry 4.0 to the concept of Society 5.0 (Deguchi *et al.*, 2020). It can be assumed that the processes of transformation of human capital into commercialized results – organizational capital (intellectual property objects, know-how, licenses, patents, etc.), can ensure the availability of the specified resources necessary for the transition to the concept of Society 5.0.

S. Ilyashenko *et al.* (2021) described that this process requires the involvement of highly skilled personnel and effective management that will create the means and tools to stay on course. I. Mykolaichuk & N. Sychova (2018) claimed that organizational capital is the main source of the necessary resources. Since the concept of organizational capital began to be used in everyday use relatively recently – at the end of the 90s of the 20<sup>th</sup> century, many theoretical and practical aspects of its use remain undeveloped. One of the key problems left without due attention is the development of a system for managing the organizational capital of business entities and a mechanism for assessing its effectiveness. Y. Kuzkin *et al.* (2019) discussed the concept of “organizational capital management”. The theoretical generalization of the existing points of view made it possible to establish that, firstly, the goal of organizational capital management is to increase the efficiency of the enterprise functioning in order to obtain the greatest economic benefit. Secondly, the organizational capital management is a controlled process of implementing changes in the creation of patents, licenses, know-how, trademarks, industrial designs, etc. and the development of a system of motivation for creative work, which will contribute to the achievement of the economic goals set by the enterprise. O. Stryzhak *et al.* (2022) wrote about the importance of human capital development in the era of transition from industrial society to social society. The given approach showed that the formation and effective use of organizational capital will provide the necessary resources for investing in human capital. The purpose of the article was to substantiate the system of managing the organizational capital of business entities and the mechanism for assessing its effectiveness.

General scientific research methods were used in the work. With the help of theoretical generalization, the essence of the concept of “organizational capital” was outlined. The abstract-logical method was used to form a conclusion. Analysis and synthesis were used to reveal the concept of “organizational capital management”: the analysis made it possible to single out individual characteristics of the concept of “organizational capital management”, and the synthesis combined these characteristics into a whole. A graphic method was used to display the research results.

## ■ ANALYSIS OF PREVIOUS RESEARCH ON THE TOPIC

According to N. Fu *et al.* (2016), organizational capital is the knowledge embedded in an organization through organizational databases, processes, and culture, enabling the transfer of knowledge between individuals and groups within the organization. The authors suggest that organizational capital enhances the effect of simultaneous research and knowledge utilization on firm performance. In turn, S. Ilyashenko *et al.* (2022b) attribute organizational capital to the structure of the enterprise intellectual capital and identify it with the concept of “structural capital”. They also include human (personal) capital and consumer (interface) capital as part of intellectual capital. A similar point of view is held by N. Nechyporuk & M. Mammetdurdyev (2021) who presented a structural model of intellectual capital, which includes: human capital, organizational capital, informational capital, objects of intellectual property, reputational (social) capital and artificial intelligence. L. Lipych *et al.* (2019b) consider intellectual property as an element of organizational capital, draw attention to the importance of the role of protection of research and development works, as well as other innovative solutions of the enterprise.

The work of O. Chuprina & K. Chuprin (2013) presents a system for assessing organizational capital. The authors note that organizational capital can be assessed by applying a set of indicators. Organizational capital is an element of human capital. The authors reveal the meaning of the concept of organizational capital and list the composition of its elements, which include technologies, research and development (R&D), management systems, technical and software, organizational structure, organizational culture, know-how, documents that secure intellectual property rights. At the same time, N. Gavkalova & T. Vlasenko (2016) consider organizational capital as a subsystem of human capital and, having analysed approaches to determining the components of organizational capital, singled out the following elements: intellectual property objects, electronic networks and information systems, organizational and management subsystems, client capital. In the work by K. Nemashkalo *et al.* (2019) organizational capital is also considered as an element of human capital. They focus their attention on the importance of the investment component in the process of developing the enterprise personnel. Thus, financing the results of the intellectual activity of employees ensures the sustainable development of business entities in the future (Tanklevska *et al.*, 2023; Vdovenko *et al.*, 2023). Organizational capital, unlike

human capital, remains in the organization even if employees are fired. This can be explained by the fact that organizational capital is the result of human activity (patents, know-how, etc.) and is an intangible property of the organization.

In turn, S. Ilyashenko *et al.* (2022a) emphasize that organizational capital is an enterprise resource that promotes innovation. The study states that the components of organizational capital management include the organizational structure of management; innovative culture; hardware and software and information support; objects of intellectual property that can be commercialized directly or be the basis of commercially attractive innovative developments, etc. According to the authors, effective management of organizational capital guarantees the creation of a flexible, adaptive organizational structure and increases the innovativeness of the organization. I. Zhuravlyova (2013b) noted aspects of organizational capital management in business. However, they are mostly devoted to the relationship between organizational capital and intellectual capital, its elements, management goals and role in the development of business structures.

Distinguishing the phases of the organizational capital formation process is a characteristic feature of the approach proposed by L. Edvinsson & M. Malone (1997). The stages of organizational capital formation include the following phases: goal setting (the organization's mission is determined taking into account the characteristics and level of organizational capital development); measurement (implementation of an effective system of assessment and control of activity results); management (transition to a new management system focused on knowledge and innovation); technological development of R&D and knowledge exchange); capitalization (use of organizational capital for profit); futurization (orientation and constant implementation of innovations and mastering of new methods and technologies). According to N. Beltramo *et al.* (2020) the framework dedicated to the strategic assessment of organizational capital can be used in the analysis of other types of intellectual capital, such as human capital, technological capital, business capital or social capital. It provides a certain road map in the study of relations between elements and sets of elements to which intellectual capital will correspond.

## ■ THEORETICAL FOUNDATIONS OF ORGANIZATIONAL CAPITAL MANAGEMENT

Organizational capital is a set of knowledge, skills, experience, technologies and other resources that are used in the organization to achieve its goals and tasks. The management of organizational capital is of crucial importance for the effectiveness of the organization's functioning and its competitiveness. Organizational capital forms intangible assets for the enterprise, which are created with the help of existing human capital and can in the future bring profit (due to direct commercialization) or become the basis of commercially attractive innovations. In confirmation, according to the statistical data published by the World Bank (2021), about 76% of the national wealth of the USA

is human capital, and according to data from the World Trade Organization (2021) – 70%. Calculation methodologies have their own composition of national wealth assessment indicators, and different results are obtained. That is why it is advisable to consider organizational capital as an intangible resource of entrepreneurs, which requires an effective management system based on certain principles with the help of modern innovative technologies. The analysis of scientific literature made it possible to establish the main directions of organizational capital management.

Development of organizational capital management strategy. In order to develop a strategy for managing organizational capital, you need to understand what capital the company already has, what its level is, and what its potential for development is. It is important to analyse the following components of organizational capital: people, processes, technologies and knowledge (Lipych *et al.*, 2019b). It is necessary to determine what goals the company has and what requirements must be met in order to achieve these goals. These goals must be aligned with the business strategy. Based on the strategic objectives, it is necessary to identify the key priorities that must be answered in order to achieve the strategic objectives. These priorities may include increasing the level of competences of employees, optimizing processes, introducing new technologies and developing knowledge. After defining the key priorities, it is necessary to appoint leaders and define responsibility for each of the priorities. Each executor should be responsible for the corresponding priority and have clear tasks and goals. It is also important to define success criteria and control points to ensure the effectiveness of the strategy. Appropriate resources such as financial, human, technological and other are necessary for the successful implementation of the organizational capital management strategy. It is also important to make adjustments to the strategy if the situation in the company changes.

Development of the organizational capital assessment system. The system for assessing organizational capital should include both quantitative and qualitative indicators reflecting various aspects of the organization's functioning (Hudz & Pryadka, 2021). Analysis of the current state of organizational capital allows to identify the strengths and weaknesses of the organization, which allows for the development of an effective strategy for the management of organizational capital (Olkhova *et al.*, 2021). Development of recommendations for increasing the efficiency of the use of organizational capital. Recommendations should include practical steps to be taken to achieve the goal of managing organizational capital, and also be realistic, specific and contain clearly defined deadlines for each step (Kolomiets, 2021). It is expedient to determine the process of forming organizational capital in the management system, which is an important component of the management system, since organizational capital is the basis for achieving the company's strategic goals, as mentioned earlier (Fig. 1).

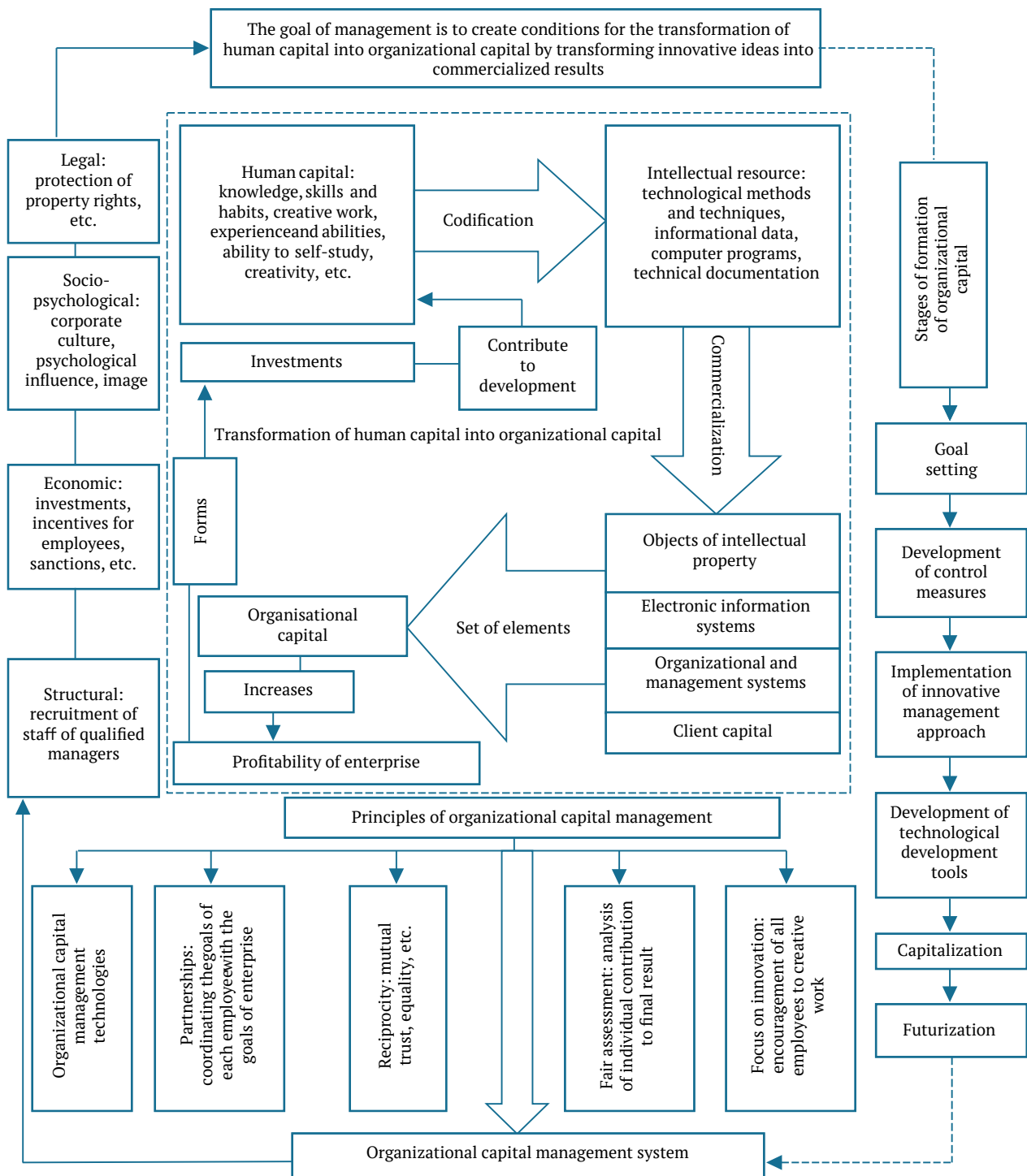


Figure 1. System of organizational capital management

Source: developed by the authors

For the formation of organizational capital, it is necessary to determine the key elements creating organizational capital. Human capital is the knowledge, skills and experience of the company's employees, which are the company's most valuable assets (Zhuravlyova, 2013a). For the

formation of human capital, it is necessary to carry out measures to improve the qualifications of employees and stimulate creative thinking, as well as to ensure the creation of an internal environment that promotes development and cooperation in the team. Social capital is a

company's relations and connections with its partners, customers and employees. It occupies a separate place in the management system, has an unconditional influence on the formation of organizational capital, but this influence is rather difficult to assess. To form social capital, it is necessary to develop trust, mutual respect and cooperation with partners and clients. Investment capital is the company's monetary resources that are used to achieve strategic goals. An organization's technological capital includes hardware, software and other technical resources that help increase productivity and work efficiency. Investing in the development of technological capital can help an organization improve production processes, reduce resource costs and improve the quality of products or services. For example, introduction of new technologies, replacement of outdated equipment, improvement of software and other activities can help increase an organization's technological capital. Therefore, the formation of organizational capital occurs as a process of transformation of human capital into material resources (financial results) under the influence of social factors with the help of technological capital.

## ■ ASSESSMENT OF ORGANIZATIONAL CAPITAL

Organizational capital is an intangible asset that continuously creates value through above-normal revenue growth, innovation, operational excellence and relations with the parties concerned. According to S. Miles & M. Clieaf (2016), the nature of organizational capital stems from competing views of how it can be assessed and managed. D.M. Marchiori *et al.* (2022) identified existing relations between human capital, information technologies, their capabilities, innovativeness and organizational effectiveness. An essential element of organizational capital management is the issue of its assessment B. Lev *et al.* (2016), M. Iorgachova & O. Kovalova (2023). It is important to understand that such an assessment can be carried out at different levels: macro level, meso level, micro level. The assessment of organizational capital at the macro level is carried out based on the results of the analysis of the country's place in international ratings: the competitiveness rating, development of human potential, the level of scientific research activity of the innovative component. According to Z. Liepé (2012), in the process of assessing organizational capital at the macro level, it is necessary to carefully select and use more aggregated criteria and indicators that reflect the socio-economic factors of the external environment in the country and influence the formation of human capital.

It is advisable to assess the organizational capital at the meso level based on the data of dynamic and structural changes in statistical information (at the level of the country, industry, region), namely: the share of innovatively

active enterprises, the costs of carrying out scientific research and development, the number of employees involved in scientific research and development, by categories of personnel, training of scientific personnel (number of scientific institutions and institutions of higher education that have postgraduate or doctoral programmes; number of postgraduates and doctoral students, number of patents, know-how, etc.). Assessment of organizational capital of the enterprise (micro level) requires research and development of its main criteria. Firms' investments in organizational capital, according to M.M. Hasan & A. Cheung (2018), allow them to develop their resource base and thus advance to favourable stages of the life cycle (stages of growth and maturity). Assessment of organizational capital, according to (Fiala & Borůvková, 2012; Hrebnyk *et al.*, 2023), will allow managers to assess the return on investment in building this resource, such as information technology (IT) and brand enhancement. In particular, linking IT spending or brand improvement spending to changes in organizational capital will indicate the return on that investment and guide the overall allocation of resources.

Taking the existing views of O. Chuprina & K. Chuprin (2013), N. Gavkalova & J. Vasylenko (2018), S. Ilyashenko *et al.* (2022a) as a basis, it can be concluded that the opinions of scientists differ in the composition of indicators in the system of assessing organizational capital. It is advisable to develop recommendations for conducting a comprehensive assessment, which will include quantitative and qualitative analysis. Quantitative analysis is an assessment of the current state of the organizational capital that the enterprise has. It is carried out according to a specific composition of indicators that directly characterize the organizational capital. The composition of indicators for quantitative analysis is carried out on the basis of a study of existing approaches to the assessment of organizational capital. Qualitative analysis is a theoretically based analysis of indicators that affect organizational capital, but cannot be expressed in quantitative terms. In order to implement it, it is necessary to involve experts and conduct an assessment using the survey method. At the same time, it is expedient to coordinate the opinions of experts with the help of mathematical tools in order to obtain more accurate results. Theoretical generalization of existing approaches and consideration of the developed management system (Fig. 1) made it possible to establish that it is advisable to assess organizational capital by its main components. At the same time, the selection of assessment indicators should be carried out in accordance with the following principles (Table 1).

The composition of indicators for the assessment of enterprise organizational capital is given in Table 2. A comprehensive assessment of organizational capital can be presented as a sequence of the following stages (Fig. 2).

**Table 1.** Existing principles of selecting indicators for assessing organizational capital

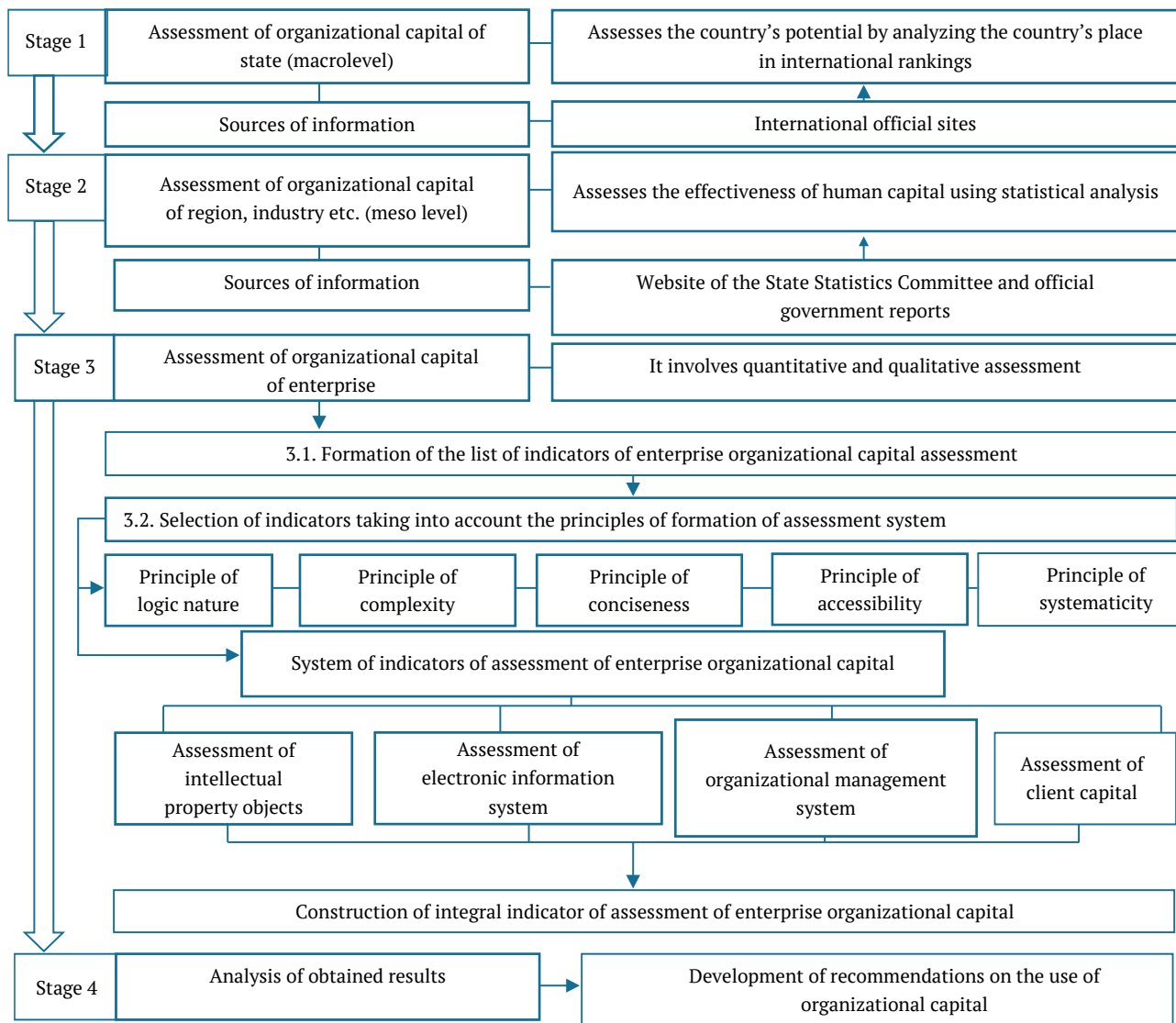
Principle	Content
Logic nature	Taking into account the elements of organizational capital when building a system of indicators for its assessment (objects of intellectual property; electronic information system; organizational and management system; client capital).
Complexity	Taking into account in the system of assessment of organizational capital of all indicators that directly characterize it.
Conciseness	Number of selected indicators should be optimal.
Accessibility	Information for calculating indicators should be available and understandable for the expert who performs the assessment.
Systematicity	Calculation of indicators should be simple to ensure the ability to conduct an assessment in a short period of time.

**Source:** developed by the authors

**Table 2.** System of indicators for assessing enterprise organizational capital

Components of organizational capital	Relative indicators	Absolute indicators
Intellectual property objects	Share of intangible assets in the total amount of assets	Number of documents received during the year certifying rights to intellectual property objects
	Profitability of intangible assets	Amount of profit from documents received during the year certifying rights to intellectual property objects
	Scientific empowerment of labour	Cost of patents received during the year
	Share of products produced on the basis of innovations	Number of applications for inventions
Assessment of electronic information system	Coefficient of updating information support of activity	Costs for computer equipment, Internet, software, etc.
	Index of updating technological base	Costs for improving intra-corporate information systems
Organizational and management systems	Cost effectiveness coefficient for management	Costs for creative personnel
	Labour productivity of managers	Costs for development of organization's corporate culture
	Personnel turnover ratio	Volume of investments in management improvement
Customer capital	Share of products manufactured using trademarks	Profit from trademark or brand
	Share of products manufactured using own brand	Costs for forming a positive image
	Share of positive reviews from consumers	Number of repeated appeals by consumers

**Source:** developed by the authors based on O. Chuprina & K. Chuprin (2013), L. Lipysh *et al.* (2019a)



**Figure 2.** Stages of comprehensive assessment of organizational capital

**Source:** developed by the authors based on O. Chuprina & K. Chuprin (2013), V. Stadnyk (2018)

According to Figure 2, the development of recommendations for increasing the efficiency of the use of organizational capital for each stage of the analysis is provided. Depending on the results of the existing level of organizational capital, recommendations can be divided into groups (directions) (Table 3).

In addition, organizations can conduct various research and surveys of their customers and stakeholders, which allow them to obtain valuable information about their needs and expectations. This allows them to more precisely adjust their products and services to the needs of their customers and ensure their high quality and satisfaction. An important aspect of strengthening interaction with customers and stakeholders is maintaining mutually beneficial relationships and partnerships with your customers and other stakeholders. Organizations can involve them in joint projects, consulting and ex-

change of experience to create a favourable atmosphere of cooperation and partnership. Such partnerships can be an important source of innovation and improvement that will help the organization grow and meet the needs of its customers and stakeholders. The proposed approach is quite flexible and may vary depending on the purpose of the assessment and the subject of the study. If necessary, the composition of the indicators can change, for example, in the absence of the necessary information for a specific object of research or the need to take into account the specifics of the enterprise's activities, etc. If there is a need and opportunity (time, funds, etc.), the person performing the assessment (manager, entrepreneur, scientist) can include in the components of the integral indicator quality indicators that are formed according to the data received from specialists in a certain field by conducting an expert assessment.

**Table 3.** Possible directions for increasing the efficiency of the use of organizational capital

Direction	Content of recommendation
Developing and strengthening organizational culture	Can be achieved by establishing specific values and norms that reflect the organization's mission and strategy. Key elements of culture such as leadership, communication and collaboration must be developed and maintained at all levels of the organization.
Provision of staff training and development	Can be implemented through investment by organizations in training and development of their staff to ensure high skills and ability to adapt to changing market conditions.
Strengthening of interaction with customers and stakeholders	Organizations should be aimed at meeting the needs and expectations of their customers and stakeholders. This can be achieved by establishing an effective feedback system and interaction with customers. Various communication channels can be used for this, such as a phone, e-mail, social networks, online chats and others.
Strengthening of innovative activity	Can be implemented through investment of organizations in research and development of new products and services that meet the needs and expectations of the market.
Strengthening of efficiency of management and use of resources	Organizations must be able to effectively use their resources, such as financial, human, material and intellectual resources.

**Source:** developed by the authors

## ■ CONCLUSIONS

The analysis of literary sources made it possible to clarify the definition of the concept of “organizational capital management system” and the structure of its components. The formation of organizational capital is studied in stages. The application of the system of indicators for assessing the organizational capital of the enterprise is substantiated based on the principles of complexity, conciseness, accessibility, systematicity, logic nature and the definition of specifics by management levels. The complexity and multifaceted nature of the concept of organizational capital management requires clarification and development of its main criteria, which are necessary for the creation of a comprehensive methodology for its assessment. The assessment of organizational capital, as the final stage of the management process, provides answers to key questions regarding various data, the availability of which depends on the thoroughness of the work of the manager focused on commercial effect in the organization. The comprehensive assessment of organizational capital, developed in the work, includes a system of indicators for the assessment of organizational capital, the stages of an integrated assessment of organizational capital and a management system of organizational capital, can provide managers and top managers with information on the current state of use of organizational capital. Following the recommendations of the assessment, managers should take into account the specifics of the industry, the range and type of products (services), the size of the enterprise, the composition of employees, etc.

It is pertinent to consider potential ways of increasing the efficiency of the use of organizational capital.

Strengthening organizational culture can help improve the efficiency of using organizational capital. A culture that supports innovation, collaboration and development can help attract talented employees, improve communication and contribute to organizational success. It is expedient to provide training and development of personnel through trainings, internal training, leadership training programs and other professional development activities that will help employees become more productive and efficient in their work. Strengthening interaction with customers and stakeholders can be achieved by building an effective feedback system. Organizations can create communication channels with their customers that allow them to express their wishes and suggestions, receive answers to their questions and complaints.

The directions of further research should include the development of practical tools for assessing organizational capital based on the developed comprehensive assessment. These can be methods and approaches for assessing various aspects of organizational capital, such as human capital, intellectual property, structural capital, etc. It is advisable to study the issue of developing organizational capital management models taking into account the specifics of various industries and enterprise sizes. This will allow enterprises to use the organizational capital management system more effectively and adapt it to their needs.

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### Дар'я Сергіївна Бутенко

Кандидат економічних наук, доцент  
Харківський національний економічний університет імені Семена Кузнеця  
61166, просп. Науки, 9А, м. Харків, Україна  
<https://orcid.org/0000-0001-7027-7767>

### Катерина Анатоліївна Заславська

Кандидат економічних наук, доцент  
Харківський національний економічний університет імені Семена Кузнеця  
61166, просп. Науки, 9А, м. Харків, Україна  
<https://orcid.org/0000-0002-1323-6325>

### Юліана Дмитрівна Шеянова

Здобувач доктора філософії  
Харківський національний економічний університет імені Семена Кузнеця  
61166, просп. Науки, 9А, м. Харків, Україна  
<https://orcid.org/0000-0003-1461-6247>

## Науково-методичні засади управління організаційним капіталом та його оцінки

■ **Анотація.** Перехід від концепції Індустрія 4.0 до концепції Суспільство 5.0 вимагає інвестицій, застосування новітніх знань та можливостей їх ефективного використання. Тому досягнення технологічних та цифрових галузей, що були здобуті Індустрією 4.0, не втрачають своєї цінності, а, навпаки, є актуальними. Саме цим обумовлена мета дослідження – обґрунтування системи управління організаційним капіталом суб'єктів підприємництва та механізму здійснення оцінки його ефективності. Під час дослідження було застосовано такі методи, як теоретичне узагальнення, абстрактно-логічний метод, методи аналізу та синтезу, графічний метод. До основних результатів роботи можна віднести розроблену систему управління організаційним капіталом, що на відміну від існуючих включає процес трансформації людського капіталу в комерціалізовані результати (нематеріальні активи) підприємства. Також досягненням є представлена в роботі комплексна оцінка організаційного капіталу, що включає три рівні аналізу: макrorівень, мезорівень та мікрорівень. В статті уточнено визначення поняття «система управління організаційним капіталом», під яким автори розуміють процес трансформації людського капіталу в комерціалізовані результати шляхом формування організаційного капіталу на засадах інноваційного підходу за допомогою певних принципів й технологій управління. Уточнено склад основних елементів організаційного капіталу та визначено етапи його формування, від створення до футуризації. Розроблено систему показників оцінки організаційного капіталу підприємства, яка ґрунтується на принципах комплексності, лаконічності, доступності, системності та логічності. Практичне значення результатів полягає в застосуванні їх як основи при прийнятті управлінських рішень. Розроблені рекомендації можуть бути використані підприємцями та менеджерами вищої ланки для виявлення сильних та слабких сторін свого організаційного капіталу та виявлення можливостей для підвищення ефективності використання ресурсів

■ **Ключові слова:** людський ресурс; об'єкт інтелектуальної власності; система управління; комерціалізовані результати; нематеріальні ресурси

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

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