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COORDINATION OF FISCAL AND MONETARY POLICY IN UKRAINE

In the conditions of uncertainty and economic instability, the issue of researching approaches to strengthening the coordination of fiscal and monetary policy is becoming relevant. The aim of the research is to justify directions for strengthening the coordination of fiscal and monetary policy of Ukraine. It is hypothesized that the level of fiscal and monetary policy coordination determines the country's ability to ensure macroeconomic stability. Special and general scientific methods were used: system approach, theoretical generalization, induction and deduction, statistical, scientific abstraction. Strengthening the coordination of fiscal and monetary policy is an important stabilization tool for ensuring the adaptation of the economy to social and economic conditions, curbing inflation in order to maintain exchange rate stability, reducing fundamental price pressure and directly overcoming inflationary processes. The toolkit of fiscal and monetary policy must be considered in an inseparable unity, taking into account the synergistic effect of ensuring macroeconomic stability, which cannot be achieved exclusively by the tools of only one of the policies. The main directions of strengthening the coordination of the fiscal and monetary policy of Ukraine at this stage include: combining the tools inherent in both directions of policies, strengthening its flexibility and adaptability to socio-economic processes; synergy of policy instruments in the context of

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КООРДИНАЦІЯ ФІСКАЛЬНОЇ ТА МОНЕТАРНОЇ ПОЛІТИКИ УКРАЇНИ

В умовах невизначеності та економічної нестабільності актуалізується проблематика дослідження підходів до посилення координації фінансової та монетарної політик. Метою дослідження є обґрунтування напрямів посилення координації фінансової та монетарної політик України. Висунуто гіпотезу, що рівень координації фінансової та монетарної політик визначає здатність країни забезпечити макроекономічну стійкість. Використано спеціальні та загальнонаукові методи: системного підходу, теоретичного узагальнення, індукції та дедукції, статистичний, наукової абстракції. Вагомим стабілізаційним інструментарієм забезпечення адаптації економіки до соціально-економічних умов, стримування інфляції з метою збереження курсової стійкості, зменшення фундаментального цінового тиску та безпосередньо подолання інфляційних процесів є посилення координації фінансової та монетарної політик. Інструментарій фінансової та монетарної політик необхідно розглядати в нерозривній єдності, з урахуванням синергетичного ефекту забезпечення макроекономічної стійкості, що не може бути досягнуто винятково інструментами лише однієї із політик. Основними напрямками посилення координації фінансової та монетарної політик України на цьому етапі є: поєднання інструментарію, властивого обом напрямкам політик, посилення його гнучкості та адаптивності до соціально-економічних процесів;



ensuring debt sustainability and reducing fiscal risks; substantiation of the common strategic goals of policies, which will contribute to strengthening their coordination, in particular by developing an appropriate strategy; the development of a financial toolkit for prevention and response, within the framework of which policy instruments are used together, in particular by improving the traditional practice of applying macroprudential measures; strengthening the independence of state institutions that ensure the formation and implementation of fiscal and monetary policy by continuing institutional and legislative reforms in the relevant areas.

Keywords: fiscal policy, monetary policy, martial law, budget, expenditures, debt, price stability.

синергія інструментарію політик у контексті забезпечення боргової стійкості та зниження фіскальних ризиків; обґрунтування спільних стратегічних цілей політик, що сприятиме посиленню їх координації, зокрема шляхом розроблення відповідної стратегії; розвиток фінансового інструментарію із запобігання і реагування, в рамках яких інструменти політик застосовуються разом, наприклад завдяки удосконаленню традиційної практики застосування макропруденційних заходів; зміцнення незалежності державних інституцій, що забезпечують формування та реалізують фіскальну і монетарну політики шляхом продовження інституційних та законодавчих реформ у відповідних сферах.

Ключові слова: фіскальна політика, монетарна політика, воєнний стан, бюджет, видатки, борг, цінова стабільність.

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Introduction

In conditions of uncertainty, society faces the task of reforming the financial system and its components, while modernizing the state financial mechanism, financial policy tools and its components in order to ensure macroeconomic stability (Demyanishin, 2021; Horyn, 2020). Large-scale military operations in Ukraine cause new challenges, intensifying the issue of researching financial instruments and finding ways to strengthen the coordination of fiscal and monetary policies, which will contribute to ensuring macroeconomic stability. Ukrainian and foreign researchers are dealing with the problem of strengthening the coordination of fiscal and monetary policies. The question of the influence of fiscal and monetary policies on macroeconomic stability and the possibility of attracting direct foreign investment is disclosed in the works of Ferreira de Mendonça, Tiberto, 2024; Seelajaroen et al., 2020; Michaud & Rothert, 2018.

Strengthening coordination between the central bank and public administration bodies, increasing trust in these institutions contributes to the improvement of the investment climate; the quality level of implementation of relevant policies is a significant driver of internal flows of foreign direct investment (Ferreira de Mendonça & Tiberto, 2024). Lack of trust in the central bank reduces its ability to effectively use monetary policy tools to stabilize the economy (Seelajaroen et al., 2020). Balanced fiscal policy, which avoids the accumulation of unacceptable levels of public debt, can stimulate investment. On the other hand, an insufficiently justified fiscal policy leads to the instability of financial flows and the reduction of capital inflows (Michaud & Rothert, 2018; Cavallo, 2019).

Zymovets's monograph (2010) is devoted to the study of the financial policy of Ukraine in the context of strengthening the relationship between

fiscal and monetary policies. The researcher notes that fiscal and monetary policies should be subordinated to a common strategic goal that will contribute to the sustainable growth of a socially inclusive economy. Vavdiuk, Koretska, Galushchak (2019) point out that the multi-directional toolkit of fiscal and monetary policies is not aimed at stabilizing economic indicators. It is substantiated that monetary policy is more effective when it is implemented by an independent central bank. It is important that public authorities delegate the authority to formulate and implement monetary policy to an independent public financial institution (Svensson, 2018). At the same time, it is determined that in the conditions of the strengthening of crisis processes, coordination between state authorities and the National Bank in the context of attracting external financing should be strengthened, since under these conditions, the main financial resource is not taxes, but loans, grants and financial aid (Danylyshyn, 2018; Danylyshyn, 2024).

In connection with the dynamic changes in the institutional environment taking place in the economy of Ukraine, it is necessary to constantly increase the effectiveness of the tools of fiscal and monetary policies, to strengthen their role in ensuring macroeconomic stability and improving the well-being of citizens (Nikiforova, Tkachuk, 2020; Kovalenko, 2019). An important condition for strengthening the coordination of fiscal and monetary policies is the development of a strategy that takes into account the institutional components of these policies, the opportunities and threats of the internal and external financial and economic environment (Chugunov, Makohon, 2019). To strengthen the processes of economic integration, it is necessary to increase the quality level of fiscal and monetary institutions, while it is advisable to implement the policy of progressive fiscal consolidation with a reduction in the influence of fiscal dominance, which will contribute to increasing the level of effectiveness of the inflation targeting regime (Chugunov et al., 2019).

At this stage of the development of public relations, the study of issues related to the use of green instruments of fiscal and monetary policies has been updated. Features of the use of the appropriate toolkit are disclosed in the works of Ramlogan, Nelson, 2023; Chishti et al., 2021. Researchers Ramlogan and Nelson (2023) note that, due to the introduction of green instruments of fiscal and monetary policies, it is possible to significantly reduce the level of environmental pollution and contribute to adaptation to climate change and, accordingly, mitigation of its consequences.

Paying tribute to the scientific achievements of scientists in the relevant field, it should be noted the insufficient level of attention paid to the assessment of fiscal and monetary policies precisely in the conditions of increased uncertainty. Large-scale military actions on the territory of Ukraine require the development of new and improvement of the existing tools of fiscal and monetary policies, strengthening of their coordination. The aim of the research is to justify directions for strengthening the coordination of fiscal

and monetary policies of Ukraine. It is hypothesized that the level of fiscal and monetary policy coordination determines the country's ability to ensure macroeconomic stability. Accordingly, strengthening the coordination of fiscal and monetary policies will contribute to its provision.

To achieve the aim of the research, a complex of special and general scientific methods was used, such as: a systematic approach, with the aim of identifying key challenges for fiscal and monetary policy and determining directions for ensuring macroeconomic stability; theoretical generalization, disclosure of the content of approaches to fiscal and monetary policy, directions of their coordination; inductions and deductions – establishment and assessment of interdependencies between fiscal and monetary policy; statistical and grouping – for the analysis of indicators of fiscal and monetary policies; scientific abstraction, to substantiate the conclusions of the conducted research.

The main part of the article consists of three parts, in which the principles of coordination of fiscal and monetary policies are consistently considered, the peculiarities of their coordination in countries with developed and transformational economies are analyzed, and directions for strengthening the coordination of fiscal and monetary policies of Ukraine are highlighted.

1. Principles of fiscal and monetary policy coordination

The strategic goal of state institutions that ensure the formation and implementation of fiscal and monetary policies is to achieve macroeconomic stability as a necessary prerequisite for the sustainable growth of a socially inclusive economy. However, each of the state institutions uses its tools in the process of solving the assigned tasks. The combinatorial toolkit of the mutual influence of fiscal and monetary policies on economic processes and on each other depends on the characteristics of the economic environment, the volatility of economic dynamics, the structure of state and guaranteed state debt, access to the international market of financial resources, etc.

State authorities determine the principles of the formation and implementation of fiscal policy, in particular regarding the optimal level of taxes and public expenditures. The central bank, as a monetary regulator, determines monetary policy by setting interest rates. Accordingly, coordinated decisions of these institutions provide an opportunity to ensure macroeconomic stability and reduce imbalances in the economy.

Forming fiscal policy, state authorities ensure redistribution of public wealth, satisfaction of social and economic interests of members of society, and increase in welfare. At the same time, it is important not to exceed the acceptable level of budget deficit and public debt in the context of solving the set tasks. Public debt, on the one hand, stimulates and limits the actions of public authorities, on the other hand, through it; the decisions of the central

bank in the context of management through monetary instruments affect the stability of public finances. Accordingly, the public debt is a compatible link that combines and determines the interaction of fiscal and monetary policies.

The implementation of a tight monetary policy can cause the emergence and strengthening of problematic issues in the field of fiscal regulation, as it leads to an increase in the cost of servicing the public debt and slows down the pace of economic growth. The strengthening of the national currency due to the increase in interest rates can have a positive effect on the public debt, especially in foreign currency. The implementation of a soft fiscal policy leads to the growth of public debt and the acceleration of inflationary processes. This increases the risks of not achieving inflation targets. A significant increase in the state debt in the future leads to the strengthening of problematic issues regarding its maintenance, taking loans by the state administration bodies from the national bank for the purpose of financing the budget deficit and forced emission. Under such conditions, the pressure of debt obligations on the balance sheet of the central bank increases, while monetary policy is aimed at minimizing the cost of servicing the public debt.

Thus, solving the problems of fiscal and monetary policy depends not only on the effectiveness of one's own policy tools, but also on the validity of another. In particular, failure, to take into account the basic principles of monetary policy by state authorities, leads to a decrease in the effectiveness of its tools, prevents the achievement of price stability and containment of inflationary processes. At the same time, the revival of inflationary processes complicates the achievement of fiscal goals. Achieving macroeconomic stability as a necessary prerequisite for the sustainable growth of a socially inclusive economy requires the coordination of actions between state institutions that ensure the formation and implementation of fiscal and monetary policies.

2. Peculiarities of fiscal and monetary policy coordination in countries with developed and transformational economies

In countries with developed and transformational economies, different approaches to coordination of fiscal and monetary policies are distinguished. At the same time, in the vast majority of countries, the coordination of fiscal and monetary policies is mostly ensured through the application of the inflation targeting regime.

The inflation targeting regime in the process of implementing monetary policy means, on the one hand, evading the fixed exchange rate regime, and on the other hand, the use of classical monetary instruments: the base rate, market operations and macroprudential regulations. When applying the base rate, the effect of the transmission mechanism of the interest channel on inflation is strongly limited by uncontrolled factors of

price growth in the form of import inflation and fiscal incentives, as well as permanently high price expectations among economic agents. This may arise in connection with structural problems of the economy: a significant level of dependence of the country's export revenues on the sale of raw materials and a significant share of the imported component in consumption. Price expectations can be related to systematic exchange rate fluctuations that affect devaluation expectations. Due to the insufficient level of flexibility of the toolkit of minimum reserve requirements, the central bank is used by the banking system occasionally and quite often the expected and perceived inflation in countries with a transformation economy exceeds the level of official price growth.

The implementation of a countercyclical fiscal policy stimulates the economy, taking into account the cyclicity of economic processes. At the same time, the soft fiscal policy causes the national bank to increase the discount rate and increase the costs of servicing the public debt. This motivates to carry out fiscal consolidation, reduce expenses and look for additional sources of filling the revenue part of the budget. At the same time, in the conditions of recession, the state administration bodies increase the budget deficit in order to stimulate the rate of economic growth.

In countries with a transformational economy, the stability of state institutions is quite low, accordingly, in the process of policy coordination, the level of intervention of public administration bodies in the policy of the central bank increases. In the structure of public debt, debt denominated in foreign currency mostly prevails, which increases vulnerability to changes in the exchange rate, and there are significant differences in the correlation between inflation and economic growth rates. An economic recession is mostly accompanied by a devaluation of the exchange rate and a revival of inflationary processes, while in countries with a developed economy is deflation.

At this stage, significant amounts of public debt and public budget deficits in countries with a transformational economy lead to the use of the "fiscal dominance" approach, which increases inflationary processes, increases the cost of borrowing and the volatility of cyclical economic development. At the same time, the issue of finding a financial and budgetary toolkit aimed at ensuring the implementation of an effective, independent monetary policy and avoiding fiscal dominance arose. In countries with developed economies, coordination of fiscal and monetary policies involves constant monitoring and exchange of information between relevant state institutions, which allows the central bank to achieve inflation targets and influence the money supply.

Thus, in countries with a transformational economy, approaches to coordination of fiscal and monetary policies often consist in ensuring the interests of some state institutions by others. Accordingly, the approach of "fiscal dominance" and subordination of the Central Bank to state

administration bodies is implemented. The application of the "fiscal dominance" approach quite often increases the risks of a significant increase in the budget deficit and currency risks under the conditions of a significant share in the structure of the state debt of debt obligations denominated in foreign currency, which increases the vulnerability to changes in the exchange rate.

3. Directions for strengthening fiscal and monetary policy coordination in Ukraine

Ukraine has extensive experience in implementing a soft fiscal policy and at the same time a stimulating monetary policy under a fixed exchange rate. This led to the strengthening of macroeconomic imbalances and crisis processes in the field of financial and economic relations, as it created an illusion of financial stability, which stimulated the accumulation of debts, in particular those denominated in foreign currency. At the same time, the strengthening of exogenous and endogenous factors caused negative changes in the financial and budgetary sphere and a decrease in the ability to face challenges. The limitation of market financing intensified devaluation processes and reduced the effectiveness of monetary policy tools. Accordingly, the question of finding an effective toolkit of both fiscal and monetary policy, strengthening coordination between them is relevant throughout the entire period of formation of Ukraine as an independent state.

The problem of coordination of fiscal and monetary policies was most fully manifested in the conditions of the monetary strategy of inflation targeting. At the same time, the target inflation rate was set jointly by state authorities and the National Bank, which required their close cooperation.

The transition to the application of the inflation targeting regime in Ukraine was carried out in 2016. In order to increase the level of transparency of monetary policy, a Road Map was developed, which defines the tasks of the National Bank to create the necessary conditions for the effective application of the inflation targeting regime. In particular, actions to ensure the strengthening of coordination of state authorities with the National Bank and the International Monetary Fund have been determined (NBU, 2016).

The decision of the Council of the National Bank of Ukraine dated December 21, 2016 regarding the "Basic principles of monetary policy for 2017 and the medium-term perspective" (NBU Council, 2016) established inflation targeting as a monetary policy regime. According to the "Basic principles of monetary policy for 2018 and the medium-term perspective", it is determined that the inflation targeting regime contributes not only to the stabilization of inflationary processes, but also to the stimulation of economic growth rates (NBU Council, 2017). In 2019–2021, in accordance with the basic principles of monetary policy, the policy of targeting inflation and maintaining a floating exchange rate was continued; accordingly, monetary

policy was not aimed at achieving a certain level of the exchange rate, which did not exclude the possibility of conducting currency interventions in order to accumulate international reserves (NBU Council, 2018).

Large-scale military activities in Ukraine, which began with the invasion of the Russian army on February 24, 2022, led to the transition to the implementation of a prudent fiscal and eclectic monetary policy, which involves the use of combinatorial monetary instruments depending on the circumstances. In order to increase the flexibility of policies, amendments were made to the Regulation on State Registration of Regulatory Acts of Ministries and Other Executive Authorities, according to which it is determined that "in urgent cases related to the introduction of martial law in Ukraine or in some of its localities, which require an immediate decision, the subject of rule-making may issue the relevant normative-legal act without coordination with the subjects of rule-making and/or with other interested bodies, except for normative-legal acts related to budget receipts and/or expenditures subject to agreement with the Ministry of Finance" (CMU Resolution No. 172, 2022). At the same time, the following were strengthened: cooperation between state authorities and the National Bank in the context of attracting external financing from partner countries and international organizations; economic pressure on the aggressor country, in particular through the introduction of financial sanctions.

In April 2022, the "Basic Principles of Monetary and Credit Policy for the Period of Martial Law" was approved (NBU Council, 2022). It was determined that in the conditions of martial law, the primary task is to ensure the needs of the security and defense sector, the uninterrupted functioning of critical infrastructure facilities and the state finance system. Increasing uncertainty in the context of large-scale military operations makes it impossible to implement the monetary strategy of targeting inflation. It is envisaged to strengthen the flexibility of monetary policy and its adaptability to socio-economic processes, the use of anti-crisis measures, the development of financial instruments for prevention and response with the aim of improving the traditional practice of applying macroprudential measures, maintaining the appropriate level of liquidity of the banking system, and introducing administrative restrictions on the movement of capital.

It was determined that the National Bank, in the event of an urgent need to ensure the uninterrupted functioning of the state finance system, can provide financial support to the State Budget of Ukraine by purchasing securities of state authorities of Ukraine on the primary market. Taking into account the risks of monetizing the deficit of the State Budget of Ukraine, the need to finance only critical budget expenditures in limited amounts has been determined. In 2022, internal government loan bonds (IGLB) in circulation, by the amount of the principal debt of the National Bank, amounted to UAH 704.5 billion (*Table 1*).

Table 1

The structure of IGLB in circulation, by the amount of the principal debt, %

Year	NBU		Banks	Legal entities	Local communities	Natural persons	Nonresidents	
	UAH billion	% of GDP						% in the structure of state domestic bonds
2022	704.5	13.45	34.73	51.12	7.72	0.13	2.16	4.15
2023	690.0	–	41.30	43.90	8.69	0.12	3.26	2.73
2024	685.0	–	41.19	43.16	9.26	0.13	3.57	2.70

Source: Authors' calculations based on data from the NBU, n.d.

In 2022, in order to ensure the sustainability of the public finance system under martial law, the NBU promptly transferred part of the distributable profit to the State Budget of Ukraine based on the results of the previous year. At the same time, during the period under review, a decrease in the share of relevant funds in the structure of both non-tax revenues of the state budget and revenues in general was observed (*Table 2*).

Table 2

Funds transferred by the NBU to the State Budget of Ukraine in accordance with the Law of Ukraine On the National Bank of Ukraine, UAH billion

Indicators	2015	2016	2017	2018	2019	2020	2021	2022
Funds transferred by the National Bank of Ukraine	61.8	38.2	44.4	44.6	64.9	42.7	24.4	18.8
Non-tax revenues of the state budget	120.0	103.6	128.6	164.7	186.8	213.0	175.4	346.6
Share of funds transferred by the NBU in non-tax revenues, %.	51.50	36.82	34.51	27.09	34.75	20.06	13.93	5.42
State budget revenues	534.7	616.3	793.4	928.1	998.3	1076.0	1296.9	1787.7
Share of funds transferred by the NBU in revenues, %.	11.56	6.19	5.59	4.81	6.50	3.97	1.88	1.05

Source: Authors' calculations based on data from the Ministry of Finance, n.d.; NBU, n.d.

In order to stabilize inflation expectations and reduce the risk of adverse secondary effects associated with the weakening of the exchange rate in June 2022, the discount rate was increased from 10% to 25%. At the same time, in 2023, the discount rate was reduced to 22% in July, 20% in September, 16% in October, and 15% in December. In the future, it is expected to loosen exchange control and move to a more flexible exchange rate. Easing price controls and increasing the consistency of monetary policy with fiscal policy measures will support the operation of the transmission mechanism and help contain inflation. In the future, the recovery of economic growth is predicted, but the risks of a decrease in the forecast indicator remain significant. According to forecasts, the level of economic growth will be 3.6% in 2024, 5.8% in 2025, and 4.5% in 2026. The consumer price index (at the end of the period) is 8.6% in 2024, 5.8% in 2025, and 5% in 2026 (NBU Board, 2024). At the same time, the intensification of military operations may lead to a decrease in the rate of economic growth, significant inflation and social tension.

A significant problem of ensuring macroeconomic stability in Ukraine is the presence of a constant positive fiscal impulse, which causes a number of negative externalities. In particular, the dynamics of the state debt and expenditures of the State Budget of Ukraine for 1992–2023 are characterized by almost constant growth. During the martial law, the share of expenditures of the State Budget of Ukraine, state and guaranteed state debt in GDP increased significantly. Approaches to budget expenditures and debt borrowing have been changed accordingly. The task of increasing the degree of validity of the indicators characterizing the level of financial sustainability of the budget, and strengthening financial and budgetary discipline have become important. In order to optimize the procedure for making expenditures from the state budget, economical and rational use of budget funds, improvement of approaches to determining the effectiveness of budget programs and strengthening the transparency of the budget process, the "Methodical recommendations on the formation of budget programs by the main managers of state budget funds" was adopted (Order of the Ministry of Finance of Ukraine No. 465, 2023). In particular, the requirements for effective indicators and ensuring the interconnection of budget programs with strategic tasks of state policy are defined. The primary tasks of the fiscal policy, taking into account the limitation of own internal revenues and the fact that almost all of them are directed to the financing of the security and defense sector, are: attraction of external borrowings under the conditions of long-term preferential financing; increase in state grants; creation of conditions for the development of the internal capital market; activation of relations with investors and search for additional sources of budget financing. In particular, the peculiarities of taxation of banks have been changed. In accordance with the Law of Ukraine "On Amendments to the Tax Code of Ukraine Regarding the Specifics of Taxation of Banks and Other Taxpayers"

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(Law of Ukraine No. 3474-IX, 2023), the rates of bank income tax have been revised: in 2023, the establishment of an increased basic income tax rate is foreseen in the amount of 50% (in previous years, the rate was 18%); in 2024 – 25%; a ban has been imposed on the inclusion in 2023 of outstanding tax losses of previous years in the reduction of the object of taxation with the right to such inclusion, starting from the reporting periods of 2024 until they are fully repaid. In 2023, revenues from income tax of banking organizations, including branches of similar organizations located in Ukraine, amounted to UAH 14.2 billion (8.9% in the structure of revenues from corporate income tax).

The assessment of the index of consumer prices, state budget expenditures, state debt, and real GDP shows that the increases in state budget expenditures, state debt, and inflation have a negative impact on the rate of economic growth. A significant achievement of the fiscal and monetary policy of Ukraine is the provision of an acceptable level of public debt and a low level of inflation against the background of economic growth in the relevant periods. At the same time, in the conditions of financial and economic crisis, martial law, there is a significant drop in real GDP, increase in inflationary processes and increase in public debt (*Table 3*).

Table 3

Real GDP and the main indicators of fiscal and monetary policy

Period	State budget expenditures		State and guaranteed public debt		Real GDP, %	Consumer price index (to December of the previous year), %
	UAH billion	in % of GDP	UAH billion	in % of GDP		
1992–1996	8.9	30.50	10.0	41.49	86.16	2 535.68
1997–2001	27.9	19.74	65.1	47.60	101.92	116.24
2002–2006	86.0	22.07	79.5	23.96	107.46	108.36
2007–2011	259.0	25.00	300.3	28.67	100.96	112.98
2012–2016	498.2	27.69	1 140.5	60.61	97.24	116.18
2017	839.5	28.16	2 141.7	71.84	102.4	113.7
2018	985.9	27.69	2 168.4	60.91	103.5	109.8
2019	1 075.1	27.03	1 998.3	50.24	103.2	104.1
2020	1 288.1	30.51	2 551.9	60.44	96.2	105.0
2021	1 491.2	27.36	2 672.1	49.02	103.4	110.0
2017–2021	1 135.9	28.15	2 306.5	58.49	101.7	108.52
2022	2 705.7	51.65	4 075.5	77.79	71.2	126.6
2023	4 014.4	–	5 519.5	–	102.8	105.1
2022–2023	3360.1	–	4797.5	–	87.0	115.9

Source: calculated by the author based on data (Ministry of Finance, n.d.; NBU, n.d.).

In October 2023, the "Medium-term strategy of public debt management for 2024-2026" was adopted (Decision of the Cabinet of Ministers of Ukraine No. 1117, 2023). In accordance with this strategy, it is determined that the important task is to cover the financing needs in order to ensure spending on the security and defense sector and create conditions for the economic reconstruction of Ukraine. Achieving the specified goal involves increasing the efficiency of the mechanism for managing state and guaranteed state debt, optimizing its structure in terms of the ratio of servicing costs and risks in order to restore an acceptable level of debt burden, strengthening cooperation with international partners in order to obtain access to preferential external financing, which will contribute to ensuring fiscal and debt sustainability. Accordingly, in the medium term, the growth of public debt is expected. In particular, according to the forecasts of the International Monetary Fund, the share of the state and guaranteed state debt of Ukraine in the GDP in the medium term will exceed 100%, and payments for debt service will exceed 12% (Ilchenko, 2023).

Therefore, in order to ensure macroeconomic stability and protect the most vulnerable sections of the population, it is necessary to raise the quality level of the formation and implementation of financial policy components. Important tasks are: strengthening the adaptability of fiscal and monetary policies to economic processes, their flexibility to respond to crisis phenomena and support economic activity; application of anti-crisis measures, development of financial instruments for prevention and response to maintain the appropriate level of liquidity of the banking system; strengthening the system of risk-oriented banking supervision; improvement of the monetary transmission mechanism and, in general, the traditional practice of applying macroprudential measures.

An important role should be played by the study of the best global practice of coordinating fiscal and monetary policies in order to obtain a synergistic effect from their interaction. It is necessary to significantly increase the quality level of fiscal and monetary policy tools, which will actualize the development of an appropriate strategy, which will reflect the common strategic goals of the policies, which will contribute to strengthening their coordination. At the same time, the strategy of strengthening the coordination of fiscal and monetary policies should be based on the continuation of institutional and legislative reforms in the relevant areas. Given that increased hostilities could lead to significant inflation, a combination of eclectic monetary policy and prudent fiscal policy is necessary to curb inflation and restore reserves. It is necessary to improve the rules of access to information, to strengthen the independence of state institutions that ensure the formation and implementation of fiscal and monetary policy, taking into account the need to expand macroprudential measures and capital control tools. It is necessary to strengthen trust in state institutions, increase the effectiveness of the mechanism of managing state

and guaranteed state debt, and the quality of state spending. In order to curb domestic demand and inflation, it is expedient to further optimize government spending. It is expedient to increase the quality level of fiscal and monetary policies, strengthen their coordination in the context of ensuring debt sustainability, reduce fiscal risks, optimize the structure of public borrowing, taking into account rates, yield, term of their circulation and repayment currency.

Conclusions

The study results of approaches to the coordination of fiscal and monetary policies indicate that the level of their coordination affects the country's ability to ensure macroeconomic stability. The toolkit of fiscal and monetary policy must be considered in an inseparable unity, taking into account the synergistic effect of ensuring macroeconomic stability, which cannot be achieved exclusively by the tools of only one of the policies. The main directions of strengthening the coordination of the fiscal and monetary policies of Ukraine at this stage include: the combination of tools typical of both areas of implementation of fiscal and monetary policies, strengthening its flexibility and adaptability to socio-economic processes; synergy of fiscal and monetary policy instruments in the context of ensuring debt sustainability and reducing fiscal risks; substantiation of common strategic goals of fiscal and monetary policies, which will contribute to strengthening their coordination, in particular by developing an appropriate strategy; the development of financial tools for prevention and response, within which fiscal and monetary policy tools are used together, in particular by improving the traditional practice of applying macroprudential measures; strengthening the independence of state institutions that ensure the formation and implementation of fiscal and monetary policy through the continuation of institutional and legislative reforms in the relevant areas.

Strengthening the coordination of fiscal and monetary policies in Ukraine is a complex and multifaceted problem that requires significant efforts of both state institutions that ensure the formation and implementation of fiscal and monetary policies, as well as the international community. Sound fiscal and monetary policies will contribute to ensuring macroeconomic stability and post-war recovery of Ukraine. At the same time, the post-war recovery of Ukraine involves the implementation of a complex of fiscal and monetary policy measures, increasing the level of effectiveness of their tools. Prospects for further scientific research consist in the formation of the main directions of raising the quality level and strengthening the coordination of fiscal and monetary policies, in particular in the context of ensuring debt sustainability and reducing fiscal risks.

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FISCAL DOMINANTS OF MILITARY FINANCING

Long-term military aggression has required updating approaches to budget revenue formation to increase the fiscal effectiveness of taxes and ensure budget sustainability. The article is aimed to substantiate the main priorities for boosting the efficiency of the central budget revenue formation system in combating full-scale military aggression, which involves compliance with the principle of fiscal sufficiency in financing defense and security needs and fostering economic recovery. Systematic and logical approaches were used in the article. Various methods were applied, including generalization, comparison, analysis and synthesis, scientific abstraction and expert evaluations. The USA's experience in the field of budget revenues formation during wars shows that the authorities tried to design the taxpayer's trust and ensure a fair cost for conducting a war for every citizen. The classic measures were increased tax rates on income and profits, and the active sale of government bonds. Great Britain has applied identical measures. The budget revenues formation policy has demonstrated significant changes since the full-scale invasion. The percentage of GDP redistribution through the central budget revenues in 2023 equaled 41.76%. The main features of tax revenues shaping (into a central budget) in 2022–2023 have been identified. Priority measures to raise the fiscal significance of tax revenues have been substantiated. This concerns the decrease of the shadow part of the gambling business; the excise goods markets; and labor

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ФІСКАЛЬНІ ДОМІНАНТИ ФІНАНСУВАННЯ ВІЙСЬКОВИХ ПОТРЕБ

Затяжна військова агресія потребує оновлення підходів до формування бюджетних доходів задля посилення фіскальної результативності податків та забезпечення бюджетної стійкості. Метою статті є обґрунтування основних пріоритетів підвищення ефективності системи формування доходів державного бюджету в умовах протидії повномасштабній військовій агресії, що передбачає дотримання принципу фіскальної достатності фінансування потреб оборони і безпеки, а також сприяння процесам економічного відновлення. У статті використано системний та логічний підходи. Застосовано метод узагальнення, порівняння, аналізу і синтезу, наукового абстрагування та експертних оцінок. Досвід США у сфері формування бюджетних доходів протягом війн свідчить, що влада намагалась сформувати довіру платників податків та забезпечити справедливу вартість ведення війни для кожного громадянина. Класичними заходами були збільшення ставок податків на доходи і прибутки, активний продаж державних військових облигацій підприємствам і населенню. Ідентичні заходи застосовувала й Велика Британія. Політика формування бюджетних доходів з моменту повномасштабного вторгнення суттєво змінилась. Частка перерозподілу ВВП через дохідну частину державного бюджету в 2023 р. досягла 41.76%. Визначено основні особливості формування податкових надходжень до державного бюджету в 2022–2023 рр. Обґрунтовано пріоритетні заходи підвищення фіскальної значущості податкових надходжень. Зокрема це стосується детінізації операцій грального бізнесу, ринку підкацизних



incomes. In addition, the prerequisites for introducing a progressive personal income tax scheme have been determined.

Keywords: fiscal policy, state budget, taxes, non-tax revenues, grants.

товарів та легалізації витрат на оплату праці. Визначено пререквізити запровадження прогресивної шкали оподаткування податком на доходи.

Ключові слова: бюджетно-податкова політика, державний бюджет, податки, неподаткові надходження, гранти.

JEL Classification: H11, H12, H21, H30

Introduction

The budget and tax policy of Ukraine at the end of the 20th and during first two decades of the 21st century was formed under the influence of significant challenges and social upheavals. The formation of our own financial system took place in the conditions of a long and deep recession of 1991–1999, the Great Recession, the hybrid aggression of the Russian Federation, and the global COVID-19 pandemic had a significant impact on the formulation of the basic principles of fiscal policy. The full-scale military invasion on February 24, 2022 radically changed the paradigm of domestic budget policy.

Even at the beginning of the XVII century Maximilien de Bethune Sully pointed three different prerequisites for the development of the state budget, which determine the focus of tax and budget policy: peace conditions, the state of war and post-war recovery. The need to protect the independence and sovereignty of the state caused the need for a rapid increase in budget expenditures on defense and security, while the state continues to make payments for all assumed obligations: social, functioning of critical infrastructure, servicing and repayment of the state debt, etc. Financing of the defense and security sector is possible purely at the expense of domestic sources, tax and non-tax revenues, as well as military bonds of the domestic state loan. Tax revenues have the highest fiscal significance. The protracted duration of military aggression requires updating approaches to the formation of budget revenues in order to strengthen the fiscal effectiveness of taxes and preserve options for ensuring the basic determinants for further economic growth.

Many studies have been devoted to the study of this issue. In particular, Ukrainian scientists (Chugunov et al., 2022) investigated certain features of the formation of the revenue part of the State Budget of Ukraine during the first six months of the martial law regime. The authors determined and systematized measures of tax stimulation and consolidation, analyzed the indicator of tax burden in foreign countries under conditions of intense military conflicts. Y. Ivanov and V. Laptev noted that at the initial stage of the full-scale invasion, domestic tax policy had an anti-crisis and mostly liberal character. Tax initiatives were aimed at supporting society, but did not take into account possible budget losses, which is a certain drawback in the implementation of state tax policy. In their opinion, tax policy should be more

comprehensive and systematic to achieve the goals of wartime and post-war recovery (Ivanov and Laptev, 2023). Yuriy Radionov, for his part, defined the current priorities of the budgetary policy of Ukraine within the limits of the concentrated volume of financial resources. He points to the expediency of improving the outdated methods of budget formation, fully introducing the mechanism of medium-term budget planning, adapting the directions of the budget and tax policy to the urgent provision of the state's defense capability and the stable functioning of its institutions (Radionov, 2023).

Inna Irtysheva, Iryna Kramarenko, and Ihor Sirenko examined potential economic losses and further prospects for global economic growth during the war in Ukraine. Certain provisions regarding the use of fiscal instruments to support the processes of economic development during this period have been disclosed (Irtysheva et al., 2022).

The issue of tax policy formation was considered by Alla Sokolovska, who thoroughly analyzed the changes in the domestic tax system of Ukraine in the context of the tax burden on the economy, factors of production and consumption. The author emphasized that further directions for improving tax policy should be related to such issues as supporting economic growth and detinization of the economy (Sokolovska, 2020).

George D. Hall and Nobel Laureate Thomas Sargent conducted a comprehensive analysis of the monetary and fiscal policy of the United States during the two World Wars in the 20th century, as well as the global COVID-19 pandemic. The authors noted that, despite the increase in the tax burden during wartime, the main resource for financing extraordinary military expenditures belongs to debt securities and the printing press. Thus, military budget expenditures during World War I were financed by 20.8% from tax revenues, 74.6% from bonds, and 4.6% from seigniorage; during the Second World War, the share of taxes increased to 30.2%, state loans – decreased to 46%, and 10.1% belongs to money emission. Extraordinary budget expenditures aimed at countering the consequences of COVID-19 were financed by the government from tax revenues for only 3.5%, public borrowings for 67%, and additional emissions for 18.5% (Hall & Sargent, 2022).

Oliver Blanchard and Jean Pisani-Ferry identified the main challenges for the economies of the member states of the European Union (hereinafter EU) as a result of the full-scale invasion of the Russian Federation into Ukraine. These include: balanced formation of sanctions packages, so that they simultaneously deter the aggressor and do not cause serious consequences for the EU economy; countering the decrease in real incomes of the population due to the increase in energy prices by using fiscal support and increasing budget deficits; containment of inflationary spikes under conditions of rising energy and food prices. The researchers came to a conclusion about the need to strengthen the coordination of fiscal and monetary policy

in the current economic conditions. They believe that fiscal and monetary policy should be quite flexible, and the corresponding measures should be easily adjusted in accordance with the social tasks set (Blanchard & Pisani-Ferry, 2022).

Javier Debrun and Lars Jonung reflect that it has been exceedingly difficult to harmoniously combine the three important properties of a balanced fiscal policy, namely simplicity, flexibility and binding, over the past two decades. It is important to determine the specific performance indicators of the fiscal policy, which should be achieved in a given time range. A constructive dialogue with the society regarding the implemented fiscal policy should be conducted in order to gain wider support and increase influence on the parliament and state fiscal bodies in order to achieve the set tasks and fulfill the planned fiscal indicators (Debrun & Jonung, 2019).

Despite the available thorough work of domestic and foreign researchers in the field of budget and tax policy formation and expert assessments of the impact of the military invasion on the economy of our state and the EU, it is important to determine the modern features of the implementation of the policy of forming the revenue part of the state budget and the determination of prospective fiscal measures for the next budget periods.

Under conditions of uncertainty, it is advisable to prepare variable scenarios for the implementation of tax and budget policy, to strengthen their coordination with monetary policy.

The aim of the article is to justify the main priorities of increasing the efficiency of the state budget revenue generation system in the conditions of countering full-scale military aggression, which involves compliance with the principle of fiscal sufficiency in financing defense and security needs, as well as promoting economic recovery processes.

In the course of the research, the hypothesis was put forward that with the increase in the duration of active hostilities, the main budgetary priority is to ensure fiscal stability, which requires the minimization of fiscal incentives and orientation towards the expansion of tax potential. In view of the above, the validity of tax measures should be strengthened, communication with taxpayers should be improved, and alternative compromise scenarios of increasing the fiscal significance of tax revenues should be formed, which would be as neutral as possible to the processes of economic growth.

A systematic approach was used in the research. The methods of systematization and generalization, comparison are applied in the study of the world experience of the formation of budget revenues under the conditions of intense military conflicts; analysis and synthesis, a logical approach, when determining the peculiarities of the formation of budget revenues under the conditions of a full-scale invasion; methods of expert evaluations, comparative analysis and scientific abstraction, when substantiating priorities for the formation of state budget revenues.

The information base of this research is the scientific work of Western economic schools and domestic authors. Official data of the Cabinet of Ministers of Ukraine, the Ministry of Finance of Ukraine and the State Tax Service of Ukraine regarding the main fiscal indicators were also used. Gross domestic product indicators are taken from official reports of the State Statistics Service of Ukraine and the National Income Strategy. In the analysis of fiscal indicators of foreign countries, the databases of the International Monetary Fund and the World Bank were used. The US population was estimated using data from the U.S. Census Bureau.

The main part of the article consists of three sections. The first summarizes and systematizes the experience of the formation of the revenue part of the budget in the USA during the First and Second World Wars, the Korean and Vietnam wars; Great Britain during World War II; Croatia during the War of Independence; 11 intense conflicts in Africa during 1990–2011. The second section is devoted to the analysis of the structure of revenues of the State Budget of Ukraine in 2021–2023, identifying the peculiarities of the formation of budget revenues. In the third, the priority measures of the state fiscal policy, aimed at ensuring the stability of the budget and increasing the fiscal significance of taxes, are substantiated.

1. Empirical experience of budget revenue formation under conditions of intense military conflicts in world practice

World wars, regional and local military conflicts were accompanied by an increase in public expenditures, which were used for military needs. Depending on the duration of conflicts, a different composite set of sources of financing such expenses is used. Prolonged wars or military operations required and require the search for extraordinary sources of budget revenues, as well as additional generation of tax revenues. Adam Smith also noted that during the war there was a 3-or 4-fold increase in budget expenditures compared to peacetime budget expenditures. In order to balance the budget, it is necessary to increase the tax burden to the specified level. However, even with a significant increase in tax rates or the introduction of new taxes, the growth of the revenue part of the budget can be observed after a certain time interval (from 6 to 12 months). At the same time, the conduct of war requires immediate manning of the army, providing the troops with a sufficient amount of weapons and food, and building appropriate fortifications. Thus, the financing of military expenditure should be carried out without a time lag. Debt obligations and seignery are also an important source of financing these expenses (Smith, 2023).

Military conflicts require additional financial resources for the needs of providing the army with weapons, equipment and all other necessary means. Taxes are an important source of budget revenues directed to the

specified goals. During the First World War in the USA, the share of taxes in the total revenues of the state was 20.8%, the other components were state borrowing and seigniorage (Hall & Sargent, 2022). Although President W. Wilson in his message to Congress in 1917 noted that as much as practicable, the financial burden of the war should be provided by taxation of the present generation, not loans (Gilbert, 1970). The head of the state treasury insisted that the share of tax revenues in financing all public expenditures of the war period should be at least 50% (Shook, 1975). An active campaign was conducted in the country regarding the need to buy back government debt securities. For a certain period, these loans were called Liberty Loans. Emphasizing the need to preserve liberty as a fundamental basis of American society probably served as the best advertisement for this type of government borrowing. The traditional revenues of the US federal budget from customs duties gradually decreased, because the volume of international trade decreased. In view of this, the task arose to strengthen the fiscal potential of the tax system, to diversify it, taking into account the duration of the conflict and the dynamics of the socio-economic development of the USA and its allies – trading partners.

Government institutions tried to build the trust of taxpayers and ensure a fair cost of the introduction of war for every citizen. Progressive income taxation was one of the manifestations of social justice that US policymakers saw during the war. Thus, the maximum rate of income tax (income tax) increased from 7% to 77%. The share of federal revenues from income and profits taxation increased from 10% in 1914 to 60% in 1918 (Mehrotra, 2010). However, during the war, the tax system performed a redistributive function quite effectively. The effective tax rate for the richest 1% of households increased from 3% in 1916 to 15% in 1918. Businesses that were involved in government war orders made significant profits and paid high dividends. Therefore, it was logical to increase the tax rates of high incomes. In addition, the emphasis on taxing the wealthiest sections of the population with the highest tax rates was perceived by society as a signal that they should also pay taxes, which are much lower.

The developers of the fiscal policy of the USA and European countries during the Second World War learned the lessons of the previous global conflict, ensuring better adaptability and effectiveness of the policy. The main features of the formation of the tax policy of that time were the increase in income taxes, as well as additional taxation of the profits of enterprises that were formed as a result of this war. The specific weight of tax revenues during World War II in the USA increased to 30.2% of the total amount of government revenues, the share of government borrowing was 46% (Hall & Sargent, 2022). Following the example of the last world war, an active campaign for the placement of military bonds of the state loan was launched. Bonds worth \$157 billion were sold. In the USA, about 85 million Americans invested their savings in government securities (Mehrotra, 2010). As of 1945,

139.9 million people lived in the United States (U.S. Census Bureau), that is, 60.7% of the population was involved in the purchase of military bonds. The Revenue Act of 1942 (The Revenue Act of 1942) established provisions for increasing income tax rates and eliminated the possibility of exemption from taxation or receiving tax preferences. The maximum marginal rate of income tax was increased to 94% significantly exceeding the maximum rate during the First World War (Rottschaefer, 1944), a tax on "surplus profit" was introduced in wartime, the marginal rate of this tax reached 90% (The Revenue Act of 1942). The tax regime during World War II is perhaps the most striking example of wartime fiscal sacrifice (Bank et al). In addition, it should be understood that the rates did not return to the pre-war level immediately after the end of the war, so in 1948 the marginal income tax rate decreased to 82%.

Great Britain used a similar approach to the formation of state revenue policy in the conditions of World War II. The main sources of financing military expenses were internal and external loans (primarily from the USA), increased tax burden and money printing. The marginal rate of income tax was increased to 95%, a special tax on "surplus profit" was introduced, the amount of tax expenses was reduced, the inheritance tax was significantly increased, and excise taxes were increased (Youngson, 2013). Finally, Great Britain settled with the USA for the supply of weapons during World War II only in 2006 (Ellison & Scott, 2017).

In 1950, the Korean War began, which also required substantial budget expenditures. It was the first large-scale military conflict with the participation of the United States, which was financed exclusively by taxes; special military bonds were not issued by the government. With broad bipartisan support, The Revenue Act of 1950 was passed, raising the marginal corporate tax rate (analogous to the income tax) to 45% and the income tax rate to 90% (Bank et al., 2008). During the active phase of the Vietnam War, US Congressmen emphasized the need for increased tax revenues to support the needs of the military. Therefore, an additional 6% increase in the income tax rate was initially introduced. Due to the protracted duration of the conflict and the unfavorable situation, the increase reached 10% (Mehrotra, 2010).

In Croatia, during the war for independence in the first half of the 1990s, the level of the tax burden did not increase. The additional volume of budget expenditures for the security and defense sector was financed by optimizing other structural components of the budget expenditure part and public borrowing (Schönfelder, 2005). Among 11 military conflicts in African countries (during 1990–2011), no single trend in the formation of budget revenues was found. In certain cases, there was indeed an increase in tax rates, primarily rents, in countries rich in mineral deposits (Angola, Libya). In other cases, the tax burden did not change. For the most part, military conflicts reduced the institutional capacity of state institutions to accumulate tax revenues for the budget system.

2. Peculiarities of the formation of budget revenues in Ukraine under the conditions of a full-scale invasion

Fiscal policy at the initial stage of full-scale military aggression had a stimulating character. In March 2022, a reduced rate of value-added tax (hereinafter VAT) was introduced, as well as the excise tax on fuel was abolished in order to curb the increase in prices for this product segment. As a result of the war in Ukraine, the cost of oil products began to rise rapidly, which eventually became the cause of high inflation around the world. The average value of consumer inflation in 2022 turned out to be the highest since 2008 and for the member states of the European Union – 8.8% (a significant number of EU countries had double-digit inflation), in the USA – 8%, in Great Britain – 7.9% (The World Bank, 2024). It was assumed that such fiscal easing should be in effect until the end of the martial law regime. However, the duration of military operations and the need to increase defense expenditures determined the expediency of increasing the fiscal importance of taxation. Initially, from September 30, 2022, the payment of excise duty on fuel was returned, at the same time, the rates were set at a level significantly lower than before the full-scale invasion (for motor gasoline – EUR100 per 1000 liters, for liquefied gas, butane, isobutene – EUR 52 per 1000 liters). From July 1, 2023, fuel taxation has fully returned to the level of February 2022 – the VAT rate has increased from 7% to 20%, the excise tax on motor gasoline has increased to EUR 2.013 per 1000 liters, and diesel fuel has increased to EUR 139.5 per 1000 liters. The use of the tool of preferential taxation of fuel had an effect on curbing the level of consumer inflation and supported the purchasing power of households, which is extremely important in the conditions of a social and economic shock. Excise tax revenues from fuel in 2023 exceeded the figure of 2022 by more than 3 times (National Revenue Strategy, 2023).

From March 2022 till July 2023, payers of the single tax of the I and II groups are optionally given the right not to pay this tax to the corresponding budget of the territorial community. A tax rate of 2% of income has been established for payers of the uniform tax of Group III (individuals and legal entities). At the initial stage, an income limit of UAH 10 billion was set, but it was later canceled. There are certain prohibitions regarding types of economic activity for the use of the specified fiscal incentive such as: production, export/import, sale of excise goods; foreign currency exchange; extraction of minerals; financial activities (pawn shops, banks, insurance companies, etc.); gambling activities. At the same time, the last rule came into effect only from February 2023. After all, changes to the Tax Code of Ukraine for the period of martial law from April 14, 2022 allowed business entities that are engaged in the organization, conduct of gambling, lotteries and betting to be on a simplified taxation system. In general, the activity of these taxpayers raises many questions about honesty and integrity. The use

of a simplified taxation system and numerous tax evasion schemes (miscoding, non-taxation of winnings, participation in schemes of shadow export of grain and payment of wages in envelopes) caused significant losses to the state budget. The systematic work of the authorities made it possible to significantly improve the situation with the payment of taxes. According to the results of 2023, the gaming business paid UAH 10.4 billion in taxes, which is 14 times more than in 2022, and 51 times more than in 2021 (Official website of the VRU Committee on Finance, Tax and Customs Policy, 2024).

From April 1 to June 30, 2022, a preferential tax regime was in effect for the import of vehicles (payment of VAT, customs duty, and excise duty was canceled). The prerequisite for the introduction of this innovation was the mass destruction of household cars as a result of military operations and the need to purchase vehicles for the military. In the explanatory note to the Law of Ukraine dated June 21, 2022 No. 2325-IX, which canceled these benefits, it is stated that citizens imported 119.000 vehicles during the period of benefits, as a result of which UAH 13 billion did not go to the budget. In general, as a result of 2022, the budget received excise tax on vehicles – UAH 5 billion, which is almost three times less than in 2021 and half as much as in 2023 (National Revenue Strategy, 2023).

As a result of the destructive missile attacks on critical infrastructure, starting from November 11, 2022, the state has provided exemption from payment of VAT and import duties for operations involving the importation of electric generators, batteries, transformers, and other similar devices into the territory of Ukraine. This fiscal measure is aimed at supporting households and businesses to ensure uninterrupted energy sources. The multiple increases in demand from the population and enterprises for the mentioned products under the conditions of long-term power outages affected the increase in prices for them. It is important that the state used the principle of tax policy adaptability, responding to the urgent challenges of a full-scale war. Despite significant tax losses, at the initial stage, the reduction in the level of taxation for consumer goods had a significant effect on maintaining the purchasing power of the population. In order to increase the effectiveness of the tax policy, it is necessary to ensure the targeting of tax benefits and limit the duration of their effect, with a further assessment and comparison of the benefits and budgetary losses from their application.

From the second half of 2023, the policy of budget revenue generation and its tax component has a compensatory nature. The state focuses on increasing the fiscal significance of tax revenues, which are extremely necessary to ensure and strengthen its defense capability. In addition to the return of the level of VAT and excise taxation to the pre-war level and the abolition of preferential taxation for the III group, a number of steps have been taken to supplement the state treasury. The prototype of the taxation of excess profits due to the war (which was introduced by the USA and Great Britain during the world wars) was the temporary introduction in Ukraine of

an increased income tax rate for banks – the income for 2023 is taxed at a rate of 50%, in the future the basic tax rate for banks is set at equal to 25%. We remind you that the rate of this tax for other business entities is 18%. The net profit of banks for 2023 was UAH 86.5 billion (Official website of the National Bank of Ukraine). Compared to 2022, profits increased 4 times, a significant part of banks' profits was formed due to increased volumes of investments in NBU certificates of deposit (mainly in state banks) and domestic state loan bonds. The share of these two instruments in banks' interest income was 54%.

An important source of filling the revenue part of the state budget from the fourth quarter of 2023 is a change in the approach to the inclusion of part of the income from the personal income tax from income taxation in the form of monetary support for military personnel. From October 1, 2023 to December 31 of the year in which martial law will be abolished, this tax is temporarily transferred to a special fund of the state budget. Funds from such revenues in 2023 were directed: 50% – for the purchase of special equipment and equipment (primarily drones), 50% – for the purchase of artillery systems. In 2024: 45% – for the purchase of special machinery and equipment; 45% – for the development of new technologies, the expansion of production capacities for the production of defense products; 10% – to military units in proportion to the tax paid by military personnel of this unit. According to our calculations, based on the data of the Ministry of Finance of Ukraine, in 2023, about 26 billion UAH were added to the special fund of the state budget, and in 2024, 95 billion UAH should come.

The policy of budget revenue generation has undergone significant adjustments in the two years since the full-scale invasion. The indicator of the ratio of GDP redistribution through the revenue part of the state budget in 2023 increased compared to 2021 by 75% and reached the level of 41.76%. (*Table*). It should be emphasized that the share of tax revenues in the structure of the revenue part of the State Budget of Ukraine in 2021 exceeded 85%, but due to military aggression, this value decreased in 2022 to 53%, and in 2023 to 45%. At the same time, the value of the indicator of the share of budget revenues in GDP decreased slightly – from 20.28% in 2021 to 18.81% in 2023, and in 2023, compared to 2022, the fiscal significance of tax revenues increased by 0.51% of GDP. The share of all the most fiscally significant taxes in GDP, with the exception of personal income tax, decreased under martial law conditions, which was caused both by the fiscal incentives of the initial stage of military aggression against Ukraine, and by a significant decrease in the level of economic activity and consumption. According to UN data, as of February 1, 2024, 5.94 million Ukrainian refugees were registered in EU member states, and another 403.6 thousand refugees in other countries of the world (Operational Data Portal UNO, 2024). The gradual increase in the fiscal significance of the personal income tax in the state budget is directly related to the increase in support for military personnel, the increase in their number and the redistribution

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of part of the "military" personal income tax to the state budget from the IV quarter of 2024.

The fact of a significant increase in 2023 compared to 2021 of the share of non-tax revenues both in GDP and in the structure of budget revenues – by 12.29% and 23.59%, respectively – attracts attention. The largest increase in this budget article was ensured thanks to the increase in the volume of own revenues of budget institutions. The share of these revenues in the total volume of non-tax revenues amounted to 81.93% in 2023. These revenues increased due to a multiple increase in external financial assistance for socio-economic purposes. Grants from the EU, governments of other countries, and financial organizations have also become a significant source of income. In 2023, according to the mentioned article, UAH 433.4 billion was received in the budget, which was 16.22% of the total revenue of the state budget. At the same time, 99.6% of grants are directed to budget support.

Table

State Budget Revenue Structure of Ukraine in 2021–2023, %

Source of income	2021		2022		2023*		Deviation 2023/ 2021	
	share in GDP	share in income	share in GDP	share in income	share in GDP	share in income	share in GDP	share in income
Tax revenues, including:	20.28	85.37	18.30	53.14	18.81	45.04	-1.47	-40.33
<i>personal income tax</i>	2.52	10.61	2.86	8.30	3.23	7.74	0.71	-2.87
<i>profit tax</i>	2.71	11.39	2.25	6.55	2.25	5.38	-0.46	-6.01
<i>rent payment</i>	1.48	6.23	1.64	4.78	0.94	2.26	-0.54	-3.97
<i>value added tax</i>	9.82	41.37	8.99	26.13	9.07	21.73	-0.75	-19.64
<i>excise tax</i>	2.98	12.53	1.97	5.73	2.62	6.26	-0.36	-6.27
<i>import duty</i>	0.68	2.84	0.50	1.43	0.62	1.50	-0.06	-1.34
Non-tax revenues	3.21	13.52	6.67	19.38	15.50	37.11	12.29	23.59
Income from capital transactions	0.01	0.03	0.01	0.03	0.00	0.00	-0.01	-0.03
Funds from foreign countries and international organizations	0.02	0.10	9.27	26.92	6.77	16.22	6.75	16.12
Trust funds	0.00	0.02	0.00	0.01	0.01	0.02	0.01	0.00
Official transfers	0.23	0.97	0.18	0.53	0.67	1.61	0.44	0.64
Total	23.75	100.00	34.43	100.00	41.76	100.00	18.01	0.00

* GDP data for 2023 are expected and taken from the National Revenue Strategy 2030.

Source: Authors' calculations based on data from the Ministry of Finance of Ukraine, n.d.

An extraordinary source of budget financing in 2022 was the direct purchase of state loan bonds by the National Bank of Ukraine in the amount of UAH 400 billion. In June 2022, the peak amount of the issue was recorded at the level of UAH 105 billion, which significantly exceeded the amount of taxes paid to the budget. In order to maintain macroeconomic stability, the use of this type of coverage of budget expenditure items should be strictly limited.

3. Priorities for the formation of state budget revenues in the conditions of combating military aggression

The memorandum with the IMF contains provisions on the need to identify all possible measures aimed at increasing the fiscal significance of taxes (IMF, 2023). The timeliness and completeness of providing our defenders with the necessary means, equipment and weapons will depend on the effectiveness of the fiscal policy. The approved National Revenue Strategy clearly indicates that the priority of state policy is to increase budget revenues on a sustainable basis, close existing opportunities for tax evasion, increase the level of compliance with legislation and combat the shadow economy (National Revenue Strategy, 2023). Under modern conditions, the fight against the shadow economy and non-payment of taxes is an extremely important direction of the state's economic policy.

Coordination of state institutions' efforts, such as parliamentary committees, supervisory and law enforcement agencies, made it possible to secure additional budget revenues from taxation of gambling business, excise goods markets, etc. in 2023. Further systematic steps regarding the detinization of the economy and increasing the level of their effectiveness are important. For example, we estimate the additional reserve for the increase of tax revenues from the gambling business for 2024 to be UAH 5–6 billion. It is important to continue the joint measures of the Bureau of Economic Security of Ukraine (hereinafter BEB) and the National Bank of Ukraine to combat key schemes, miscoding and matching. Taxation of excise goods has a significant reserve in filling the state budget revenues. The focus of controlling and law enforcement agencies should be aimed at significantly reducing the volume of illegal trade in excise goods.

The Accounting Chamber established that the state loses about 9 billion a year from non-payment of taxes from the shadow alcohol market (Report of the Accounting Chamber, 2021). As of 2023, the share of the shadow market of alcoholic beverages is estimated to be close to 30%. The main sales channel for wholesale and retail consignments of counterfeit goods is the Internet, followed by retail and catering establishments. It is important to strengthen the effectiveness of the system of state control over the production and circulation of alcoholic beverages, the development of a risk-oriented system of excise tax control. According to the KANTAR study,

the share of illegal cigarette trade in Ukraine in 2023 was 21.8% of the total market volume, which led to the loss of budget revenues in the amount of over UAH 23 billion (Kantar, 2023). In view of the above, the priority measures to combat the shadow market of tobacco products are: increasing the functional efficiency of control bodies (BES, State Tax and Customs Service, National Police, State Border Service); strengthening of cooperation with European institutions and customs of EU member states bordering Ukraine in the field of combating the illegal circulation of tobacco products; increasing the effectiveness of the fight against smuggling; avoidance of tax shocks when excise tax rates are increased; introduction of a system of monitoring and control of the tobacco supply chain, because in the conditions of martial law, when the borders are closed, it is fundamentally important to identify the "oases" of counterfeit production of billions of cigarettes.

The illegal fuel market in Ukraine has led to irreversible losses of budget revenues in the amount of about UAH 8–9 billion in 2023. Certain gas stations or their networks sell illegal fuel from illegal production using pseudo-fiscal checks. In addition, the use of "pseudo" wholesale fuel trade schemes was recorded, while in fact fuel is sold at gas stations without payment transaction recorders – for cash. Official wages in some fuel trade networks are several times lower than the industry average, which may indicate the potential payment of wages in "envelopes" (Kuyun S., 2024). Coordinated efforts of state institutions to combat illegal production and circulation of excise goods can add tens of billions of hryvnias to the 2024 budget.

One of the provisions of the National Revenue Strategy is the restoration of the progressive scale of personal income tax rates. This tool is quite widespread for EU member states. However, a proportional scale operates in Bulgaria, Estonia, Romania, Hungary, the Czech Republic, and the tax rate in Bulgaria and Romania is 10%. Tinization of labor costs is one of the barriers to the restoration of progressive taxation. The range of losses from non-payment of personal income tax, military duty and social contribution is in the range of UAH 120-160 billion. The level of taxation is classically considered to be the fundamental reason for hiding incomes and shadowing the economy. The phenomenon of the shadow economy is a peculiar criterion for evaluating the rule of law and trust in the authorities in the context of the effectiveness of the use of paid taxes.

The research shows that in countries with a high level of institutional environment, the indicator of the shadow economy is significantly lower compared to countries where institutions are being transformed. The share of the shadow economy in Germany was 16.7%, Denmark – 18.4%, Sweden – 18.8%. At the same time, the value of this indicator for Romania was recorded at 34.8%, Lithuania – 35.3%, Bulgaria – 37.8% (Kelmanson et al., 2019). Although the level of taxation is one of the reasons for the existence of the shadow economy, it is not the dominant one. The other side of the problem is also important, how effectively taxpayers' funds are used. Therefore, the

unjustified introduction of progression can only deepen the issue of shadowing the economy. Even the National Strategy states that the implementation of progression is currently not possible due to the low level of public trust in the controlling bodies. In view of the above, it is important to ensure a number of prerequisites for the implementation of progression, ensuring the trust of taxpayers, comprehensive transformation of the simplified taxation system, integration of various state databases, and justification of the progression scale. Eliminating opportunities for abuse of the simplified taxation system and legalizing labor costs are basic prerequisites for the introduction of tax progression and priorities of the state fiscal policy. With the parallel existence of opportunities to pay only 5% of the amount of income received for the reporting tax period and to pay the minimum amount of a single contribution (for the minimum wage), any intentions to introduce a progressive scale will have a rather low effectiveness and will not have the confidence of economic agents in the taxation system in as a whole

In 6 months of 2023, 19.9% of Ukrainians who received a salary (7.4 million people) received it in the amount of the minimum level or below it; 53.4% – in the range from 6.7 to 20 UAH thousand; 25.5% – from 20.1 to UAH 100.5 thousand; 1% – from 100.5 to 200 thousand, 0.2% – more than UAH 200 thousand (National Income Strategy, 2023). The State Tax Service of Ukraine does not have data on the incomes of 30% of persons registered in the state register of natural persons. According to the fiscal authority, 7.4 million people (excluding pensioners, children and persons registered in the occupied territories) have not received income since the beginning of the full-scale invasion. This indicates a significant level of shadowing of incomes. The justification of the progression scale is the most debatable issue, it is important to determine the optimal gradations of the income level that is subject to increased taxation. It is possible to set a threshold of 5, 7 or 10 minimum wages. The increased personal income tax rate for a 10-fold excess of the minimum wage was already functioning, but this practice did not have a significant fiscal effect for the state and local budgets.

Conclusions

Based on the research of the retrospective experience of budget financing in the context of intense military conflicts, it is determined that the role of taxes in this process has been constantly increasing. If in the eighteenth century this was treated rather skeptically, focusing primarily on loans and seigniorage, then the two world wars of the twentieth century and military conflicts of the second half of the twentieth century – early 2010s demonstrated a rapid increase in the share of taxes in financing military expenditures. During the two world wars, developed countries have resorted to raise personal income tax and corporate income tax rates. At the same time, a significant role in financing the budget during military

conflicts belongs to state borrowing, their active distribution, the US authorities meaningfully and reasonably appealed to society that state borrowing in wartime is the price for freedom.

At the initial stage of the full-scale armed aggression in Ukraine, a number of tax incentives were applied to support households and enterprises. This concerned the reduction of fuel taxes, the exemption from taxation of the import of vehicles, the formation of a favorable tax regime for enterprises, preferential taxation of electric generators, batteries, transformers, etc.

The duration of the war and the need to finance defense expenditures led to a reversal of fiscal policy from a stimulating to a compensatory type. Excise tax and VAT rates were returned to the pre-war level, the preferential tax regime for enterprises was abolished. Instead, an increased income tax rate was introduced for banks, given the multiple growth of their profits from deposit certificates and personal income tax; control over gambling business activities has been strengthened; part of income from personal income tax from income taxation in the form of monetary support for military personnel is credited to the state budget. These measures contributed to an increase in the fiscal significance of tax revenues to the state budget in 2023 compared to 2022 by 0.5% of GDP.

State measures to counter tax evasion and combat the shadow economy have significant fiscal potential. Further actions to cover up miscoding and matching schemes in the gaming business may bring UAH 5–6 billion to the budget in 2024. Strengthening the effectiveness of the system of state control over the production and circulation of alcoholic beverages; development of a risk-oriented system of excise tax control; increasing the functional efficiency of control bodies; strengthening of cooperation with European institutions and customs of EU member states bordering Ukraine in the field of combating the illegal circulation of tobacco products; increasing the effectiveness of the fight against smuggling will help increase tax revenues by UAH 20–25 billion.

The prospects for the introduction of progressive income taxation have been assessed. The prerequisites for introducing the progressive scale of personal income tax have been determined, ensuring the trust of taxpayers; improving the simplified taxation system; unification of state databases; scientific justification of the taxation scale. It is necessary to minimize the possibilities of abuse by business entities using the simplified system and to intensify activities related to the de-identification of labor costs. In addition, taxes on labor have the most destructive effect on the processes of economic growth. Therefore, the state should find a balance between filling the budget to finance the army and ensuring conditions for sustainable economic recovery.

In further studies, it is planned to reveal the issue of assessing the impact of a potential increase in the tax burden on economic growth in the medium term, as well as to investigate the leading foreign experience (primarily the EU) regarding detinization of wages.

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LABOR PRODUCTIVITY IN RETAIL TRADE

In the conditions of the war and the post-war Ukrainian economic recovery, human capital is one of the determining factors of the state's existence and ensuring its competitiveness. The loss of human capital has caused a shortage of labor resources in various sectors of the economy, which affects the possibilities of generating income and, as a result, financial results of economic entities. One of the largest components of the Ukrainian economy, which fills the budgets of all levels and creates jobs, is retail trade, which accounts for a significant share of employees among all types of economic activity. The dependence of the revenue amount from the sale of products (goods, services) on the amount of use of economic resources, including labor resources, is widely known. In view of the need for post-war reconstruction against the background of a shortage of labor resources, the aim was set to verify the truth of the principles of the relationship between the scope of activities and the amount of resources used, formulated back in the days of neoclassical economics. Verification of the truth of the formulated

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ПРОДУКТИВНІСТЬ ПРАЦІ В РОЗДРІБНІЙ ТОРГІВЛІ

В умовах воєнного стану та повоєнного відновлення економіки України саме людський капітал є одним із визначальних чинників існування держави та забезпечення її конкурентоспроможності. Втрати людського капіталу обумовлюють дефіцит трудових ресурсів у різних галузях економіки, що впливає на можливості формування обсягів доходів та, як наслідок, фінансових результатів у суб'єктів господарювання. Однією з найбільших складових української економіки, що наповнює бюджети усіх рівнів та створює робочі місця, є роздрібна торгівля, на яку припадає помітна частка найманих працівників серед усіх видів економічної діяльності. Широковідома залежність обсягу виручки від реалізації продукції (товарів, послуг), обсягів використання економічних ресурсів, у тому числі ресурсу праці. З огляду на потребу повоєнної відбудови на тлі дефіциту трудових ресурсів поставлено мету перевірити істинність сформульованих ще за часів неокласичної економіки принципів взаємозв'язку обсягів діяльності та величини задіяних ресурсів. Перевірку істинності



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hypotheses was carried out on the basis of the use of correlation methods and regression analysis. According to the calculation results, it was not possible to fully illustrate the direct proportional dependence of revenue on the average number of employees for the formed sample of retail trade enterprises. There is also a lack of direct relationship between revenue and labor productivity for both larger and smaller retail enterprises. Further research will be aimed at substantiating other samples of Ukrainian retail trade enterprises and finding interdependencies between their scope of activity and the amount of economic resources involved in the conditions of war and post-war recovery.

Keywords: human capital, labor resources, labor productivity, scale effect, retail trade enterprises, correlation analysis, regression analysis.

сформульованих гіпотез проведено на основі використання методів кореляційно-регресійного аналізу. За результатами проведених обчислень повною мірою не вдалося проілюструвати прямопропорційну залежність виручки від середньої кількості працівників для сформованої вибірки підприємств роздрібної торгівлі (ПРТ). Також спостерігається відсутність прямопропорційного зв'язку між виручкою та продуктивністю праці як для більших ПРТ, так і для менших. Подальші дослідження будуть спрямовані на обґрунтування інших вибірок ПРТ України і пошук взаємозалежностей між їх обсягами діяльності та величиною задіяних економічних ресурсів в умовах війни і повоєнного відновлення.

Ключові слова: людський капітал, трудові ресурси, продуктивність праці, ефект масштабу, підприємства роздрібної торгівлі, кореляційний аналіз, регресійний аналіз.

JEL Classification: M21, J21, C12.

Introduction

On February 24, 2022, Russia launched a full-scale invasion of the territory of Ukraine, as a result of which Ukraine suffered significant losses of human capital, which should be divided into two groups: direct and indirect. Direct losses include forced migration, forced deportation of the population of Ukraine to Russia, the killing of civilians, and the death of military personnel. Indirect losses should include the lack of business income by entrepreneurs and wages by employees and, most importantly, the inability to fully use the intellectual and creative potential of human capital due to military operations on the territory of Ukraine. These losses cause a shortage of labor resources in various sectors of the economy, which affects the possibilities of generating income and, as a result, financial results of economic entities.

One of the largest components of the Ukrainian economy, which fills the budgets of all levels and creates jobs, is retail trade. And in wartime, this area of business remains one of the key ones, providing civilians and military with food, medicine, means of communication and other vital goods. According to official data of the State Statistics Service of Ukraine (State Statistics Service of Ukraine, 2024), the number of employees in business entities of economic activity type G "Wholesale and retail trade; repair of motor vehicles and motorcycles" in 2022 amounted to 1 309 998 people (21.5% of the total number of employees in all types of economic activity), including the number of employees in trade enterprises there are 962 354 people.

Taking into account the significant economic and social importance of retail trade, we consider it expedient to use statistical tools to analyze the dependence of the activity of retail trade enterprises on changes in the number

of employees under martial law. The research is based on two hypotheses. Hypothesis 1 is about a larger volume of the enterprise's operational activity, characterized by a larger volume of sales of products (goods, services) for a certain short-term unit of time, implies an increase in the use of the economic resource of labor and capital, if there is no increase in the intensity of labor, the development of technologies and innovations in business processes that make it possible to reduce the need for resources. Hypothesis 2 deals with an increase in the volume of products sales (goods, services) of the enterprise for a certain short-term unit of time increases the effect of scale and, as a result, increases the return (efficiency) of the economic resources used, including labor and capital resources.

The given hypotheses, if considered under other equal conditions (*ceteris paribus*), intuitively do not cause objections and are fully consistent with the general principles of neoclassical economic theory, whose representatives include such foreign scientists as: Alfred Marshall (Marshall, 1997), Vilfredo Pareto (Pareto's, 2014), John Clark (Clark, 1925), Irving Fisher (Fisher, 1913), Jacob Viner (Viner, 1940), Frederick M. Scherer, David Ross (Scherer & Ross, 1990) and others.

The neoclassical concept is distinguished by its analytical approach, in which mathematical methods play an important role. Speaking about the dependence of the volumes of activity and the amount of costs incurred/resources used, microeconomic analysis involves, among other things, the use of correlation-regression analysis methods in order to build a paired (study of the relationship between resource costs and the volume of activity) or multiple (taking into account such variables, such as the degree of capacity utilization, differences in the service life of elements of fixed capital (in technologies), prices for production factors, the number of product names, the total volume of activity, etc.) regression dependencies (Azmuk & Shcherbatyuk, 2014).

The theoretical and methodological foundation of the research is also formed on the basis of resource concepts, which assume that the competitive advantage in the market is not products or strategic market segments, but resources that form the strategic competencies of enterprises of various types of economic activity.

Thus, A. Loyshyn (Loyshyn, 2021) in his research conducted an analysis of economic theory and the theory of strategic management regarding the presence of theoretical provisions on the transformation of the content of the economic category "resources" and resource concepts for understanding their scientific content and prerequisites for development for the development of a modern concept of resource provision security and defense sector of Ukraine. Features of resource provision of strategic development based on an innovative approach in tourism in modern conditions are highlighted in the article by N. I. Hladynets (Hladynets, 2018). The problem of managing the resource potential of transport enterprises is disclosed in the work (Borysyuk & Simkova, 2020). There are numerous scientific studies devoted to the effective use of

resources by agricultural enterprises. In particular, in the works (Bagan, 2021; Smirnova, Smirnov & Yuzik, 2020), thorough studies of the peculiarities of the formation and use of the resource potential of agricultural enterprises were conducted. The article Adamenko, Vysochyn, Sytnyk, Olesenko & Blazhenko (2023) talks about the impact of resource provision on the forecast volume of retail turnover of Ukrainian trade enterprises in conditions of uncertainty and global fluctuations.

One of the key elements of the resource potential of enterprises is labor resources; the study of the state of their use in wartime conditions is of great importance. Thus, a thorough assessment of the level of loss of labor resources in Ukraine due to forced migration was carried out in the work of Y. Chirva and A. Zaverbny (Chirva & Zaverbny, 2022). Seryogina (Seryogina, 2022) also investigated the impact of the war on productive employment in Ukraine. O. S. Zhuk and T. V. Pashkuda (Zhuk & Pashkuda, 2022) conducted an analysis of the main approaches to improving labor efficiency management at the enterprise in wartime conditions. At the same time, systematic studies of the state of use of labor resources by enterprises in the trade sphere of Ukraine in wartime conditions were not conducted.

The aim of the article is to identify arguments in favor of confirming the given hypotheses on the basis of empirical data for a group of the same type of enterprises of a particular type of economic activity under the conditions of shocks in the economy caused by the war. For Ukraine, the confirmation of both hypotheses is fundamentally important in view of the need for post-war reconstruction against the background of a significant shortage of economic resources (primarily, labor resources).

The object of the research is the operational activity of enterprises belonging to class 47.11 "Retail trade in non-specialized stores mainly of food, beverages and tobacco products" according to the economic activity classifier (National Classifier DK 009:2010, 2010), under martial law.

Consideration of enterprises whose main activity belongs to only one class of economic activity is related to the need to observe the condition of homogeneity to test the given hypotheses, since data for different classes are unsuitable for this.

The choice of class 47.11 is due to the fact that in 2022 it was one of the largest both in terms of activity and in terms of resources used among enterprises not only in section G "Wholesale and retail trade; repair of motor vehicles and motorcycles", but also in general in the sphere of non-financial business* economy of Ukraine. As evidenced by the data in the *Table 1*, class 47.11 has a second weighted average rank, which was calculated on the basis of four key indicators, taking into account their importance in the current situation, established by an expert.

* Terminology is subject to the Regulation (EU) 2020/1197 of 30.07.2020 on European enterprise statistics and non-financial business economy (Commission Implementing Regulation (EU), 2020). It unites enterprises with the main type of economic activity such as B+C+D+E+F+G+H+I+J+L+M+N+95 according to KVED-2010 (National Classification SC 009:2010, 2010).

The rank of class 46.90 "Non-specialized wholesale trade" turned out to be the highest, but this class includes so many different enterprises (from classic wholesale enterprises that have a powerful warehouse base and participate in settlements to agent enterprises that work for a commission fee) that based on their data, testing any hypotheses is problematic (the homogeneity condition for key indicators is not met). This determined the choice for the study of class 47.11, and not the entire general population, but only the largest enterprises of this class that have a network of retail facilities (stores).

Table 1

The largest classes among types of economic activity of enterprises of the non-financial business economy in Ukraine for 2022

Class (according to KVED-2010)		Number of operating enterprises, units	Volume of sold products*, billion UAH	The number of employees, thousand persons	Total value of assets, billion UAH	Rank**
code	Title					
41.20	Construction of residential and non-residential buildings	10262	116,1	99,9	351,1	4
46.73	Wholesale of wood, building materials and sanitary-technical equipment	5126	100,4	34,7	79,3	8
46.90	Non-specialized wholesale trade	15203	551,5	105,8	596,9	1
47.11	Retail trade in non-specialized stores mainly of food, beverages and tobacco products	3116	451,1	206,2	174,2	2
49.41	Freight road transport	5664	117,9	79,7	139,6	5
52.29	Other auxiliary activities in the field of transport	3704	115,6	58,1	119,7	6
62.01	Computer programming	3621	124,0	27,5	49,6	7
68.20	Leasing and operation of own or leased real estate	23276	110,7	107,2	699,4	3
69.10	Activities in the field of law	3843	14,5	13,6	22,9	11
71.12	Activities in the field of engineering, geology and geodesy, provision of technical consulting services in these areas	3178	20,2	30,1	80,5	9
80.10	Activities of private security services	3136	17,8	51,2	12,4	10

* According to the institutional approach.

** Weighted average taking into account the weight (significance) of indicators: number of operating enterprises – 1; volume of sold products – 3; number of employees – 4 (the most important and scarce resource in wartime); total value of assets – 2.

Source: author's development based on data (State Statistics Service of Ukraine, 2024).

Despite the difficult situation in the country, the State Statistics Service of Ukraine and projects supporting analytical systems and open data portals, in particular (YouControl, 2024) and (Opendatabot, 2024), continue to publish information about the activities of domestic enterprises, providing an opportunity to create a database of empirical data for economic research. In this study, the data on the activities of the largest 135 retail trade enterprises (RTE) of class 47.11, in which the net income from the sale of products (goods, services) in 2022 exceeded UAH 100 million, served as the information base. The choice of this limit is connected with the need to form such a sample, for which the condition of homogeneity was ensured for the main indicators of the return of economic resources – in the case of the inclusion of enterprises smaller in terms of activity, the condition of general homogeneity of the sample was not fulfilled.

The *Table 2* is characterized the main parameters of the formed sample of enterprises.

Table 2

The main parameters of the retail trade enterprise, belonging to class 47.11 according to KVED-2010, in Ukraine for 2022

Indicator	All enterprises of class 47.11	Enterprise samples of class 47.11	Sample share, %
Number of operating enterprises, units	3 116	135	4.3
of them:			
large	22	22	100.0
Medium	163	113	69.3
Volume of sold products, million hryvnias	451 116	422 792*	93.7
Number of employees, persons	206 241	178 730**	86.7
Total value of assets***, million UAH	174 171	156 579	89.9
of them, negotiable	96 856	82 323	85.0

* Net income from product sales according to the financial results report.

** Aggregate average number of employees according to the data of the preamble (initial information) of the balance sheets of enterprises concluded in accordance with NP(S)BO 1 (NP(S)BO 1, 2013)

*** Here, in the following tables and text for indicators that are items of the balance sheet (report on the financial condition) of the enterprise, the values at the end of the year are given.

Source: Author's development based on data (State Statistics Service of Ukraine, 2024; YouControl, 2024; Opendatabot, 2024).

Although the sample covers only 4.3% of the total number of class enterprises, it accounts for the main share of the volume of products sold and resources used, as evidenced by the data in the *Table 2*.

In the first section of the article, methodological caveats are defined and the composition of the sample of researched retail enterprises is substantiated. In the second, a correlation analysis was conducted between sales revenue for a sample of retail trade enterprises belonging to class 47.11 and the amount of economic resources involved. The third section is devoted to conducting a regression analysis of the relationship between the average number of employees and revenue for a sample of the studied enterprises. In the last, fourth chapter, labor productivity is analyzed.

1. Methodological caveats and sample composition

The data of the specified sample of enterprises do not allow to fully verifying the truth of the formulated hypotheses, all other things being equal (*ceteris paribus*), as required by economic theory, but they can illustrate a statistical relationship that should not contradict essential laws.

The identification of a statistical relationship between the indicators for the formed sample of enterprises does not yet provide sufficient grounds for ascertaining the existence of an economic regularity, since, firstly, the sample unites a large number of various enterprises, each of which, although it has a common main type of economic activity, functions in specific (sometimes unique) conditions, has a special system of factors influencing internal and external environments; secondly, in the data for 2022, the numerical values of economic indicators reflect at least 3 different stages associated with the deployment of large-scale military operations on the territory of Ukraine and characterized by structural shifts within the sample of enterprises, as well as institutional changes in the economy and society in general:

- January – February (until February 24) – the stage before the start of a large-scale invasion;
- from February 24 to (approximately) the beginning of April – the shock stage (a large part of the enterprises did not function);
- since April – functioning under martial law.

The enterprises included in the sample can be divided into 4 groups depending on the amount of net income (revenue) from the sale of goods* for 2022:

the largest – with revenue exceeding UAH 2 billion;

larger medium ones – with revenue from UAH 500 million to UAH 2 billion;

smaller average ones – with revenue from UAH 200 million to UAH 500 million;

the smallest – with revenue not exceeding UAH 200 million.

* The titles of indicators that take into account the specifics of the main activity of trade enterprises are used hereby.

The composition of the sample in terms of the specified groups is illustrated in the *Table 3*.

Table 3

Composition of retail trade enterprise samples, belonging to class 47.11 according to KVED-2010, in Ukraine for 2022

Indicators	Group of enterprises				Total
	largest	higher average	smaller average	smallest	
Number of enterprises, units.	20	45	32	38	135
Revenue, UAH million	365 500	41 147	10 441	5 705	422 792
Average number of employees, persons	142 062	23 970	8 472	4 226	178 730
Total assets, UAH million of which:	131 859	15 455	4 091	5 174	156 579
current	60 128	13 743	3 514	4 938	82 323
irrevocable	71 731	1 712	577	235	74 255

Source: author’s development based on data (YouControl, 2024; Opendatabot, 2024).

As evidenced by the data in the *Table 3*, the sample is dominated by the group of the largest RTEs – it accounts for the main share of revenue and resources used. The share of this group of enterprises in the total revenue of the sample (*Figure 1*) is especially significant – 86.4%, and even more in the amount of non-current assets – 96.6%.

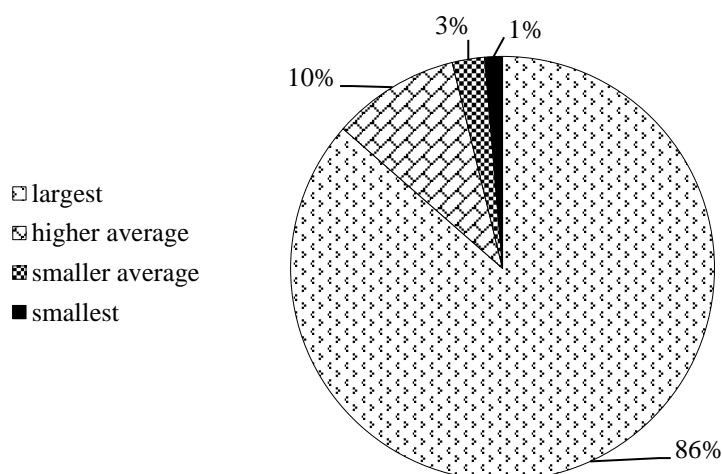


Figure 1. The structure of revenue in a sample of retail trade enterprises belonging to class 47.11 according to KVED-2010 in Ukraine in 2022.

Source: Author’s development based on data (YouControl, 2024).

The share of the group of the largest enterprises in the sample for other key indicators is: number of enterprises – 14.8%; average number of employees – 79.5%; total assets – 84.2%; current assets – 73.0%.

Thus, a feature of the formed sample is the presence in its composition of two leading enterprises, LLC "ATB-MARKET" and LLC "SILPO-FOOD", which account for more than half of the entire revenue of the sample (*Table 4*).

Table 4

Leading companies in the sample of retailers, belonging to class 47.11 according to the Classifier of Types of Economic Activities 2010 in Ukraine in 2022

Indicators	ATB-MARKET	SILPO-FOOD	Leading companies, total	Share of leading enterprises, %	
				in a group of large enterprises	in the sample in general
Revenue, UAH million	148 333	69 991	218 323	59.7	51.6
Average number of employees, persons	48 872	36 496	85 368	60.1	47.8
Total assets, UAH million	41 086	33 934	75 021	56.9	47.9
of which:					
current	17 979	11 454	29 433	49.0	35.8
irrevocable	23 107	22 481	45 588	63.6	61.4

Source: Author’s development based on data (YouControl, 2024; Opendatabot, 2024).

This dominance of the group of the largest and leading enterprises in the sample is a factor that increases its heterogeneity. However, it does not lead to the recognition of the overall heterogeneity of the sample and, as a result, the impossibility of using the sample data to identify statistical patterns.

2. Correlation analysis

The values of the pairwise correlation coefficients obtained using the Excel Data Analysis – Correlation procedure and contained in the correlation matrix (*Table 5*) indicate a very strong direct statistical relationship between the key performance indicators of the sample companies, except for equity.

Given the sufficiently large sample size, it makes no sense to test the statistical significance of the correlation coefficients presented in *Table 5* using Student’s t-test (or any other alternative method). It is only necessary to pay attention to the debatable analytical value of the pairwise correlation

coefficients for the total amount of assets with the indicators that are its components, namely the amounts of: non-current assets, current assets and current liabilities.

Table 5

Correlation matrix for a sample of retailers,
belonging to class 47.11 according to KVED – 2010 in Ukraine for 2022

Indicators	Revenue	ANE	NCA	CA	A	EC	CL
Revenue	1						
ANE	0.9753	1					
NCA	0.9314	0.9768	1				
CA	0.9641	0.9615	0.9341	1			
A	0.9600	0.9864	0.9891	0.9764	1		
EC	-0.0478	-0.2014	-0.3451	-0.1639	-0.2761	1	
CL	0.9355	0.9783	0.9814	0.9660	0.9910	-0.3544	1

Conventional notation: ANE – the average number of employees; NCA – non-current assets; CA – current assets; A – assets, total; EC – equity capital; CL – current liabilities.

Source: Author’s development based on data (*YouControl, 2024; Opendatabot, 2024*).

The results obtained, which indicate a strong linear statistical relationship, do not contradict hypothesis 1 – a larger volume of operating activities of the sample enterprises, characterized by a larger annual volume of sales of goods (higher revenue for the year), implies a larger volume of use of the economic resource of labor and capital. Similarly, an increase in the use of one economic resource within an annual period is accompanied by a directly proportional increase in the use of other resources.

A special situation is observed with regard to the equity capital of the sample enterprises: all values of the pairwise correlation coefficients for this indicator are negative and indicate a weak statistical relationship with revenue and other resources involved. This phenomenon requires further in-depth research.

3. Regression analysis of the relationship between the average number of employees and revenue.

Hypothesis 1 and the obtained value of the correlation coefficient of 0.9753 for the average number of employees and revenue in the sample of enterprises (*Table 5*) caused the initial choice of a simple (paired) linear regression model to describe the statistical relationship between these indicators.

The use of the Excel Data Analysis – Regression procedure made it possible to calculate the parameters of this model and check their statistical significance. At the initial stage, it was found that the free term in the equation of the straight line is not statistically significant, therefore it is removed from the model, as a result of which the following paired linear regression function is obtained:

$$Y = 2.61952 X, \quad (1)$$

where Y – is revenue;

X – is the average number of employees.

Although the coefficient of determination (R-square) for model (1) is 0.9506, it turned out to be unsuitable for explaining the variation of the variable Y due to the presence of heteroskedasticity of the residuals.

The verification of the statistical hypothesis about the absence of heteroscedasticity of the residuals of model (1) was carried out using the Goldfeld-Quandt test. During the implementation of the method (Kon-dius, 2022), 2 subsamples of the largest and smallest values of X with 51 values each were selected. Linear regression models were constructed for both subsamples and residuals were calculated. The calculated value of the Fisher statistic (1098.87), calculated as a fraction of the sum of the squared residuals for the subsample of the largest values divided by the sum of the squared residuals for the subsample of the smallest values, turned out to be significantly greater than the tabular (critical) value of the Fisher statistic (1.607) for the significance level $\alpha = 0.05$ and degrees of freedom (freedom) v_1 and v_2 , which are determined by the number of values in the subsamples and the number of parameters of the linear regression model ($v_1 = v_2 = 49$, taking into account the removal of the free term from the equation of the line). This made it possible to reject the H_0 hypothesis about the absence of heteroscedasticity of the residuals for model (1).

If you build a paired linear regression model based on logarithmic data, trying to eliminate heteroscedasticity, the result will be a function (*Figure 2*)*:

$$Y^* = 0.89394 X^* + 1.20496, \quad (2)$$

where Y^* – is the natural logarithm of revenue ($\ln Y$);

X^* – is the natural logarithm of the average number of employees ($\ln X$).

If we perform the potentiation of equation (2), we will obtain a power function:

$$Y = 3.33664 X^{0.89394}. \quad (3)$$

* Both parameters of this model, the angular coefficient (slope) and the free term (shift) are statistically significant, as evidenced by the SUMMARY OUTPUT data of the Excel Data Analysis – Regression procedure. The obtained p-values (p-value) for both parameters are much smaller than the significance level $\alpha = 0.05$

In function (3), the power indicator of 0.89394 is the coefficient of elasticity of revenue to changes in the number of employees. Its value is less than one, which could indicate a low elasticity of income from the use of labor resources in case of confirmation of the adequacy of the regression model.

But functions (2) and (3) are not the final results of the regression analysis of the relationship between the average number of employees and revenue for the sample of retail trade enterprises, because they are not statistically adequate for two main reasons.

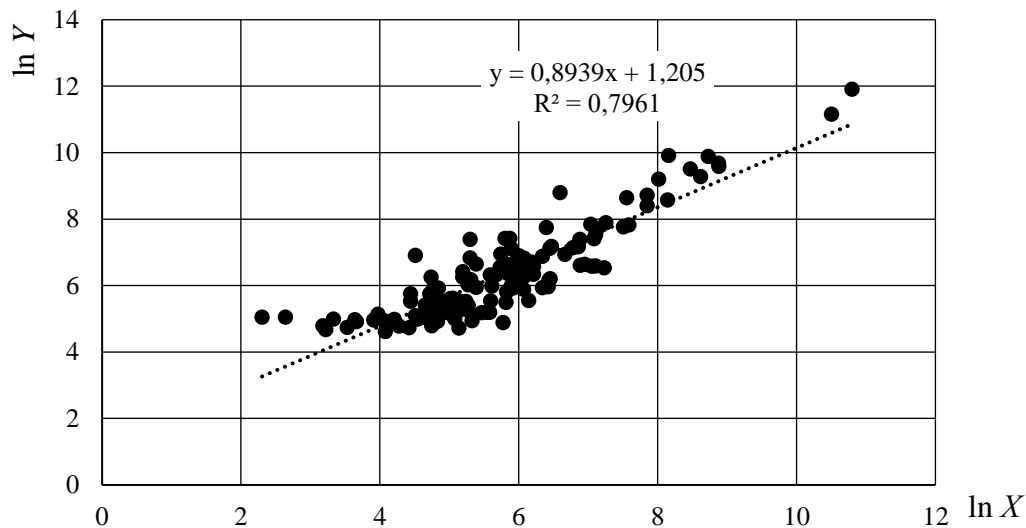


Figure 2. Statistical linear relationship between the logarithmic values of the average number of employees and revenue in a sample of retail trade enterprises belonging to class 47.11 according to KVED-2010 in Ukraine for 2022

Source: Author’s development based on data (*YouControl, 2024; Opendatabot, 2024*).

First, the logarithmization of the data did not allow to completely eliminate the heteroscedasticity of the residuals. Checking the statistical hypothesis H_0 about the absence of heteroscedasticity of the residuals of model (2) using the Goldfeld-Quandt method made it possible to obtain the estimated value of the Fisher statistic – 1.6655, which exceeds the critical value – 1.6154 (for the significance level $\alpha=0.05$ and degrees of freedom $\nu_1 = \nu_2 = 48$). This result gives reason to reject the H_0 hypothesis about the absence of heteroscedasticity of the residuals. Given that the detected excess is insignificant, heteroskedasticity can be ignored only if the significance level of α is reduced, or the sample data is further transformed using more complex statistical techniques, or the least squares method is abandoned for determining the regression parameters in favor of more complex methods.

Secondly, the residuals of model (2) visually demonstrate a complex serial correlation (*Figure 3*), the verification of which using the Durbin-Watson test was inconclusive (it did not allow drawing certain conclusions).

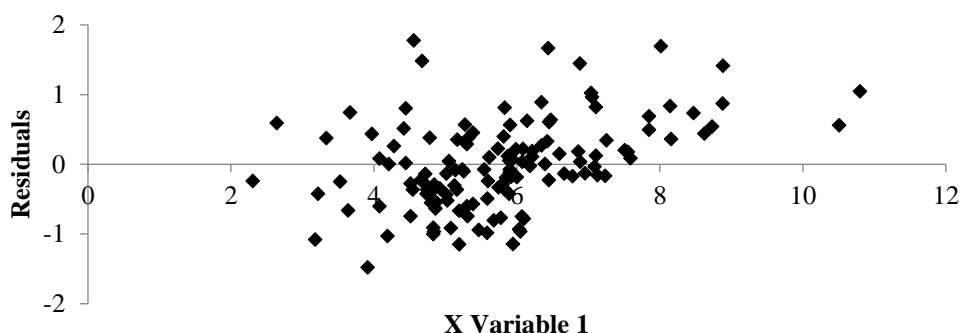


Figure 3. Residuals of the linear regression model for logarithmic values of the average number of employees and revenue in a sample of retail trade enterprises belonging to class 47.11 according to KVED-2010 in Ukraine for 2022

Source: Result of Excel Data Analysis – Regression based on data (*YouControl, 2024; Opendatabot, 2024*).

Therefore, for the final justification of the conclusion about the adequacy of regression models (2) and (3), it is necessary to apply more complex statistical methods.

A similar result (without final certainty regarding the adequacy of the regression model) was obtained for the group of the twenty largest enterprises, which account for the bulk of the revenue and number of employees of the formed sample of retail trade enterprises. Unlike the entire sample, in the paired linear regression model, based on logarithmic data, it was necessary to remove the free term, which turned out to be statistically insignificant. The model illustrates *Figure 4*.

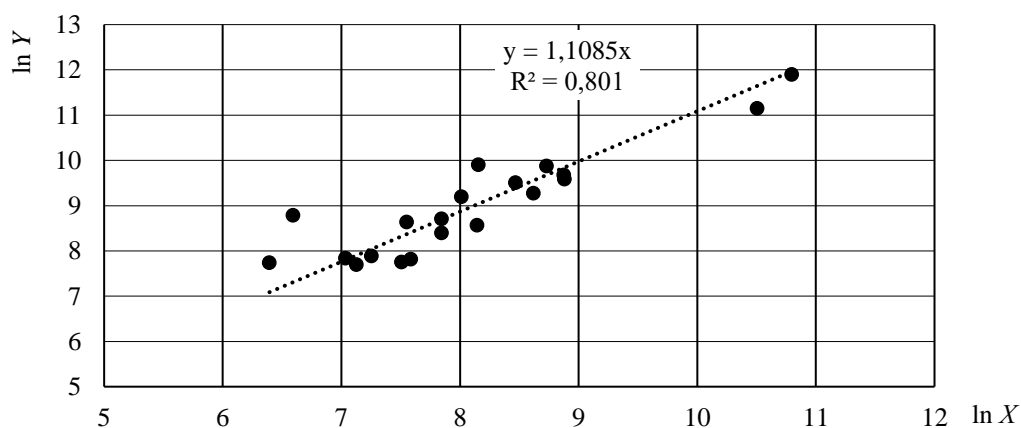


Figure 4. Statistical linear relationship between the logarithmic values of the average number of employees and revenue in the group of the largest enterprises of the formed sample for 2022*

Source: Author’s development based on data (*YouControl, 2024; Opendatabot, 2024*)

* According to the SUMMARY OUTPUT of the Excel Data Analysis – Regression procedure, the p-value (p-value) of the only parameter – the angular coefficient – of the constructed regression model is 2.47913E-25, which is practically equal to 0 and indicates its statistical significance.

Power function for the group of the largest enterprises based on the result of potentiation of the function in *Figure 4* has the form:

$$Y = X^{1.1085}, \quad (4)$$

where Y – is revenue;

X – is the average number of employees.

In contrast to the entire set of enterprises in the sample, the revenue of the largest enterprises is elastic to changes in the average number of employees, since the exponent in function (4) is greater than one.

Also, unlike the entire sample, for the group of the largest enterprises, it is impossible to verify the statistical hypothesis H_0 about the absence of heteroscedasticity of the residuals of the model in *Figure 4* using the Goldfeld-Quandt method due to insufficient number of observations. In our opinion, the simplest approach to substantiating the conclusion about the adequacy of the model in this situation is to check the statistical hypothesis H_0 about the normal distribution of residuals using the Shapiro-Wilk test, which is adapted specifically for a small number of observations (Shapiro & Wilk, 1965). The results of this test turned out to be ambiguous: the calculated value of the Shapiro-Wilk statistic – 0.892 is less than the critical value for the significance level $\alpha=0.05$ – 0.905, but exceeds the critical value for the significance level $\alpha=0.02$ – 0.884. In the case of using the significance level $\alpha=0.05$, the statistical hypothesis H_0 about the normal distribution of the residuals of the regression model in *Figure 4* contradicts the actual observation data and should be rejected, accordingly, the model itself is recognized as inadequate. And in the case of using the significance level $\alpha=0.02$ – on the contrary, H_0 does not contradict the actual observational data and the model can be recognized as adequate (heteroscedasticity and serial correlation of model residuals are ignored).

The specified problems (primarily – significant heteroskedasticity of the residuals) during the construction of a paired regression model to formalize the statistical relationship between the average number of employees and revenue both in the formed sample of enterprises in general and in the group of the largest enterprises are associated with a number of reasons, including the main ones are: firstly, the presence of two leading enterprises: LLC "ATB-MARKET" and LLC "SILPO-FOOD", secondly, a certain heterogeneity between groups of enterprises in the sample.

In contrast to the largest enterprises in the sample, for the rest of the groups no significant statistical relationship between the average number of employees and revenue was found (*Figure 5*).

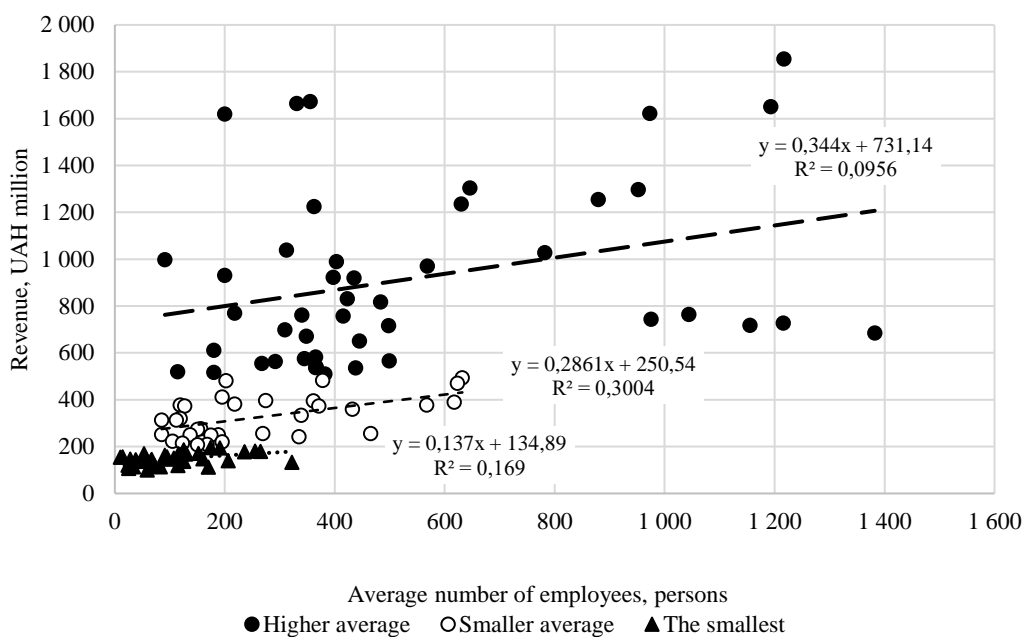


Figure 5. Statistical linear relationship between the average number of employees and revenue in the groups of medium and the smallest enterprises of the formed sample for 2022

Source: Author’s development based on data (YouControl, 2024; Opendatabot, 2024).

Thus, it was not possible to illustrate the truth of hypothesis 1 with the help of a regression model, which would predict a directly proportional dependence of revenue on the average number of employees for the formed sample of RTE.

4. Analysis of labor productivity

The indicator of revenue per employee, which is traditionally called labor productivity* in domestic sources of scientific and educational literature, characterizes the return of the economic labor resource and, according to hypothesis 2, due to the scale effect, should be greater in enterprises with higher revenue.

For the formed RTE sample, the labor productivity indicator is calculated as a share of the division of net income (revenue) from the sale of goods by the average number of employees according to financial reporting data. This approach is not entirely correct and implies a certain distortion of the result, since in the calculations it is necessary to use the indicator of the average accounting number of employees in the equivalent of full employment (Instruction on statistics of the number of employees, 2005), information about which is not publicly available for individual enterprises.

* This title is controversial, because some scientists understand productivity as a broader concept that characterizes continuous efforts to adapt economic activity to constantly changing conditions, the application of new theories and methods (Yeremenko, 2000, p. 23).

According to hypothesis 2, the largest average value of the labor productivity indicator is observed in the group of the largest retail trade enterprises in the sample. However, contrary to hypothesis 2, this indicator for the group of the smallest enterprises exceeds the value for both groups of medium-sized enterprises – larger medium and smaller medium – according to the data in the *Table 6*.

Table 6

Labor productivity of a retail trade enterprise sample,
belonging to class 47.11 according to KVED-2010, in Ukraine for 2022

Indicators	Group of enterprises				Total
	largest	higher average	smaller average	smallest	
Number of enterprises with labor productivity in the range of: 1) up to UAH 1000 thousand per 1 employee	–	5	9	7	21
2) 1000 – 1500	2	11	9	13	35
3) 1500 – 2000	6	11	5	5	27
4) 2000 – 2500	4	7	3	3	17
5) 2500 – 3000	2	1	4	1	8
6) 3000 – 3500	3	3	1	2	9
7) 3500 – 4000	1	1	1	2	5
8) over UAH 4000 thousand per 1 employee	2	6	–	5	13
total number of enterprises in the sample	20	45	32	38	135
Average labor productivity, UAH thousand per employee	2 813	2 395	1 628	2 485	2 300
Standard deviation, UAH thousand per 1 employee	1 800	1 935	845	2 906	2 084
Coefficient of variation, %	64.0	80.8	51.9	116.9	90.6

Source: Author’s development based on data (*YouControl, 2024; Opendatabot, 2024*).

Table 6 data demonstrate the lack of dependence of the coefficient of variation of labor productivity on the scale of enterprise activity. If the highest value of the coefficient of variation is quite naturally observed in the smallest enterprises, then the lowest value – in the group of smaller medium-sized enterprises against the background of the lowest value of average labor

productivity requires an additional in-depth study of the reasons that led to such a result (it is possible that this anomaly is somehow connected with the functioning of enterprises in the conditions of martial law, or is a coincidence).

The distribution of labor productivity values of the sample enterprises is illustrated by a histogram constructed using the Excel Data Analysis – Histogram procedure (*Figure 6*).

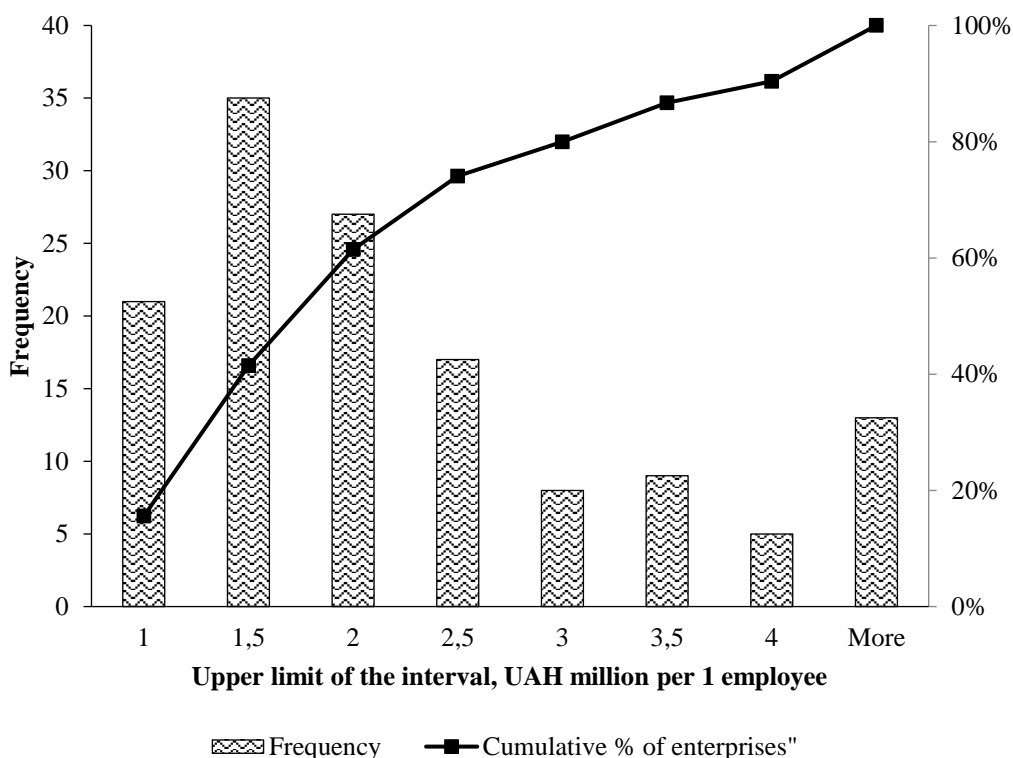


Figure 6. Histogram of labor productivity of enterprises of the formed sample for 2022

Source: Author’s development based on data (*YouControl, 2024; Opendatabot, 2024*).

Visually, the law of distribution of the random value of labor productivity in *Figure 6* is similar to lognormal. Verification of the statistical hypothesis H_0 about the lognormal distribution of labor productivity for retail enterprises belonging to class 47.11 according to KVED-2010 in Ukraine for 2022 using the criterion of consistency (agreement, agreement) Pearson’s chi-square (χ^2) confirms the visual assumption: the calculated value $\chi^2 = 5.364$, which is calculated according to formula (5) (Motsny, 2018), is less than the critical value $\chi^2 (0.05) = 11.07^*$, so the H_0 hypothesis does not contradict the observational data.

* Calculated using the Excel function CHISQ.INV.RT for the significance level $\alpha=0.05$ and degrees of fluency $\nu = k - r - 1 = 5$, where r – is the number of unknown parameters of the distribution calculated from the sample data, or, which is the same as the number of superimposed connections, the number of indices of the empirical series connecting the empirical and theoretical frequencies (in our case – the average value and standard deviation; $r = 2$).

$$\chi^2 = \sum_{j=1}^k \frac{(n_j - np_j)^2}{np_j}, \quad (5)$$

where n_j – is the empirical frequency for the j -th grouping interval (variants) of a random variable (in our case, the labor productivity of retail enterprises belonging to class 47.11);

p_j – is the probability of a random variable falling into the j -th grouping interval, provided that this random variable is subject to a hypothetical (in our case – lognormal) distribution law;

n – sample volume (amount of observation data); the product np_j – is the theoretical frequency for the j -th grouping interval of a random variable;

k – is the number of grouping intervals (in our case, $k = 8$, see *Figure 6*).

It can also be asserted that the logarithmic values of labor productivity of retail trade enterprises of class 47.11, according to observation data in 2022, are subject to the normal distribution law, contrary to existing differences in trade and technological processes and labor organization at individual enterprises, which hypothetically could make any comparison and generalization for this random variable.

The discovery of the specified law of distribution can be considered an element of scientific novelty, but only on the condition that the formed sample, which includes enterprises of different groups in terms of revenue, is homogeneous in terms of labor productivity. To test the statistical hypothesis H_0 about the homogeneity of the sample at the initial stage, the χ^2 Pearson homogeneity criterion was used, which involves the calculation of the calculated criterion indicator according to the following formula:

$$\chi^2 = \sum_{i=1}^l \sum_{j=1}^k \frac{(n_{ij} - \bar{n}_{ij})^2}{\bar{n}_{ij}}, \quad (6)$$

where l – is the number of subsamples (in our case – groups of enterprises depending on the amount of revenue in the formed sample; $l = 4$);

k – is the number of grouping intervals (in our case, $k = 8$, see *Figure 6*);

n_{ij} – is the actual number of elements of the i -th subsample that fell into the j -th grouping interval (these values can be seen in *Table 6*);

\bar{n}_{ij} – is the mathematical expectation of the number of elements of the i -th sub-sample that fell into the j -th grouping interval, provided that the statistical hypothesis H_0 about the homogeneity of the sub-samples is true.

According to the results of the verification, the calculated value $\chi^2 = 27.230$, which was calculated according to *formula (6)*, turned out to be less than the critical value $\chi^2(0.05) = 32.671^*$, therefore the H_0 hypothesis about the homogeneity of labor productivity values in the formed sample of enterprises does not contradict the observed data.

* Calculated using the Excel function CHISQ.INV.RT for the significance level $\alpha=0.05$ and degrees of fluency $\nu = (l - 1)(k - 1) = 21$.

But only one of these tests is not enough, given the dominance of the group of the largest enterprises in the sample and the results of the analysis of the statistical relationship between the number of employees and the revenue of enterprises in different groups – it is necessary to additionally perform a pairwise test of homogeneity using the more powerful Anderson homogeneity criterion. which involves the calculation of the calculated criterion indicator according to the formula:

$$a = \frac{1}{mn(m+n)} \left[m \sum_{i=1}^m (s_i - i)^2 + n \sum_{j=1}^n (r_j - j)^2 \right] - \frac{4mn-1}{6(m+n)}, \quad (7)$$

where a – is the estimated sample value of Anderson’s criterion statistical indicator (statistics);

s_i and r_j – are the ordinal numbers of indicators x_i and y_j in the combined population of two groups (subsamples), sorted by growth; x_i and y_j – in our case, are indicators of labor productivity for enterprises of two groups by revenue in the formed sample of retail trade enterprises of class 47.11 (for example, groups of the largest and smallest enterprises);

i and j – serial numbers (ranks) of indicators x_i and y_j in their own (separate) groups ordered by growth;

m and n – are the number of observations (enterprises) in each of the two groups.

The results of calculating the indicator a according to formula (7) form a matrix (*Table 7*); the upper right half is symmetrical relative to the diagonal, so it is not shown) of values for six possible pairs of comparisons of the homogeneity of four groups of enterprises of the formed sample.

Table 7

The matrix of values of Anderson’s calculated criterion statistical indicator for testing the homogeneity of data on labor productivity in groups of sample enterprises

Group	Largest	Larger average	Smaller average	Smallest
Largest	0			
Larger average	0.365	0		
Smaller average	1.127	0.489	0	
Smallest	0.798	0.288	0.121	0

Source: Author’s development based on data from (*YouControl, 2024; (Opendatobot, 2024)*).

In the *Table 7*, those calculated values of Anderson’s criterion statistical indicator, which exceed the critical value for the significance level $\alpha=0.05$ – 0.461, are highlighted in bold. There are 3 out of 6 such values. Therefore, in half of the cases of pairwise comparisons, the hypothesis about the homogeneity of groups (subsamples) of enterprises within the formed

sample contradicts the observational data and should be rejected. In particular, this applies to pairwise comparisons of the following groups of enterprises:

- the largest and smallest;
- the largest and smallest averages (it is for this pair that heterogeneity is the greatest);
- higher averages and lower averages.

In view of the obtained results of a pairwise homogeneity check, for the purposes of labor productivity analysis, the formed sample needs to be divided into 2 parts: the largest and larger medium ones – the next *larger* enterprises; smaller, medium and smallest – further *smaller* enterprises.

For both of the specified parts of the sample, the statistical hypothesis H_0 about the lognormal distribution of labor productivity is confirmed using the χ^2 Pearson consistency criterion, as evidenced by the data in the *Table 8*.

Table 8

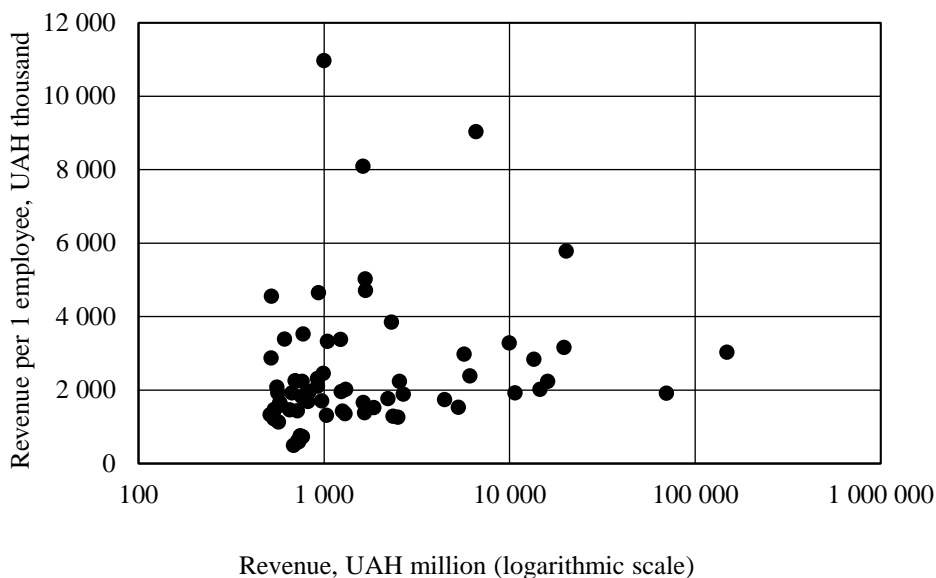
The results of testing the hypothesis about the lognormal law of the distribution of the random variable of labor productivity according to the χ^2 Pearson consistency criterion for larger and smaller enterprises of the sample

Indicators	Larger enterprises	Smaller enterprises
Distribution parameters, UAH thousand per 1 employee:		
mathematical expectation	2 524	2 093
standard deviation	1 890	2 243
Criterion indicator χ^2 :		
calculated value	1.126	3.279
critical value	3.841	7.815
Conclusion about the hypothesis of the law of distribution	The hypothesis does not contradict the observation data	The hypothesis does not contradict the observation data

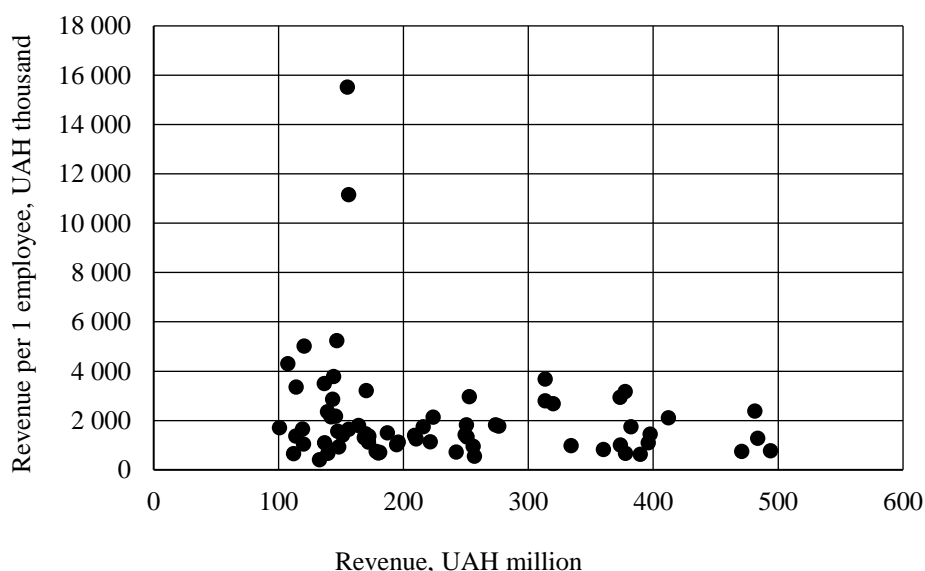
Source: Author’s development based on data (*YouControl, 2024; Opendatabot, 2024*).

Just as for the aggregate sample, the random variable of labor productivity separately for larger and smaller enterprises has the same lognormal distribution law, but with different parameters according to the *Table 8*. Larger enterprises have a higher value of the mathematical expectation, which does not contradict the initial hypothesis 2, and a lower value of the standard deviation, which is also quite natural.

Contrary to hypothesis 2, an increase in labor productivity is not observed with an increase in the scale of the enterprise’s activity, which is characterized by the indicator of the amount of revenue, as shown in *Figure 7*.



a



b

Figure 7. Statistical relationship between revenue and labor productivity (the indicator of revenue per 1 employee) for the formed sample for 2022: a) larger enterprises; b) smaller enterprises

Source: Author’s development based on data (*YouControl, 2024; Opendatabot, 2024*).

On the scatter diagrams shown in *Figure 7*, it is visually observed that there is no directly proportional relationship between revenue and labor productivity for both larger retail enterprises of class 47.11 and smaller ones. Thus, it was not possible to illustrate the truth of hypothesis 2 and to find arguments for its confirmation based on the data of the formed sample.

Conclusions

The war has significantly limited the labor resources for all sectors of the economy, retail trade was no exception, and, as is known, the effectiveness of the enterprise depends on the level of supply of employees with the necessary qualifications and experience.

In view of the need for post-war reconstruction against the background of a shortage of labor resources, the goal is to verify the truth of the principles of the relationship between the scope of activities and the amount of resources used, formulated back in the days of neoclassical economics. According to the results of calculations based on empirical data for a group of retail enterprises of the same type, no confirmation of the formulated hypotheses was found.

Thus, for domestic retail enterprises that belong to class 47.11 according to KVED-2010, in the conditions of martial law, the regularity of the labor resource in accordance with the hypothesis, which states that the larger volume of operational activity of the enterprise, which is characterized by a larger volume of sales of products (goods, services) for a certain short-term unit of time, implies a greater amount of use of the economic resource of labor and capital, if there is no increase in labor intensity, development of technologies and innovations in business processes that allow to reduce the need for resources, it does not come true. Final confirmation of this assumption requires further in-depth research, including on the basis of empirical data from other samples of Ukrainian retail trade enterprises.

According to the results of the calculations, there is a reason to assume that the theoretical hypothesis that an increase in the volume of sales of products (goods, services) of the enterprise for a certain short-term unit of time strengthens the effect of scale and, as a result, increases the return (efficiency) of the economic resources used, including the resource of labor and capital, in the conditions of martial law has no practical significance, at least for RTE class 47.11. Perhaps due to the fact that enterprises with a larger scale of operations also experience greater losses in connection with a large-scale military invasion (thus the advantage of the scale of operations is neutralized by the scale of losses). The example of one of the leading enterprises of the formed sample, LLC "ATB-MARKET", in which, according to information from the interview of the general director and chairman of the board of directors of the ATB corporation Boris Markov, after the beginning of a large-scale invasion, 31 sales points were destroyed, and 79 remained in temporarily occupied territories (Mishchenko, 2023).

Therefore, further research will be aimed at the substantiation of other samples of Ukrainian retail trade enterprises and the search for interdependencies between their scope of activity and the amount of economic resources involved in the conditions of war and post-war recovery.

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ECONOMIC RESILIENCE OF THE ENTERPRISE

The essence of the term "economic resilience" and the possibility of using this concept in relation to the social and economic system of the micro-level of the enterprise have been studied. The content of the terms "resilience" and "economic condition" as the main components of the studied concept is analyzed. The aim of the article is to identify the available theoretical approaches to determining the economic resilience of the enterprise, its essential features and the formation of the author's point of view. It is hypothesized that economic resilience is a complex characteristic of an enterprise that significantly affects its development in the long term in conditions of instability.

The following general scientific methods were used during the research: theoretical generalization, grouping and systematization. The etymology of the concept of "economic resilience" was studied and the main scientific approaches to its understanding were analyzed. In order to structure and systematize the researched question, a theoretical analysis of existing interpretations in foreign and domestic scientific works was carried out. On the basis of the conducted research, an author's approach to determining the essence of economic resilience of the enterprise was formed, which can serve as a basis for further scientific research.

Keywords: resilience, economic condition, enterprise, resilience development, sustainable development, economic resilience of the enterprise.

JEL Classification: B21, D21, P40.

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ЕКОНОМІЧНА СТІЙКІСТЬ ПІДПРИЄМСТВА

Досліджено сутність терміна "економічна стійкість" та можливість використання цього поняття відносно соціально-економічної системи мікрорівня – підприємства. Проаналізовано зміст термінів "стійкість" та "економічний стан" як основних складових досліджуваного поняття. Метою статті є ідентифікація наявних теоретичних підходів до визначення економічної стійкості підприємства, її сутнісних ознак та формування авторського погляду. Висунуто гіпотезу, що економічна стійкість є комплексною характеристикою підприємства, що суттєво впливає на його розвиток у довгостроковій перспективі в умовах нестабільності. Використано такі загальнонаукові методи: теоретичного узагальнення, групування та систематизації. Розглянуто етимологію поняття "економічна стійкість" та проаналізовано основні наукові підходи до його розуміння. З метою структурування та систематизації досліджуваного питання проаналізовано наявні трактування у закордонних та вітчизняних наукових працях. Сформовано авторський підхід до визначення сутності економічної стійкості підприємства, що може слугувати основою для подальших наукових досліджень.

Ключові слова: стійкість, економічний стан, підприємство, стійкий розвиток, сталий розвиток, економічна стійкість підприємства



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Introduction

The stability and positive dynamics of the development of the national economy is ensured primarily through the achievement of economic resilience of individual business entities. With the development of scientific and technical progress, society is in conditions of constant fluctuations and dynamic changes in the external environment, the intensity of which only increases with the passage of time. Such operating conditions generate a high level and new manifestations of risks faced by enterprises, which requires the development of response mechanisms and their prevention in order to maintain a stable economic state. Thus, the biggest challenges for modern economies have become the COVID-19 pandemic and the war in Ukraine. According to the State Statistics Service of Ukraine, the number of unprofitable enterprises tended to increase during the quarantine measures. Thus, in 2019, the share of unprofitable enterprises in their total number was 26%, and in 2020 this indicator was at the level of 28.6%, i.e. 2.6% more than in the previous period. The highest level of unprofitable enterprises was recorded in Kyiv, 34%. In 2021, a slight improvement in the results of activity was observed, in particular, enterprises that suffered a loss accounted for only 26.7% of the total number of economic entities, which is 1.9% less than the previous year. However, this value is greater than the results of 2019, which in the long run has negative consequences. 2021 was also characterized by a decrease in the number of active economic entities by 17,329 units, or by 0.88% compared to the previous period, which indicates the instability of business activity in the period under study (State Statistics Service of Ukraine). The war led to even greater destructive consequences for Ukrainian society, including economic ones. The number of active enterprises decreased to 1,732,508 units, which is by 223,740 units or 11.4% less than in 2021. The share of unprofitable business entities was 33.9% of the total number, which is 7.1% more compared to 2021. The largest number of unprofitable enterprises was recorded in the Kherson region – 51.5% of the entire number of entities in this region (State Statistics Service of Ukraine, n.d.).

The issue of defining approaches to understanding the economic resilience of an enterprise, which is actively researched by foreign and domestic scientists, is characterized by multifacetedness and versatility. The tangential approach of different authors is often found, for example, in the works of O. M. Yastremska and O. O. Yastremska (2020), Sitak and Ivakhnenko (2022). Gross-Holatska et al. (2020) find other aspects of the business system through which the essence of economic resilience is revealed. Andreeva and Zubko (2016) formed their own view on the combination of economic resilience with financial resilience and highlighting them as the most important elements of the economic security of the enterprise. That is, the studies demonstrate the lack of a unified view on the definition of this concept, the difference in starting positions for its study, which sometimes significantly narrows its interpretation and complicates the development of practical mechanisms, strategies and tools for ensuring the economic

resilience of the enterprise. In view of this, the issue of theoretical approaches to determining the essence of economic resilience of the enterprise requires further research.

The aim of the article is to systematize existing approaches to studying the economic resilience of an enterprise, to identify its essential features, and to form an author's approach to determining the economic resilience of an enterprise.

It is hypothesized that economic resilience is a separate complex characteristic of the state of the enterprise, which significantly affects its development in the long term in conditions of instability.

Scientific works of foreign and domestic scientists on issues of economic security, resilience of enterprise functioning, sustainable development, as well as research on the theory of systems, patterns of their development and functioning served as the information base of the research.

The research is based on the fundamental principles of systems theory, methods of analysis and synthesis, generalization, which are used to study the existing concepts of economic resilience, sustainable development, systematization and development of the conceptual apparatus.

The main part of the article consists of three sections: the first reveals the etymology of the concept of economic resilience; in the second, the modern discourse on the interpretation of economic resilience in foreign and domestic scientific sources is presented; the third one demonstrates the author's view on the definition of economic resilience and its role in ensuring the development of the enterprise in modern conditions.

1. "Economic resilience" concept etymology of the enterprise

The activity of business entities can be considered and determined from many aspects, as well as evaluated by various characteristics. In particular, an important element is the resilience of such a system. The term "resilience" as a separate unit is found even in the ancient teachings of Heraclitus about the eternal movement of the World, where he revealed the meaning of resilience as something continuous and constant, for example, "everything moves forward" and "everything flows, everything changes" (Tikholaz, 1996). Taking this into account, the term "resilience" can be studied as a philosophical category and interpreted as the permanence of qualitative characteristics of the system at times of changes in quantitative counterparts, or as the ability of the organization to preserve its structure (qualitative diversity) in conditions of external and internal influences of varying intensity (Boiko, 2013). In the social sciences, resilience is defined as the ability of society to adapt to changes in the system, avoid crisis impacts, and ensure stability and well-being of all its members. It is worth noting that different authors can highlight different important features, for example: the ability to self-regulate, equality, social justice, protection of human rights, etc. Thus, the term "resilience" is gaining considerable

popularity in matters of national security of the developed countries of the world, in particular, the British scientist Joseph J. defines "resilience" as a multifaceted term and considers it as a neoliberal form of state management, which emphasizes the ability of society to adapt to threats (Joseph, 2013). Thus, the term "resilience", which is relevant for various modern sciences, including economics, where it is extremely important to be able to rationally and effectively manage processes, became the basis for the formation of the concept of "economic resilience". However, the concept of "economic resilience" unites two important terms: "economic condition", under which a certain activity of the enterprise is ensured, and "resilience". Accordingly, each of these terms requires research. According to G. Savytska's interpretation, the economic state is a term that reflects the state of the enterprise within the framework of its activities and the ability to change, including self-development at a fixed moment in time (Savytska, 2007). Turylo A. and Agapova A. understand the economic condition of the enterprise as a set of indicators characterizing the development of the enterprise for a specific period of time or on a certain date. These are indicators such as competitiveness, investment attractiveness, profitability, efficiency, which are considered depending on the influence of socio-economic relations and are detailed in accordance with the purpose of the study and the conditions of conducting economic activity (Turylo & Agapova, 2010).

In our opinion, the economic condition should be defined as a set of factors and parameters that reflect the financial, production and economic activity of the enterprise. The main essential components of the economic state are:

economic activity: market position; the ability to implement and develop innovative approaches and technologies, to warn and properly respond to risks associated with economic instability;

financial condition: liquidity as the ability to fulfill one's financial obligations on time; profitability, that is ability to generate profit from activity; financial resilience is the ability to respond to financial difficulties while maintaining stability;

production state: production efficiency achieved by reasonable use of resources in order to maximize production output; ability to meet market requirements in terms of quality.

Personnel potential, the influence of the external environment, and the availability of reserves to cover unforeseen threats of influence are also important components of the economic state. The set of these characteristics determines the general economic condition of the enterprise, and also affects its competitiveness, resilience and ability to develop.

According to the theory of systems, the term "resilience" is considered as the ability of the system, under various possible influences, to acquire its acceptable, usual state, which is determined in accordance with standards, plans, regulations, etc. In its essence, this term is associated with immutability, balance and orderliness. In the natural sciences, the term "resilience" means a stable state, the ability to persist over time and continue to exist. The

studied term also developed in mathematical sciences, where different types of resilience are distinguished: statistical, dynamic, trajectory, initial position, invariant set, attractor, etc. However, it is impossible to use the specified types of resilience in relation to the enterprise, since it is a complex system of heterogeneous elements and connections and contains multiple variants of development. In economic theory, resilience is considered as one of the concepts of the concept of economic equilibrium, where business entities make attempts to bring the economic system to a balanced and optimal state, which is associated with the definition of resilience. According to this approach, achieving an equilibrium state of the economy is one of the main macro- and micro-tasks.

S. Kozlovskiy interprets economic resilience as the ability of the economic system after certain disturbances to acquire a state no worse than it had previously, to maintain and improve its state, under the conditions of acquiring positive economic changes (Kozlovskiy, 2011). For his part, M. Kuvshinov understands economic resilience as an unchanging state of harmony, where the orientation of development, the scale of resource use, the direction of capital investments and changes will be coordinated with current and future needs (Kuvshinov, 2011). Separately, it is worth noting economic resilience within the framework of econometrics, in which two main components are distinguished: a set of initial states and a set of final states of an economic system, where a stable economic system is defined as a transition from one state (initial) to another (final), which occurs in this way, that none of its characteristics goes beyond the permissible trajectory of change (this includes inflation, production growth, etc.), that is, the ability of the system to return to a state of equilibrium is determined (Karpinsky, 2004).

In our opinion, the study of the concepts of "resilience development" and "sustainable development" also needs special attention, since they are often used to study the company's activities. For example, the concept of "sustainable development", borrowed from Ukrainian scientific thought from foreign sources, is based on the principles of stability, balance and integrity of development systems. Thus, Grechko A. and Ocheretyana O. interpret "sustainable development" in relation to the socio-economic system of entrepreneurship as development accompanied by stable growth of the enterprise, reproduction of all enterprise systems and obtaining results from activities (in three main directions – economic, ecological and social), through high-quality internal management and progressive external regulation (Grechko & Ocheretyana, 2020). The concept of "resilience development" is defined by R. Feshtur and H. Baranivska as a phenomenon that involves a crisis-free, step-by-step change in the quality characteristics of an enterprise, compliance with development indicators within the limits of predefined vectors and set goals (Feshtur & Baranivska, 2010). Although the concepts are similar, it is worth noting that different authors and organizations may put their own emphasis or emphasize one of the concepts in order to highlight certain aspects of development.

2. Modern discourse in the concept interpretation of "economic resilience"

The concept of economic sustainability was first formed after the energy crisis of 1973–1979, when the problem of limited resources arose. Since then, this definition has acquired its scientific development and has been singled out in the direction of "ecosystem" (economic security of the state), which is understood as the economic resilience/security of the state, which can be formed with the help of individual units, including enterprises (Kulbaka, 2002). However, modern science distinguishes different approaches to understanding the economic resilience of an enterprise (*Table*).

Table

Concept definition of "economic resilience" in foreign and domestic scientific sources

Authors	Definition
Porter M.	The ability of the enterprise to maintain and increase its own competitive advantages for a long time, taking into account the values of the enterprise, that is, external and internal factors (Porter, 1980)
Schumpeter Y.	The enterprise's capacity for innovation and creative destruction. He saw the need to introduce new ideas and technologies in order to maintain his own competitiveness (Schumpeter, 2011)
Young L.	Researched economic resilience from the point of view of risk management, where enterprise resilience is an opportunity to adapt to various risks while maintaining its own operational and financial efficiency. In view of this, defines economic resilience as the ability of the enterprise to manage uncertainty (Fassio et al., 2001)
Strickland A., Tompson A.	Describing strategic management, economic resilience is understood as the system's ability to function, where it adapts to changes in the external environment and provides resilience in conditions of constant uncertainty (Thompson, 2007)
Gross-Holatska E. and others.	Economic resilience is understood as the ability of the business entity to effectively manage its spheres of activity, which will ensure profitability in the long term (Gross-Holatska et al., 2020)
Andreeva V., Zubko T.	Economic resilience is described as a state of enterprise development in which socio-economic parameters are in a state of economic equilibrium, despite changes in the external and internal environments (Andreeva & Zubko, 2016)
Simeh Yu.	The ability of the enterprise to return to a state of equilibrium, where it has the dynamics of positive performance indicators or meets the established limit values (Simekh, 2007)
Bugai V. Omelchenko V.	The ability of the enterprise to properly respond to internal and external destabilizing factors through the effective use of its own resources and an increase in economic potential (Bugai & Omelchenko, 2008)
Burda A.	Economic resilience is a complex phenomenon that acts as an indicator of deviations from the competitive state at a certain stage of the activity of such an enterprise (Burda, 2009).
Tsyamryuk Yu.	A balanced state of economic resources, which provides conditions for expanded reproduction, stable profitability and resilience economic growth in the long term (Tsyamryuk, 2009)
Goncharov V., Navrotskyi A.	Constant circulation of means and resources (monetary, material and technical, land, labor, financial), which ensure extended reproduction and solvency of the enterprise (Goncharov & Navrotskyi & Kolomiitsev, 2006)
Aranchiy V., Udovichenko M.	They understand economic resilience as ensuring profitable activity and stable development of the enterprise's capacity due to the adoption of appropriate management decisions, effective use of production resources and self-financing in conditions of dynamic changes in the external environment (Aranchiy & Udovichenko, 2014)
Arefieva O., Horodynska D.	A set of interrelated components that, under any external and internal conditions, ensure the balanced functioning of the enterprise (Aref'eva & Horodynska, 2008)

Authors	Definition
Grosul V.	Considers economic resilience in combination with economic stability, understands it as the ability to maintain balance in internal and external environments that are dynamic. At the same time, solvency and investment attractiveness are ensured within the limits of the permissible level of risk (Grosul, 2007)
Sabadash L.	Understands economic resilience as a dependence on a number of internal factors, which are based on the key characteristics of monitoring the state of the enterprise. Under the conditions of achieving resilience, normative indicators are preserved, which, under the influence of external and internal factors, are capable of increasing, which will lead to an improvement in the functioning of the enterprise (Sabadash, 2018)
Malyarets L., & Smolyakova O	Economic resilience is defined as the coherence of the elements of the enterprise's economic system, which ensures cause-and-effect relationships of stable functioning and preservation of normative trends of the enterprise's activity (Malyarets Smolyakova, 2015)
Ivanov V.	The ability of the enterprise to maintain its condition in the face of various external and internal destabilizing disturbances through the effective formation and use of its own mechanisms (Ivanov, 2005)
Sitak I., Ivakhnenko A.	The ability of the enterprise to adapt to the factors influencing the internal and external environments and to resist changes that do not correspond to the development goals of the business entity
Yereimchuk R.	The ability to ensure positively stable technical and economic indicators by adapting to external and internal disturbances in order to organize the enterprise's activities (Yereimchuk, 2002)
Polishchuk O.	The ability of the enterprise to rationally use its own potential and adapt to changes in the environment with maximum benefit for all participants in entrepreneurial activity (Polishchuk, 2007)
Udovichenko M.	An equilibrium state, or its change, which guarantees the achievement of tactical and strategic goals in a certain period of time and ensures the flow of internal processes in accordance with the requirements and needs of the external environment (Udovichenko, 2012)
Yastremska O.	Systemic ability to resist the negative effects of internal and external environments, to react rationally to them, and the ability to preserve one's own structure and order of functioning (Yastremska, 2020)

Source: compiled by the author based on the sources referenced in *Table*.

Contextual and comparative analysis of the presented interpretations makes it possible to single out several approaches to the interpretation of the meaning of economic resilience.

Simeh Y. and Blank I. while researching and defining economic resilience, adhere to the "steady state" approach (in Ukrainian it is steady state), which the authors associate with a state of dynamic equilibrium. Proponents of this approach are also Solow R., Kolodziev O., Nuzhnyi K., Yachmenyova V., Andreeva V., Zubko T., Yang L., Grosul V., Sitak I., Ivakhnenko A., etc. They define economic resilience as a state of dynamic development of the subject, when the balance of socio-economic parameters of the system is maintained in the face of external and internal disturbances. With this approach, attention is focused on the financial and economic activity of the enterprise. However, scientists equate the concepts of "economic resilience " and "economic equilibrium", which is not entirely correct (Savchenko, 2019).

Economic resilience in view of the financial condition of the enterprise, avoiding bankruptcy and ensuring competitiveness are determined

by Maslenko Y., Kulbaka N., Korotkov E., Vasylenko A., Dergacheva V., Sukhorukova T., Levytskyi V., Burda A., Aranchiy V., Udovichenko M., etc. According to this approach, financial resilience is formed due to the receipt of profits, which create conditions for free maneuvering and efficient use of funds. In their opinion, this creates prerequisites for increasing the reliability and rhythm of the company's activity processes (Levytskyi, 2023). It should be noted that a significant number of enterprises in modern conditions, although not bankrupt, face losses. Therefore, in our opinion, financial resilience cannot be the only basis of economic resilience, since the latter is a more multifaceted and universal term.

The approach to defining economic resilience based on the provisions of "sustainable development" (in Ukrainian it is "sustainable development") gained its popularity after the publication of the report of the UN International Commission on the Environment in 1987. Its supporters are Melnyk L., Fadeeva A., Semenov A., Derkach A., Gross-Holatska E., Aref'e-va O., Horodyanska D., Malyarets L., Smolyakova O., Polishchuk O., etc. According to this approach, the economic, social and environmental goals of the business entity are balanced, and the main indicator is the improvement of the quality of life. According to the defined approach, the rate of economic growth should not exceed the rate of reproduction of natural resources (Levytskyi, 2023). However, in our opinion, it is more appropriate to consider the term "sustainable development" as "harmonious development", since the idea of the concept involves the harmonization of economic, social and environmental interests, and resilience development according to the systems theory is defined differently.

Mil J., Harrord R., Shandova N. distinguish the approach "sustained positive economic growth" (in Ukrainian it is "sustainable economic growth"), according to which economic resilience consists in the maximum growth of the economy of the system, while having minimal deviations from equilibrium (Savchenko, 2019). According to this approach, ensuring the profitability of the activity is achieved through increasing the use of production resources and system management, and a stable financial condition is ensured by improving the structure of assets and developing the company's capacities. Supporters of this approach include Schumpeter Y., Kotler F., Morris D., Strickland A., Thompson A., Bugai V., Omelchenko V., Tsyamryuk Y., Sabadash L., Yastremska O. However, the disadvantage of this method there is the identification of the term "development" with the concept of "growth", which implies an increase in only quantitative indicators and not qualitative characteristics of the social and economic unit.

Thus, modern scientists identify different ways to achieve resilience and balanced operation of the enterprise, however, according to the conclusion of Shatunova T., the existing definitions of the concept of economic resilience are one-sided, which leads to errors in planning, interpretation and application of the determined data (Shatunova, 2010).

A similar opinion is also held by Y. Klyus, who believes that the existing approaches to defining the essence of economic resilience do not provide an opportunity to get a comprehensive idea of its essence (Klyus, 2011). Therefore, the lack of a generally accepted approach to the understanding, analysis and assessment of the economic resilience of the enterprise creates a problem and requires the creation of such a comprehensive solution.

3.The essence and elements of economic resilience of the enterprise, its role in ensuring its development

According to the results of the modern approach analysis to determining the content of the economic resilience of the enterprise and their development, the essential characteristics of this concept have been identified.

Economic resilience is related to a state of dynamic economic equilibrium. The state of equilibrium is characteristic of systems that do not have connections with the external environment, while the enterprise is an open system for which equilibrium is permissible as a moment in the process of constant changes. Therefore, dynamic equilibrium eliminates any possible aspects of resistance to change. Under such parameters, the set of points in space, where the economic entity reaches a state of dynamic equilibrium, should be considered as a line of planned behavior of the system, which has an evolution trajectory. Taking this into account, resilience will represent the achievement of desired goals in a specific period of time, and the transition from one trajectory of functioning to another is a change in dynamic equilibrium and a transition to a new level of system development (Feshtur & Baranivska, 2010).

Economic resilience is the basis of the sustainable economic development of the enterprise, where the parameters of resilience ensure the harmonious, balanced and non-controversial development of the specified subject. Under such factors, development will not have threats to the life of the enterprise, as it will be achieved through adaptability, flexibility, as well as neutralization of negative external influences and threats of the competitive environment (Burda, 2009).

Economic resilience is derived from the optimality of resources and the efficiency of management in general, and therefore, is an important object of management at the enterprise. This characteristic is reflected in the writings of P. Drucker, who argued that the task of management is to ensure the effective use of resources and the achievement of strategic goals of the business entity. In his opinion, effective management is the achievement of economic resilience of the enterprise. Z. Shershnyova, V. Goncharov and A. Navrotsky note that optimal management of resources in line with scientific and technical development strengthens the potential and economic resilience of the enterprise.

Economic resilience is a complex concept that is determined by a system of factors that include financial, production, social, technological and strategic aspects of the enterprise. This approach to understanding the economic resilience of the enterprise is supported by such scientists as Grosul V., Aranchiy V., Udovichenko M., Sabadash L., etc. They believe that in order to achieve resilience, an enterprise must take into account and interact with all aspects of its functioning, and not be limited only to financial indicators or production productivity. Such an integrated approach makes it possible to better understand and manage the efficiency of the enterprise in the conditions of a changing economic environment.

Economic resilience is a certain state of the enterprise that can be evaluated using a system of indicators. Bugai V., Malyarets L., Polishchuk A., Smolyakova O. refers to such indicators as financial, economic, social and environmental characteristics, which ensure cause-and-effect relationships of the stable functioning of the enterprise. They also believe that for a meaningful assessment of the resilience of the enterprise, it is necessary to take into account various aspects of its functioning. And such a characteristic of resilience makes it possible to get a more complete picture of the economic state of the enterprise and to develop effective strategies for ensuring resilience in conditions of uncertainty.

Economic resilience is the ability to adapt and neutralize risks, which will be achieved through effective functioning and use of own mechanisms. With this characteristic, the resilience of the economic entity will ensure the preservation of its own efficiency in the conditions of destabilizing external and internal influences. In the works of scientists V. Bugai, V. Ivanov, V. Omelchenko, L. Yang, etc. the characteristic of economic resilience is singled out.

Economic resilience is the ability to anticipate and implement anticipatory actions, including through the introduction of innovations. Proponents of this approach are Porter M. and Schwab K. In particular, Porter M. notes that in order to ensure competitive advantages and achieve economic resilience, the enterprise must actively adapt to changes and innovations in the business environment. Shvab K., describing the role of innovations in the formation of economic resilience, noted that the prediction and implementation of innovations is the key factor that ensures the resilience and competitiveness of the subject in modern market conditions.

Economic resilience is the ability to maintain competitiveness in the face of constant changes. The isolated characteristic substantiates the importance of analyzing the strategic course of activity and development of the enterprise, as well as its adaptation to changes in the external and internal environments in order to ensure economic resilience. Schumpeter J., Yereimchuk R. drew attention to the need for such an interpretation.

In addition to the specified essential characteristics, which result from the conclusions of modern researchers, in our opinion, it is worth supplementing the list with new essential features, which are conditioned by the modern conditions of the enterprise's functioning.

- Economic resilience is derived from the resilience of the network of stakeholders and the company's place in it. Modern trends in management and recent empirical studies demonstrate the dependence of the state of the enterprise on the ability to satisfy the interests of stakeholders and build effective relations with them.

- Economic resilience is derived from the resilience of the enterprise's business model, which determines the enterprise's ability to generate value and is determined by the rationality, optimality and efficiency of business processes.

- Economic resilience is a necessary condition for increasing the market value of the enterprise; therefore it can be determined by evaluating the ability of the enterprise to increase it as the main goal of the enterprise's functioning.

On the basis of the identified essential features and characteristics, it is possible to formulate the following definition of the content of the economic resilience of the enterprise. *The economic resilience of an enterprise* is a complex state of a business entity that enables it to function effectively in a dynamic business environment through the ability to adapt to internal and external changes, the rational use of existing resources and the involvement of additional resources, processes and stakeholders, effective strategic planning, risk prevention, integration innovation in order to ensure long-term expanded reproduction, competitiveness and growth of market value.

The formed statement and highlighted essential characteristics reveal the role of economic resilience in ensuring the development of the enterprise, which is especially relevant in the conditions of constant changes in the modern economic reality. In particular, the ability of an enterprise to adapt to market dynamics, changes in consumer preferences, technological innovations and internal challenges are signs of flexibility and rapid response, and a system that can effectively adapt to new conditions has an advantage in achieving resilience development. Economic resilience is also closely related to financial strength, as a stable financial position and a high degree of liquidity play a key role in securing the necessary resources for development. Effective financial management, reduction of financial risks, proper adaptation to changes in the financial environment creates a sound platform for investments and implementation of strategic projects.

Economic resilience consists not only in reactive measures, but also in active development strategies. After all, an enterprise that invests in its own technological and intellectual potential provides itself with real

advantages in a competitive environment and the ability to maintain market leadership. On the other hand, the ability to manage risks significantly affects the economic resilience of the subject. Working in conditions of uncertainty, the enterprise must develop risk response strategies, thereby ensuring protection against potential threats and the stability of its own functioning. Therefore, the effective and rational business model formed by the enterprise is a necessary condition for ensuring its economic resilience, where, under such an approach, all prerequisites for the growth of the market value of the business entity are present and its development takes place in accordance with the purpose of functioning.

Conclusions

The study of theoretical approaches to determining the essence of the economic resilience of the enterprise was updated against the background of the devastating impact of military operations in Ukraine and the recovery after COVID-19, which significantly shook the economic situation in the state market. Based on the results of the analysis, the concept etymology of "economic resilience" of the enterprise was revealed and the modern discourse of the chosen topic was described, the definition of the essence and elements of the economic resilience of the enterprise was formed, and its role in the development of a separate business unit was also revealed. The theoretical findings of this article can ensure the creation of practical recommendations for achieving economic resilience of enterprises in real market conditions.

It was established that the economic resilience of the enterprise is a complex state of the enterprise, which is based on the implementation of conditions for long-term expanded reproduction of the business entity, which corresponds to its goals of economic development. The essence of the determined state is the efficiency of the enterprise's functioning in a dynamic business environment thanks to the ability to respond to changes in the external and internal environments, rationally use resources, effectively carry out strategic planning, prevent risks, implement innovative activities, develop its own value system, ensure resilience competitive advantages.

It is proposed to supplement the understanding of the concept of economic resilience of the enterprise in matters of the dependence of the state of the subject on the ability to satisfy the interests of stakeholders and the creation of a network of effective relations with them, as well as the effectiveness of the generated business model as a necessary condition for increasing the market value of the enterprise, which corresponds to its main purpose of functioning.

The results presented in the article can serve as a basis for further scientific research within the framework of scientific studies on the economic resilience of the enterprise.

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CONCEPTUALIZATION OF SYSTEM MANAGEMENT OF E-COMMERCE ENTERPRISES

The modern information stage of business development is characterized by digitalization of all processes, primarily commodity and money exchange. This reinforces the trend of dynamic growth in the number of electronic commerce (EC) enterprises, which is naturally accompanied by an increase in the volume of turnover, intensifying market competition between manufacturers, suppliers and sellers, expansion and improvement of product offers, implementation of artificial intelligence technologies in these processes. There is an objective need for a flexible and adaptive response of the corporate management of EC enterprises to permanent market changes in order to strengthen their own competitive advantages, as well as to develop a theoretical model of effective system management of an enterprise operating in such conditions. Such a model should be based on fundamentally new approaches to the system management of EC enterprises. Ukraine's participation in the formation of the global information society requires the development of the domestic EC segment, which involves the improvement of business processes in production and trade, the expansion of sales channels, the transformation of the labor market and the human capital management system. Such a necessity is intensified against the background of Russia's war against Ukraine. Despite the economic crisis caused by the war, the improvement of management approaches by EC enterprises should increase the efficiency of their business processes and lead to an increase in the competitiveness of the domestic economy. The aim of the article is to develop the conceptual foundations of system management of e-commerce enterprises. Based on the methods of scientific analysis and synthesis, the essence of e-commerce,

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КОНЦЕПТУАЛІЗАЦІЯ СИСТЕМОГО МЕНЕДЖМЕНТУ ПІДПРИЄМСТВ ЕЛЕКТРОННОЇ КОМЕРЦІЇ

Сучасному інформаційному етапу розвитку бізнесу властива цифровізація усіх процесів, передусім товарно-грошового обміну. Це підсилює тенденцію динамічного зростання кількості підприємств електронної комерції (ЕК), що закономірно супроводжується нарощенням обсягів товарообороту, загостренням ринкової конкуренції між виробниками, поставальниками й продавцями, розширенням та вдосконаленням товарних пропозицій, імплементацією технологій штучного інтелекту в ці процеси. Виникає об'єктивна необхідність гнучкого та адаптивного реагування корпоративного менеджменту підприємств ЕК на перманентні зміни ринку з метою посилення власних конкурентних переваг, а також розробки теоретичної моделі ефективного системного управління підприємством, що діє в таких умовах. Така модель має ґрунтуватись на принципово нових підходах до системного менеджменту підприємств ЕК. Участь України у формуванні глобального інформаційного суспільства потребує розвитку вітчизняного сегмента ЕК, що передбачає вдосконалення бізнес-процесів у виробництві та торгівлі, розширення каналів збуту, трансформації ринку праці і системи управління людським капіталом. Така необхідність посилюється і на фоні війни росії проти України. Попри економічну кризу, спричинену війною, вдосконалення управлінських підходів підприємствами ЕК має підвищити ефективність їх бізнес-процесів та призвести до зростання конкурентоспроможності вітчизняної економіки. Метою статті є розробка концептуальних засад системного менеджменту підприємств електронної комерції. На основі методів наукового аналізу



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e-commerce enterprise is determined and the classic McKensey 7S model is developed in the case of system management of an e-commerce enterprise. Internal and external determinants of system management of EC enterprises are highlighted. The development of the classic McKensey 7S model and the analysis of the system management determinants of EC enterprises made it possible to conceptualize it and reveal the need for a scientific rethinking of management approaches at the level of domestic enterprises. This will contribute to the leveling of barriers to the effective introduction of new management approaches into management practice.

Keywords: conceptualization, determinants of system management, McKensey 7S model, artificial intelligence, digital technologies, e-commerce.

JEL Classification: M10, L29, L81, D21, O32.

Introduction

The rapid development of information technologies (IT) and the widespread use of tools based on artificial intelligence (AI) contribute to the processes of digital transformation of business and form a new market environment that dictates new rules of market behavior to its participants, forcing to improve system management at enterprises and review established business processes according to the vector of the new information technology approach to digitization. Enterprises are resorting to mastering a new niche such as electronic commerce (EC) in order to expand their prospects of presence in the market, increase the volume of sales of products or provision of services through online sales, and increase the efficiency of all business processes, in particular financial transactions. Thus, enterprises transform their business models thanks to a change in the mechanism of commodity-money exchange. The main difference of EC is the implementation of purchase and sale via the Internet, bypassing direct communication between the seller and the buyer. It is the intermediation of commodity and monetary exchange through the Internet that transforms entrepreneurial activity into electronic and commercial activity. The single technical standards of e-commerce are universal, which enables consumers to reduce their efforts in searching and selecting goods (Asbari et al., 2023).

Digital transformation is turning into an effective tool for business diversification and increasing competitiveness, but it is because of it that all management principles and strategies are shifting towards digital reality (Fedushko, 2023).

Large-scale digitization of the economy accelerates the tendency for enterprises to master the EC niche, increasing their operational and overall

та синтезу визначено сутність електронної комерції, підприємства електронної комерції та розвинено класичну модель McKensey 7S у випадку системного менеджменту підприємства електронної комерції. Виділено внутрішні та зовнішні детермінанти системного менеджменту підприємств ЕК. Розвиток класичної моделі McKensey 7S та аналіз детермінант системного менеджменту підприємств ЕК дозволили концептуалізувати його та виявити необхідність наукового переосмислення управлінських підходів на рівні вітчизняних підприємств. Це сприятиме нівелюванню бар'єрів ефективного впровадження нових управлінських підходів у практику менеджменту.

Ключові слова: концептуалізація, детермінанти системного менеджменту, модель McKensey 7S, штучний інтелект, цифрові технології, електронна комерція.

corporate efficiency. The effects of digitalization of business strengthen the positive impact of EC on profitability and other indicators of economic efficiency of enterprises. The latest scientific studies prove the direct impact of EC on corporate efficiency and the indirect impact through the mediation of business digitalization and operational efficiency. This allows managers to rethink system management approaches, and to implement the advantages obtained as a result of the positive interaction of digitalization and e-commerce into new management strategies. Financial resources obtained as a result of increased business efficiency, enterprises can invest in technologies that will improve the digitalization of business processes, which, in turn, will improve corporate activity and the ability of e-commerce enterprises to flexibly adapt to today's turbulent conditions (Santos-Jaen et al., 2023).

At the same time, an objective trend is forming, when digitalization, as an incessant process of penetration of communication technologies into all spheres of life, requires enterprises to develop management and information technologies that qualitatively change business processes and market conditions, reducing transaction costs. New multifaceted technologies are worth investing in and implementing in system management: they help businesses build up their customer base, supplier base, and support for electronic invoices helps integrate accounting systems (Kilay, 2022).

Thanks to digitalization, the effectiveness of communications with stakeholders in the spheres of supply, production, logistics, sales, financing, etc. increases, and new business processes appear. Today, more than 80% of consumers in the world tend to make purchases online through the global Internet, payment systems. In Ukraine, 70% of the adult population uses the Internet. The COVID-19 pandemic triggered and intensified this trend in the world and in Ukraine, in particular: among Ukrainians, the level of Internet use has increased to 80%, and 33% of the adult population are consumers of e-commerce enterprises, and this trend is only increasing (Results of the CBR study, 2021).

E-commerce, given the high risks of domestic and global market instability and increased volatility, is turning into a necessary management tool for ensuring the continuity of business processes, increasing the quality of valuable product offers and strengthening the company's competitive advantages.

Currently, the market system of sales is outgrowing its limits both due to the development of information systems and the permanent quantitative and qualitative growth of the needs of consumers, primarily Internet users, which gives them access to a wide range of goods and services. The concept of managing traditional sales is transformed into the concept of EC management, which, in turn, needs effective digital platforms to perform document collection operations, transaction registration, reporting, etc. The need for EC enterprises to partner with digital platforms is reaching such a level that it is referred to as "digital platform hegemony" (Khattak, 2022).

EC enterprises are using digital platforms to standardize, distribute, and change business process data on an unprecedented scale (Williamson, 2021). Thanks to digital platforms, enterprises embody new business ideas; implement technological innovations, new management technologies by strategically aligning goods with core activities (Freixanet, 2021; Motoryn et al., 2021).

Thus, under the influence of digitalization, the EC enterprise management system is complicated by the emergence of such new subsystems as: information flow management, digital HR, automated management of warehouse stocks and logistics in general, web server management, data analytics, blockchain, the Internet of Things, risk- management, in particular, risk diversification. All this is aimed at minimizing the potential negative consequences for enterprises. The synergistic effect of these management subsystems can create a powerful impetus for the development of enterprises in the field of e-commerce and strengthen their competitiveness.

Awareness of this forces business owners to look for new management approaches and introduce the latest information technologies into corporate management. There is a need to conceptualize the system management of EC enterprises, which will create a basis for supporting business processes and increase their efficiency.

There is currently no single definition of "electronic commerce" in the scientific literature. Thus, in the Law of Ukraine "On Electronic Commerce" dated September 3, 2015, it is defined as "relationships aimed at obtaining profit, which arise during the execution of transactions related to the acquisition, change or termination of civil rights and obligations, carried out remotely using information and communication systems, as a result of which the participants of such relations have property rights and obligations" (Law of Ukraine "On Electronic Commerce", 2015).

In modern national economic literature, the definition of EC as a commercial interaction of business entities, which is carried out with the help of the global Internet network, prevails. This is exactly the definition proposed by N.S. Medzhibovska, who defines electronic commerce as the exchange of information, support of business relationships and conducting business transactions by means of telecommunication networks (Medzhibovska, 2004).

S.S. Lukachyna, researching the conceptual basis of the management of an e-commerce enterprise, suggests considering the latter in the context of two approaches: economic and legal – and concludes that in the management system of such enterprises it is necessary to take into account the advantages and disadvantages characteristic of electronic commerce (Lukachyna, 2023).

According to Guven H.'s approach, e-commerce should be considered inextricably linked with digitalization of sites and digital marketing. EC, according to the scientist, plays a decisive role in procurement processes, at the stage of making purchase decisions (Guyen, 2020).

According to Holsapple C., Singh M., EC can be defined as activities or services related to the purchase and sale of goods or services via the

Internet (Holsapple & Singh, 2000). Firms are increasingly turning to EC due to the growing customer demand for online services and its ability to create competitive advantages (Gielens & Steenkamp, 2019).

There is also an approach to defining EC as a set of subjects of commerce and the telecommunications environment. In particular, J.S. Tertychny indicates that EC should be understood as any type of trade-entrepreneurial, trading, commercial-mediation activity, participation in trade, sale of goods, real estate, securities, provision of services with the aim of obtaining profits, which is carried out remotely using information-telecommunication systems (Tertchyny, 2018).

Such technologies, on the one hand, increase business efficiency, but on the other hand, they present management with the task of flexible adaptation to its relentless development. Some firms have difficulty with e-business practices because of its deep integration with rapidly changing, easily implemented, and accessible information technologies. This forces firms to constantly adapt their business models to the changing needs of customers and suppliers through a strategy of entrepreneurial orientation, mutual understanding, mutual commitment, and relational harmony (Niu et al., 2020).

Artificial intelligence (AI) is the newest of these technologies. It is transforming e-commerce through its ability to "correctly interpret external data, learn from such data, and use that knowledge to achieve specific goals and objectives through flexible adaptation (Kaplan & Haenlein, 2019). Western researchers Bawack R., Wamba S., in order to level the threats of the rapid development of new technologies, suggest that enterprises examine certain information systems for their acceptability to specific business models, increasing the effectiveness of their implementation in operational processes (Bawack et al., 2022). In particular, blockchain technology facilitates the development of an autonomous transaction system for e-commerce applications and minimizes data storage and consumer privacy risks by monitoring and recording each transaction (Sekar, 2022).

Hidayat A., Dewantara A. advocate the development of a separate concept of an information management system for the implementation of EC with integrated data and storage in databases. This is a prototype concept that requires the development of a website, the design of which uses the Hypertext ProProcessor (PHP) programming language and the MySQL database (Hidayat et al., 2020).

Depending on the context, AI in EC operations can be a system, tool, technique, or algorithm (Akter et al., 2021). This creates opportunities for firms to gain competitive advantage by using big data to create unique product offerings for their customers through personalized services (Niu et al., 2020).

Domestic researchers O.L. Andronik and A.V. Voronin believe that the concept of electronic commerce can be interpreted in both a broad and a narrow sense. In a broad sense, EC is any economic activity that includes the use of electronic information technologies. In a narrow sense, EC is a

commercial activity of buying or selling goods and services on the Internet for profit (Andronik & Voronin, 2021).

At the same time, the majority of scientists identify this concept with electronic commerce, referring to the fact that electronic commerce is the key link of electronic commerce in the conditions of the modern development of the global Internet network. In part, this identification of concepts occurred due to the fact that e-commerce has recently become more and more widespread, gradually displacing traditional retail trade from a number of areas due to the provision of the most convenient for consumers the conclusion and execution of B2C (Business to Consumer) segment agreements., B2B (Business to Business) and B2G (Business to Government) (Nathaniela et al., 2022).

Despite the similarity of these concepts, the Law of Ukraine "On Electronic Commerce" provides two separate definitions of the concepts "electronic commerce" and "electronic commerce". Thus, EC is defined as "relationships aimed at obtaining profit, which arise during the execution of transactions related to the acquisition, change or termination of civil rights and obligations, carried out remotely using information and telecommunication systems, as a result of which the participants of such relations have rights and responsibilities of a property nature". The Law interprets electronic commerce as follows: "economic activity in the field of electronic purchase and sale, sale of goods remotely to the buyer by making electronic transactions using information and telecommunication systems" (Law of Ukraine "On Electronic Commerce", 2015).

One should agree with the approach that indicates the impossibility of identifying the analyzed concepts. The essence of the English-language term "electronic commerce" according to the interpretation given by the World Trade Organization is understood as "the production, distribution, marketing, sale or delivery of goods and services by means of electronic means", and its rapid development is due to the wide use of the Internet and digital devices, that provide consumers with direct access to the online market (World Trade Report, 2018).

According to the UNCTAD methodology, electronic commerce covers all forms of transactions related to the commercial activities of organizations and individuals, which are based on the processing and transmission of digital information, including texts, sounds and visual data. EC governance should aim to create and maintain a dynamic and inclusive EC ecosystem that can contribute to sustainable development (E-commerce Strategies, 2018).

The Tax Code of Ukraine No. 2755-IV dated 02.12.2010 defines the regulatory approach by which EC enterprises perform a fiscal function, ensuring compliance with statutory requirements for taxation (Tax Code of Ukraine, 2010).

The issues of system management of EC enterprises become especially relevant against the background of the war started on February 24,

2022 by the aggressor state Russia against Ukraine. War is considered by scholars as an external shock to the market environment, causing disruptions in the transmission, production, and sale of goods. On the one hand, bans on the movement of goods across borders, or its restrictions, contribute to the intensification of trade in the field of electronic commerce. Indeed, in the long run, the war looks like a game changer for the growth of the e-commerce market (Grabara, 2022).

On the other hand, the war and the resulting economic crisis are having a detrimental effect on global e-commerce due to changes in the digital behavior of buyers against the background of economic sanctions against Russia and the blocking of a large part of online payments. This inevitably affected the online shopping behavior of all shoppers (Qadir et al, 2023).

According to an analytical study by Statista, the EC market in Ukraine as a result of the war experienced a sharp decline in 2022 and a gradual recovery in 2023. In 2017-2021, the e-commerce market grew three times, from USA 1,180.65 million in 2017 to USA 3506.98 million in 2021; however, in 2022 it decreased 12 times to USA 295.85 million. Analysts' forecasts are optimistic: in 2024, they expect the market to grow to USA 3,302.23 million and in 2025 it is up to USA 4039.53 million. (E-commerce in Ukraine, 2023)

Therefore, against the background of the negative impact of migration processes on the branches of the national economy, EC, despite the reduction in the volume of trade, has the potential to increase turnover, improving conditions for the business sector and accelerating its integration into the European digital space (Zatonatska, 2023).

Despite a significant layer of theoretical development, a unified approach to the study of system management of e-commerce enterprises has not been formed in the economic literature. The above analysis of the existing definitions of electronic commerce showed that there is no generally accepted concept of the essence and content of EC. The issues of a relatively clear definition of the term "e-commerce enterprise", the complete implementation of purchase and sale transactions using electronic means, the relationship between the concepts of e-business and e-commerce, e-commerce and e-commerce and other related but not identical concepts and categories remain debatable.

The aim of the article is to develop the conceptual foundations of system management of e-commerce enterprises, which will form the basis of new management approaches. The tasks of the research are the analysis of existing theoretical approaches to EC and the definition of the concept of "electronic commerce enterprise", the identification of approaches to the essential definition of the concept of "electronic commerce", new elements of the EC enterprise management system, the justification of the basic determinants of the EC enterprise system management model; determination of the essence of EC enterprises and their system management; outlining the

barriers that prevent the theoretical formation and practical implementation of new management approaches in Ukraine.

The information base consists of legislative documents, UNCTAD materials on EC strategies, classic and state-of-the-art research and business analytics materials.

In order to conceptualize the system management of EC enterprises, the following research hypothesis is put forward: the implementation of a new structural element into the classic McKensey 7S model will deepen the analysis of system management as such and contribute to the identification of internal and external determinants of the management of e-commerce enterprises.

Hypothesis testing and its algorithm will include the method of analysis and synthesis when developing the classification of the concept of "electronic commerce" according to the criteria of conceptual approaches; structural method when introducing new structural elements into the McKensey 7S model; the method of synergy in the study of the EC enterprise as a system of constituent elements: internal determinants (the core of the system) and external determinants (its superstructure) and the identification of joint results of their interaction. The methodological limitation consists in abstracting from a number of factors of EC enterprise activity, which in one way or another affect its management: industry specificity, structure of costs and financial resources, degree of innovative activity, etc.

The content structure of the main part of the research consists of the following elements, such as analysis of conceptual approaches to electronic commerce, EC enterprises; deepening of the McKensey 7S model in the case of the EC enterprise; determinants of system management of EC enterprises.

1. Analysis of conceptual approaches to e-commerce and e-commerce enterprises

Understanding the essence of e-commerce as a system of economic, in particular, commodity-monetary relations carried out with the help of the Internet and digital technologies, allows you to consider the EC enterprise as a business entity that conducts financial and monetary transactions for the purchase and sale of goods and services via the Internet. Accordingly, all business processes in such an enterprise, starting with the formation of a management strategy and ending with personnel management, take place with the aim of increasing the efficiency of the Internet sales process.

A clearer definition of the concept of "e-commerce enterprise" can be formulated on the basis of a methodological comparison of related concepts and categories: "e-commerce at the enterprise", "e-business", "electronic commercial activity", "entrepreneurial activity based on electronic commerce".

According to Article 263 of the Economic Code of Ukraine, economic and commercial activities are actions carried out by economic entities in the field of commodity circulation, aimed at the sale of products for industrial

and technical purposes and consumer goods, as well as auxiliary activities that ensure their sale by providing relevant services (Economic Code of Ukraine, 2003). The rapid development of EC naturally requires regulatory and legal regulation of this sphere, taking into account the trends of digitization of all socially significant processes.

The concept of "enterprise e-commerce" is much narrower compared to the concept of "e-commerce enterprise", since the exchange of goods and money over the Internet is not systematic, but sporadic in nature. That is, if an enterprise in the field of trade from time to time sells and carries out financial and monetary transactions of such sales of goods via the Internet, combining them with traditional sales channels, it is not an EC enterprise, but an enterprise with electronic commercial sales channels.

Regarding the juxtaposition of the categories "e-commerce" and "e-business", e-business is much broader in content and can both cover EC and focus only on the presentation of goods or relations with consumers at the after-sales stage. Thus, according to the Western scientist Elias M. Awad, at the moment when value is exchanged, e-business becomes e-commerce. EC itself is a revenue generator for enterprises that have decided to use the Internet for the sale of goods and services (Elias, 2005).

Electronic commercial activity is a type of economic activity that is conducted electronically, has a full cycle of business processes and, like a traditional economic activity, has a number of operations: ordering goods, confirming, making online payments, delivering the order (Miroshnyk & Litvynenko, 2022).

That is, in essence, an enterprise that implements electronic commercial activity in practice and is an electronic commerce enterprise. The term "entrepreneurial activity based on electronic commerce" means the activity of business entities with the aim of obtaining income from sales using information and communication systems and technologies. That is, the EC is the basis of such entrepreneurial activity.

The presence of a website in itself is not a criterion for classifying an enterprise as part of the EC sphere. Websites, online stores, trading platforms, through which companies display their products for further sale, transform traditional trade into electronic. However, e-commerce is a broader concept, it includes e-commerce. However, the criterion for assigning the enterprise to the sphere of EC is the fact of carrying out a full cycle of commodity-money relations via the Internet. An enterprise can then be considered e-commercial when it implements trade behavior in which commodity exchange takes place, transactions using information and network technologies, Internet platforms (Dongdong, 2021).

Having outlined the methodological features of the categories related to EC and defining the essence of the EC enterprise, we will proceed to the classification of approaches to this concept and the analysis of the system management of EC enterprises.

One of the main tasks of system management is the study of the set of properties of the management decision-making process. A set is defined as a set of units that have some common attributes in accordance with the research objectives. Such a definition suggests that management deals primarily with systems. Accordingly, understanding the essence of the system, its features and internal relationships is the main content of system management.

Such a systemic vision of management contains a set of systemic methods of perception, cognition and transformation of the economy, including theory, practice, policy and economic management. According to this concept, strategic management is the basis and source of the co-evolutionary development of economic planning systems, the structural organization of the subject area of management, the implementation of strategic directives, as well as the system of mechanisms for coordination and interaction of independent management objects (Kleiner, 2023).

The definition study of e-commerce available in the economic literature showed that, as a rule, each of them contains three components: structural and process, technological and legal.

Approaches to defining the concept of EC are essentially systematized in *Figure 1*.

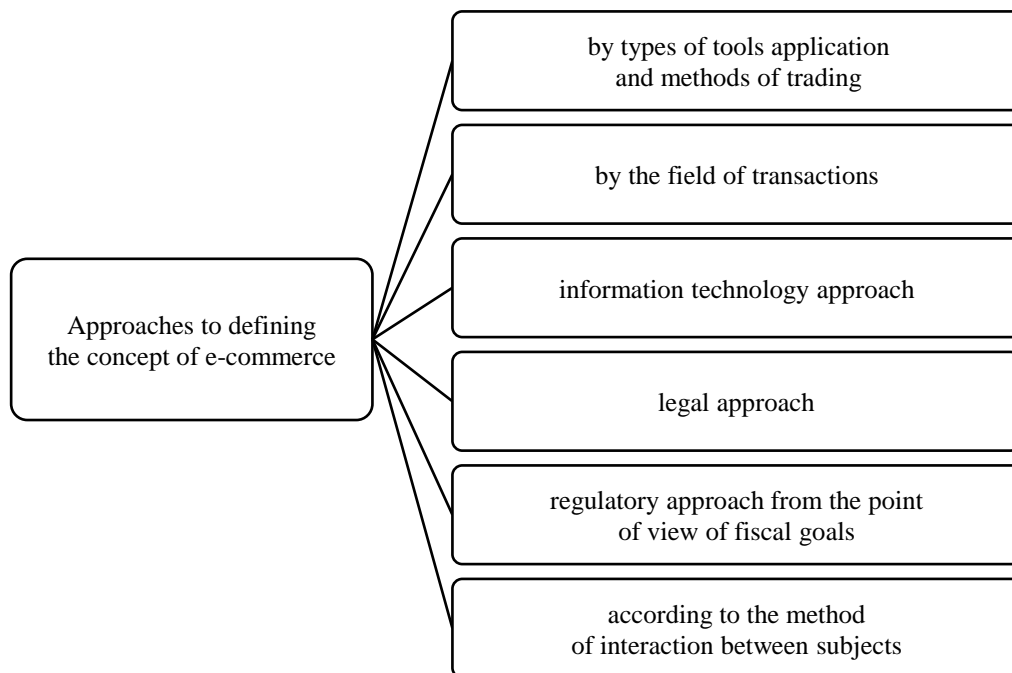


Figure1. Classification of approaches to defining the concept of electronic commerce

Source: developed by the author.

Based on the integration of the images shown in Figure 1, it is possible to determine the essence of electronic commerce as an economic activity in which commodity exchange is carried out using information and network technologies. At the same time, the EC performs a fiscal function; needs legislative regulation, elimination of terminological conflicts at the level of legal acts. EC is implemented through digital platforms; transactions take place in the field of telecommunication networks. The EC concept is formed within the framework of the information technology approach, according to which digital transformation contributes to the diversification of business and its development of new market niches of Internet commerce. The method of interaction between EC subjects is not direct communication, but mediated by the Internet.

Accordingly, the EC enterprise management system itself must take into account the aspects of effective implementation of new information technology tools and methods of trade, transaction management, legal norms, including tax, regulation of this sphere and promote the most effective interaction of all its subjects.

According to the author's thought, the management system is a part of the social and economic system, isolated on the basis of connections that characterize the relationship between objects and the subject of management. Any management system is formed by the subject of management, but it has an objective nature, as it is based on laws and principles of management. The management decision is the final result of the management subject's thinking process and is a tool for the interaction of the management system with executive systems. As a result of such interaction, management subjects expect the solution of a certain problem and the achievement of the desired results. A timely and competent management decision creates prerequisites for achieving the goal of the company's activities. However, the subject of management when making a management decision is extremely dependent on the quality and completeness of information provided by executive systems.

The effectiveness of the management system of the EC enterprise is determined by the synergy effect, that is, the aggregated qualitative effect of the interaction of management subsystems, which is significantly higher than the effect of the action of each subsystem in the form of their simple sum.

The idea of imbalance and chaos as the basis of systems development became the basis for the development of H. Haken's theory, within which the term "synergetics" (translated from Greek – "joint strengthening") was first introduced into circulation. Developing L. Bertalanfi's thesis about the open nature of systems (Bertalanfi, 1950), H. Haken formulated the proposition that as a result of the self-organization of system elements, it acquires a new characteristic that is not equal to the sum of the corresponding characteristics of individual elements or is completely absent from them (Haken, 2020). This principle has become one of the main ones in all fields of knowledge, because in each of them there are examples that confirm the correctness of this thesis.

2. Deepening the McKinsey 7S model

Common values are important for achieving synergies. This view is confirmed by the McKinsey 7S model, which is based on the analysis of the impact of internal factors on the development of an enterprise.

The McKinsey 7S model was developed in the early 1980s by Tom Peters and Robert Waterman, two consultants who worked for the consulting firm McKinsey & Company (Peters & Bay, 2011).

This model was used to analyze more than 70 large organizations. The peculiarity of the model is the fact that it was created as a recognizable and easy-to-remember model in business.

The seven elements, which the authors called "levers," begin with the letter "S" and include "strategy," "structure," "systems," "style," "staff," "skills," and "shared values." *Table* summarizes the definition of the elements of this classical model and contains an additional component – the implementation of EC with its inherent subsystems in the enterprise management system.

Table

Definition of the elements of the McKinsey 7S model

Elements	Definitions	Implementation of EC in the enterprise management system
<i>Strategy</i>	Actions that a company plans to take in response to changes in its external environment to maintain and enhance its competitive advantage	Digital strategy is actions taken by the company to improve website search engine optimization, content marketing, social media promotion, big data analytics, etc.
<i>Structure</i>	The basics of organizational hierarchy, information interaction and coordination of activities of individual structural units in a single system with the definition of subordination and areas of responsibility. The structure is influenced primarily by the strategy, size and diversity of the organization	Structural hierarchy, structural coordination of elements of the e-business business model: business analytics, customer relationship management, supply chain management, enterprise resource planning, partner communications and e-transactions via Intranet and Extranet
<i>Systems</i>	Formal and informal procedures that are performed by employees on an ongoing basis to achieve certain work results and are aimed at implementing the organization's strategy, achieving its goals and supporting the organization's structure	Systematic actions aimed at generating profit, carried out remotely using information and communication systems
<i>Style / Culture</i>	It mainly refers to the management style and culture of top-level managers. This element consists of two components: organizational culture: the dominant values, beliefs and norms that evolve and over time become relatively stable features of organizational life – its atmosphere; management style: depends more on what managers do than on what they say; how managers spend their time; what they focus on	Corporate culture of the virtual organization

Elements	Definitions	Implementation of EC in the enterprise management system
<i>Staff</i>	Human Resource Management (HRM) – processes used in the organization to develop managers, form their basic values and skills as managers, socialization processes and ways to introduce young personnel to the company, forming a team spirit among employees and effective knowledge management	Digital HR management based on the introduction of new HR management practices
<i>Skills</i>	The actual skills and competencies of employees working for an organization, the combination of which allows the organization to be competitive. Changes in the organization’s strategy can have a decisive impact on the formation of the need to change or, conversely, improve the skills of employees	Application of digital skills and competencies
<i>Shared Values</i>	The fundamental principles and beliefs that define the culture, identity and focus of an organization, its mission. They include norms and standards of employee behavior, professional ethics, and approaches to doing business. Shared values are the central element of the organization’s activities and are reflected in all aspects of the organization’s activities. Changing them will lead to changes in all other elements of the system	Formation of online communities with corporate standards of behavior for company personnel and online consumer communities

Source: compiled by the author based on Peters & Bay, 2011

The management strategy of an EC enterprise (Strategy) is complemented by actions to improve search engine optimization of the website, content marketing, social media promotion, big data analytics, etc. It is the management strategy of EC enterprises that lays down the vector for the implementation of commodity and monetary exchange, financial and monetary relations through Internet platforms, which distinguishes them from other enterprises. The strategy of EC enterprises is aimed at creating an optimal information base conducive to the development of e-commerce platforms operating in the context of global digitalization and within legal restrictions (Alazzam et al., 2023).

The structural divisions of an EC enterprise (Structure) are business intelligence, customer relationship management, supply chain management, enterprise resource planning, partner communications, and electronic transactions via the Intranet and Extranet. Systematic actions (Systems), which are aimed at generating profits, are carried out mostly remotely using digital platforms and AI technologies. At the same time, the sequence of digital strategic actions initiated by the EC platform has a significant impact on the competitive advantages in the market interaction of EC enterprises (Hu et al., 2022).

Corporate culture (Style) as a unity of organizational culture and management style is transformed into a kind of virtual culture that develops

at the levels of organization creation, operation of material and technical means, work with clients and interaction with agents (personnel). An important level of the corporate culture of an EC enterprise is a set of norms, rules and actions to protect information circulating in the organization (Loiko, 2013). An important aspect here is the trust of the EC enterprises in digital platforms, whose culture is determined by sustainability, uncertainty avoidance and long-term orientation (Qin, et al, 2021).

The HR subsystem is undergoing significant changes in the EC organization. This is due to the influence of globalization trends, job automation, large-scale digitalization, and restructuring of activities that expand partnership opportunities. The phenomenon of digital HR is emerging as a system of effective interaction of human resources (with more developed skills and knowledge that form digital competencies), a digital workplace and the use of new methods of human resource management (Future Work Skills, 2020). Moreover, digital HR at EC enterprises is developing taking into account qualitatively new technologies: AI algorithms in HR, social networks, cloud services, crowdsourcing, onboarding, etc. that form fundamentally different management strategies in the context of modern trends in HR analytics, HR automation, HR marketing, Smart recruiting, and e-learnin.

The Skills subsystem is expanded by corporate web portals that significantly increase staff productivity through optimization of the management system, use of an internal corporate portal, and increased employee awareness. Such an information system generates personalized recommendations for each employee with automatic linkage to the relevant structural unit of the enterprise, quickly responding to changes in the services available to the employee (Elsner & Krämer, 2013).

Thus, the range of employees' professional competencies is expanded by digital skills – a set of knowledge and skills necessary for the effective use of information technology by employees and the growth of their labor productivity (Kuibida, 2019). Shared Values under the influence of digital technologies are transforming towards the formation of virtual communities with a common mission and norms of corporate behavior, consumer communities where the information and communication interface supports the business processes of the enterprise and online purchases of loyal consumers in the supply chain pull strategies (Utami et al., 2021).

3. Determinants of e-commerce enterprise management

Based on the results of the carried out analysis, the determinants of system management of the EC enterprise in the context of the system approach are allocated. According to L. Bertalanffy's theory of system openness, each system cannot be considered as isolated, it is necessary to take into account its constant exchange of material, energy and information resources with the external environment (Bertalanffy, 1950).

Given Haken’s theory of self-organization of systems (Haken, 2020), each management system of an EC enterprise is a synergistic unity and interaction of internal and external determinants.

The main external determinants that determine the features of the system management of an EC enterprise include information technology, knowledge, monetary and financial relations, labor and human resources (*Figure 2*).

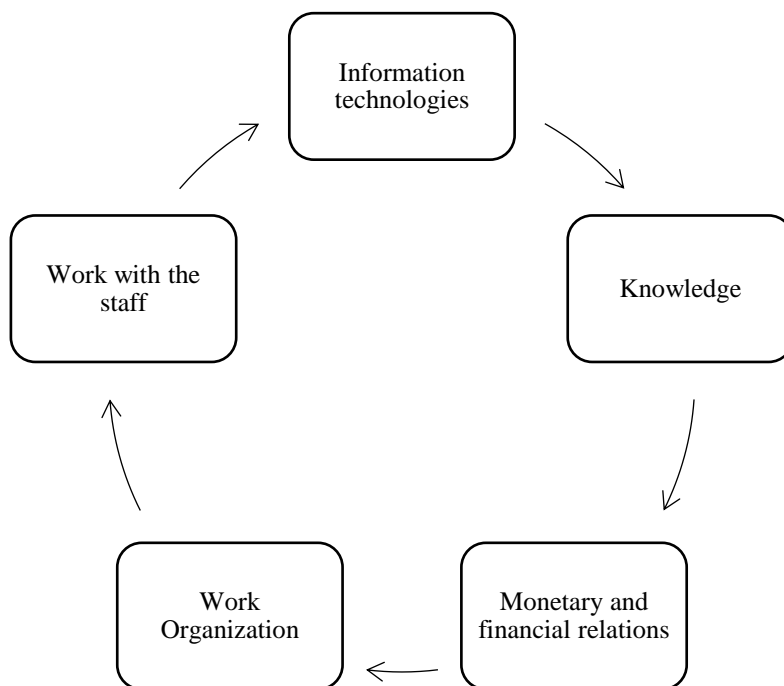


Figure 2. External determinants of e-commerce enterprise system management

Source: developed by the author.

When examining the internal determinants, we note that the EC concept is characterized by integrated decision-making in such areas as business operations and information technology. One of the main ideas of the presented study is to combine the functionality and components of EC in order to position an e-commerce enterprise as a system.

The system of any EC enterprise consists of several important components:

- database
- website of the e-commerce enterprise;
- security system;
- payment gateway.

These components define the internal content of the e-commerce enterprise and are the core of its system. The diagram in *Figure 3* shows how these components are combined together.

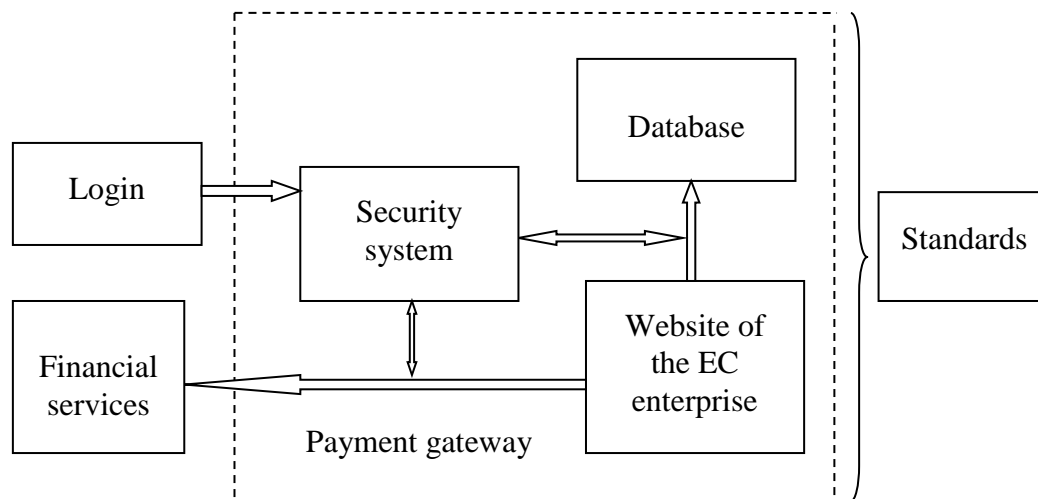


Figure 3. Internal determinants of e-commerce enterprise system management

Source: author's development.

These components are the internal determinants of the system management of an EC enterprise, since they are explained in terms of e-commerce, rather than general systems theory, i.e., in a sense they are "tangible" or "real", important for the functioning of the enterprise and achievement of effective results.

The internal and external determinants of the system management of an EC enterprise interact with each other and lead to synergistic effects that result in the formation of a qualitatively new ecosystem of financial business, human resource management, improved customer experience, increased sales and profits.

Conclusions

It is proposed to consider the activities of EC enterprises on the basis of a systematic approach as a synergy of interaction of internal and external determinants of their management. At the same time, an enterprise can be classified as an EC enterprise when its activities are aimed at the full cycle of commodity-money relations via the Internet.

The article is defined the essence of an e-commerce enterprise by the prevailing feature of realization of the full cycle of commodity-money relations via the Internet. On the basis of a methodological comparison of categories related to EC, it is proved that EC enterprises include enterprises that implement commodity exchange, transactions using information and network technologies, Internet platforms.

The author reveals the essence of EC as an economic activity in which commodity-money relations take place only on the basis of information and network technologies and digital platforms, without direct communication

between sellers, buyers, suppliers and other stakeholders. E-commerce performs a fiscal function along with traditional businesses, but requires proper legal regulation. Conceptually, EC is formed in the bowels of the information technology approach, which considers digitalization as the dominant trend in modern social development.

The hypothesis put forward in the course of the research is confirmed that the traditional McKensey 7S model becomes more meaningful in the context of digitalization, and the structural analysis based on it helps to identify the determinants of system management of EC enterprises.

The scientific contribution of the research is the development of a theoretical approach to the analysis of system management of e-commerce enterprises, which is a qualitatively new understanding of the phenomenon of management based on perception, cognition, and transformation of business processes of an enterprise. The basis of this approach is strategic management and synergistic coordination of subsystems: digital strategy, e-business structure, systematic information and communication actions, virtual corporate culture, digital HR, digital skills and competencies, online communities with common corporate values. The practical value of the result lies in the possibility of implementing the theoretical approach in the management strategies of EC enterprises.

Thus, in order for the activities of EC enterprises in Ukraine to meet the requirements of the modern post-industrial economy and ensure the effective implementation of a new conceptual vision in management practice, their system management must undergo a scientific rethinking, which will require solving a number of problems: lack of a unified view of the essence and features of systemic organizational management, which would include the entire list of attributes of the established scientific discipline, namely: a clear definition of the systemic management of e-commerce enterprises, the object and subject of study of the science of it and the methodology of cognition; poor integration of the systematic approach to organizational management of e-commerce enterprises, lack of unified ideas about the relationship of system management, primarily with strategic management; lack of a unified approach to understanding what determinants determine, first of all, the features of system management of e-commerce enterprises; eclecticism in the work on the practical implementation of system management at e-commerce enterprises; difficulty in measuring the practical results of system management in e-commerce enterprises and its effectiveness; a significant gap between the introduction of system management in management decision-making at e-commerce enterprises and the practice of its implementation.

Effective implementation of the new conceptual approach to system management of e-commerce enterprises should be aimed at improving the effectiveness of the internal and external determinants identified in the study.

Prospects for further research include determining a methodology for assessing the effectiveness of system management of an e-commerce enterprise, diagnosing the content and structure of its system management, and developing a model for improving its efficiency on this basis.

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DIGITAL MARKETING AUTOMATION

Increased competition in an uncertain digital environment requires new approaches to improving marketing and business efficiency. Automation of business processes and marketing ensures management decisions aimed at improving customer experience by collecting, processing, and analyzing a huge amount of objective customer data from various sources and software services. For the company, it saves time and resources by automating routine processes, and, given the improved customer experience and corresponding loyalty of the target audience, it helps to increase the efficiency of marketing investments and improve the effectiveness of digital marketing (DM) and business. The article is aimed at substantiating the structure of a single user profile based on the integration of ESP and other DM software services with a CRM system. The hypothesis is formulated: creating a single user profile based on the integration of ESP and other DM software services with a CRM system by speeding up communication and improving customer experience will increase the efficiency of DM and business in general. The research was conducted using general scientific and special methods: analysis and synthesis, system-structural analysis, comparison, systematic, logical generalization of results. Considerable attention is paid to email marketing, which remains one of the most popular DM automation tools, as it allows you to smoothly guide the consumer through the

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АВТОМАТИЗАЦІЯ ЦИФРОВОГО МАРКЕТИНГУ

Посилення конкуренції в умовах невизначеності зовнішнього цифрового середовища потребує новітніх підходів до підвищення ефективності маркетингу та бізнесу. Автоматизація бізнес-процесів та маркетингу забезпечує прийняття управлінських рішень, спрямованих на покращання клієнтського досвіду шляхом збору, обробки та аналізу величезного обсягу об'єктивних клієнтських даних з різних джерел та програмних сервісів. Для компанії це дає змогу заощадити час і ресурси шляхом автоматизації рутинних процесів та з урахуванням покращеного клієнтського досвіду й відповідної лояльності цільової аудиторії, що впливає на збільшення ефективності маркетингових інвестицій, підвищення ефективності цифрового маркетингу (ЦМ) та бізнесу. Метою статті є обґрунтування структури єдиного користувацького профілю на основі інтеграції ESP та інших програмних сервісів ЦМ з CRM-системою. Сформульовано гіпотезу: створення єдиного користувацького профілю на основі інтеграції ESP та інших програмних сервісів ЦМ з CRM-системою завдяки пришвидшенню комунікації та покращенню клієнтського досвіду сприятиме підвищенню ефективності цифрового маркетингу та бізнесу загалом. Використано загальнонаукові та спеціальні методи: аналізу та синтезу, системно-структурного аналізу, порівняння, системний, логічного узагальнення результатів. Значну увагу приділено email-маркетингу, який залишається одним з найпопулярніших інструментів автоматизації ЦМ, оскільки дає змогу плавно проводити



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sales funnel with a high return on marketing investment. The effectiveness of integrating a CRM system and an ESP is proved, due to the specialization and functional features of the latter in interacting with consumers via email. The technologies, stages and tools of DM automation are systematized. It is proposed to collect all information about a particular consumer in a single user profile. This requires finding a technical solution for each business process and connecting software services into a single digital ecosystem. Collecting information about the company's customers and their journey at all points of interaction in one place by integrating the services used into a single user profile allows you to make more effective decisions in marketing and business and achieve business goals.

Keywords: digital marketing, marketing automation, email marketing, email newsletters, emails, email campaigns, ESP, CRM, single user profile, digital ecosystem, technologies, processes.

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Introduction

Under the current conditions of uncertainty of the external digital environment and fierce competition, the effectiveness of companies depends on making management decisions based on the collection, processing and analysis of a huge amount of data. The spread of marketing automation in the digital environment is primarily related to the ability to save companies' time spent on processing a large amount of information and performing routine work. This directly affects the effectiveness of digital marketing (DM) and business as a whole.

Scientists mostly consider automation from the point of view of managing business processes of companies. Thus, in the study (Losheniuk, 2022) the functional areas that are most subject to automation in business are highlighted: procurement, finance, human resources management, sales and marketing. The article by Krause et al. (2022) is devoted to the study of the CRM system as a source of information for the development of marketing projects, automation and optimization of business processes from the standpoint of strategic management of competitiveness. Berestetska et al. (2023) analyze the problems of improving business processes using the CRM system, referring marketing to one of the key areas of automation in the company. These scientists identified the CRM system as the main automation technology. Different systems are compared according to their purpose and functionality.

споживача воронкою продажів за високої рентабельності маркетингових інвестицій. Доведено ефективність інтеграції CRM-системи та ESP завдяки спеціалізації та функціональним особливостям останньої у взаємодії зі споживачами за допомогою електронної пошти. Систематизовано технології, стадії та інструменти автоматизації ЦМ. Запропоновано усю інформацію відносно конкретного споживача збирати в єдиному користувацькому профілі. Необхідно для кожного бізнес-процесу знайти технічне рішення та з'єднати програмні сервіси в єдину цифрову екосистему. Збір інформації про клієнтів компанії та їх шлях у всіх точках взаємодії в одному місці завдяки інтеграції використовуваних сервісів в єдиний користувацький профіль надає можливість приймати більш ефективні рішення у маркетингу та бізнесі, досягати цілей діяльності.

Ключові слова: цифровий маркетинг, автоматизація маркетингу, email-маркетинг, email-розсилка, email-листи, email-кампанії, ESP, CRM, єдиний користувацький профіль, цифрова екосистема, технології, процеси.

The research (Mero et al., 2020) substantiates the cause-and-effect relationship between the implementation of marketing automation technologies, in particular CRM, with the expected target effectiveness of entrepreneurial activity in conditions of uncertainty of the external environment. The authors identify five key areas of marketing automation: customer knowledge, information systems infrastructure, analytics, interdepartmental dynamics, and change management. The scientific work of Silva et al. (2023) is dedicated to identifying the role of marketing automation in measuring profit from marketing activities; the authors highlight the strategic and tactical advantages of software implementation.

According to the results of the analysis of the mentioned sources, it was found that the main attention of scientists is focused on the functional capabilities of CRM systems and their contribution to increasing the efficiency of business activities and the impact on increasing the return on investment in marketing. The author fully supports the conclusions from the above studies. However, the formation of the optimal structure of various services that are integrated with CRM to create a single user profile in order to speed up communication with consumers and improve the customer experience remains an unsolved problem. In particular, in the mentioned studies devoted to marketing automation, email marketing is not presented as one of the powerful automation tools and the possibility of its integration with CRM is not considered. Solving this problem has a direct impact on increasing the return on marketing investments and business efficiency in general. In addition, the development of digital technologies used in the automation of marketing processes is of great importance for the development of the Ukrainian economy in the post-war period (Rudenko, 2023).

The aim of the article is to substantiate the structure of a single user profile based on the integration of ESP and other software services of the DM with the CRM system. To achieve the goal, it is necessary to perform the following tasks: identify the role of email marketing in automation and systematize digital marketing campaigns by email using ESP; present the order of integration of the CRM system and ESP; systematize technologies and stages of marketing automation and propose a structure of a single user profile based on the integration of various sources of information and services.

To realize the aim, the hypothesis was formulated that the creation of a single user profile based on the integration of ESP and other software services of DM with the CRM system, thanks to the acceleration of communication and the improvement of the customer experience, will make it possible to increase the efficiency of the DM and business in general.

To test the hypothesis, the following general scientific and special research methods were used: analysis and synthesis, system-structural analysis, comparison (to establish the relationship between the goals of the DM and types of e-mails; selection of types of digital marketing campaigns by e-mail using ESP; selection of evaluation indicators effectiveness of email

marketing); system (for systematization of technologies, stages and marketing automation tools, formation of a single user profile); logical generalization (formulation of conclusions from the conducted research).

In the three sections of the main part of the article, e-mail marketing is consistently substantiated as one of the most effective tools of DM automation, the types of e-mails are highlighted and described, and their relationship with the image and conversion goals of DM is established; digital e-mail marketing campaigns and e-mail marketing effectiveness indicators are characterized; the procedure for integrating the CRM system and ESP is substantiated and described; systematized technologies, stages and tools of DM automation; a single user profile based on the integration of ESP and other DM software services with the CRM system is presented; an example of a digital ecosystem of marketing automation of an e-commerce enterprise is given.

1. E-mail marketing and ESP

Email is currently one of the most popular DM tools, as it helps move the user from one stage of the consumer journey to the next, providing a high return on investment (Dice, Henneberry, 2020, p. 279). E-mail marketing as a DM tool helps companies to communicate with subscribers and customers through e-mail in order to build relationships and/or make sales.

In Ukraine, the most popular e-mail providers are Gmail, Outlook, UKR.NET, Yahoo! Mail, and others. (Sternenko, 2022). Yes, Gmail is convenient for those who use Google's digital products, enabling file sharing. A feature of Outlook is the possibility of integration with various third-party programs, in particular: Skype, Facebook, PayPal, Trello, etc., which allows an enterprise that uses many platforms to communicate with users to communicate with those that do not use directly Outlook. Gmail and Outlook providers have 15 GB of free storage. UKR.NET mail is most often used by representatives of small businesses, freelancers and self-employed persons. The storage size is 4 GB. A feature of Yahoo! Mail is a huge amount of storage of 1TB (terabyte), which allows you to attach attachments with photos and videos to emails and easily find everything sent during the entire time of using the mail.

Emails sent by companies, taking into account marketing aspects, are divided into three types (Dice, Henneberry, 2020; Rawls, 2020): promotional emails, relationship-building emails and transactional emails. Each type of letter is sent to a specific user with a specific purpose and at a specific time to advance them through the sales funnel and to build long-term partnerships.

Electronic newsletters present potential consumers, leads and customers (from the email mailing list) with a value proposition, that is, they promote an "offer". It can be: content that sells; a conditional offer with the aim of obtaining a lead contact, a so-called lead magnet, for example, a

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"white paper" (official and detailed guidance on any issue), a checklist, a webinar, etc.; information about the release of a new product or the introduction of a new service; event announcements; trial use offers; promotional offers; personalized offers for a specific consumer, etc. Email newsletters are the most common type of marketing email. According to statistics, 66% of users make a purchase directly after receiving a letter by e-mail (Dice, Henneberry, 2020, p. 281).

Relationship building emails provide consumer value to subscribers by offering free content or information. These can be: welcome letters to new subscribers; blog articles; poll; announcements about the competition, etc. Such communication makes it possible to build a deeper relationship between the consumer and the brand, because a person spends his time looking at the content of these letters and, provided that the content is correctly selected, interesting and useful, which is sent regularly, he gets used to such communication and even expects letters from the brand.

Transactional emails are sent in response to an action taken by the consumer during communication with the company: order confirmation, receipts, coupons with promotional codes, product shipment notification, account registration, product return, customer service message, password reminder, confirmation of termination of subscription, etc. Transactional emails have the highest open rates of the three email types and generate 2–3% more revenue than standard mass emails (Dice, Henneberry, 2020, p. 283). This is due to the fact that through transactional letters, the company broadcasts respect for its customers and continues the dialogue with them, without leaving a person alone without thanks or with unresolved problems.

In the *Table 1* it is presented the relationship between the image and conversion goals of the DM and the types of e-mails.

Table 1

Email types for digital marketing purposes

Marketing objective	Email type		
	Promolist	to build relationships	transactional
Customer support	–	–	+
Raising awareness of problems and solutions	–	+	+
Increase brand awareness	–	+	+
Getting new leads and customers	+	+	+
Onboarding of leads and customers	+	+	+
Sales of a key offer	+	+	+
Monetization of existing leads and customers	+	+	+
Building a community of brand promoters	+	+	+

Source: Adapted from Dice, Henneberry, 2020; Kotler, Cartajaya, Setiawan, 2020; Iankovets, 2023.

The automation of modern processes, the best practice of email marketing, the need to reduce the cost of working time and increase the efficiency of its use require the division of emails into two types depending on the way they are sent, namely on the degree of participation of the email provider (Voronyuk, Polishchuk, 2018; Dice, Henneberry, 2020; Rawls, 2020): mass and automatic.

Bulk emails are emails that are manually sent to all of a company's subscribers. They are sent not in response to any consumer actions, but at a specific time with a specific purpose. They include:

newsletters – sent out periodically (daily, weekly, monthly) to the entire subscriber base, provided that such a promise was made when subscribing to the newsletter;

marketing offers – only those basic marketing offers that can provide consumer value for all subscribers are sent to subscribers from the email mailing list. Other offers must be sent by segmented lists;

segmentation – one letter is sent to the entire list in order to identify the specific interests of certain consumers, after which the email list is divided into segments.

It is important for companies to keep people in mind and not annoy them with too many mass emails and thus not spoil the relationship with their consumers, which can lead them to break the relationship and unsubscribe from the email newsletter.

Most e-mails should be automated to optimize time spent and improve the effectiveness of e-mail marketing. After the content has been prepared and worked out, the mailing is transferred to the e-mail distribution service (ESP, Email Service Provider), which performs it automatically. It is important to set up automatic mailing correctly so as not to annoy consumers with an excessive number of letters that come to them in the mail. It is advisable to use automatic mailing for the following types of letters: a greeting to a new subscriber; a letter with a conditional offer; confirmation of registration; receipt for payment of purchased goods (services); segmented marketing offer; request to leave a review about the product, brand, company; reminders about products in the basket; restoration of relations with the brand, etc.

Sending e-mails is most effective when it takes place according to a developed annual calendar of promotion, which can be drawn up, for example, with the help of Google Calendar. The plan for each product shows the promotion objectives and corresponding KPIs (both financial and non-financial), as well as adopted and potential promotion activities. After the annual promotion plan is developed, monthly and quarterly plans are created based on it. Calendar scheduling allows you to evenly distribute different types of emails over a specific period of time, which keeps attention and engages consumers without the risk of overdoing the same types of emails or sending them too often, which can cause consumer irritation and unsubscribe.

In order to smoothly and delicately, without excessive and aggressive imposition, move consumers through the sales funnel, various types of marketing e-mail campaigns are used (Voronyuk, Polishchuk, 2018; Dice, Henneberry, 2020; Rindfleisch, 2020; Rowles, 2020):

educational (indoctrination, education, training): an automatic campaign, which is launched immediately after the subscription of a new person, with the aim of telling about the company/brand and assuring him that he made the right decision by subscribing to the email newsletter, joining, accordingly, to company/brand customer community. An email outreach campaign usually consists of one to three emails and introduces new subscribers to the company/brand on a deeper level. Educational email campaigns solve the following main tasks: to welcome new subscribers and introduce them to the company/brand; emphasize the benefits of subscriber status; tell subscribers what to do next; introduce subscribers to the individual characteristics of the brand;

engagement campaign: based on the subscriber's interests and automatically launched immediately after he performs a certain action. The goal of the campaign is to encourage the subscriber to convert by providing a personalized value proposition. When launching an engagement campaign, the company/brand must know the answers to the following questions: what is the next step expected from the consumer (register on the website, or accept a conditional offer, or make a purchase); whether the company/brand is sure that the consumer will take this step, whether he is ready for it (too much and too soon should not be offered, it can push the consumer away). Engagement campaigns solve the following main tasks: encourage subscribers to convert; taking into account the previously studied interests of consumers to move them to the next stage of the consumer's journey; take into account the previous positive action; prevent or overcome the most common objections to conversion; inform the next logical step; ask to make an order or the next step;

lift campaign: an automated campaign that is launched immediately after a purchase is made to convert customers into repeat buyers. This campaign is aimed at building a long-term relationship with the consumer, it solves the following main tasks: overcome or prevent the most frequent objections; inform the consumer of the next logical step; increase the average value of consumers by selling to them more and more often; increase consumer confidence in the company/brand; raise consumers to the level of brand advocates. For example, if a consumer bought a social media marketing training, he can be offered the next email marketing training with a corresponding discount;

segmentation campaign: this is the sending of electronic promotional letters manually to the entire base of subscribers with the aim of segmenting

the latter by interests. For example, an Internet agency plans to launch an online course on Internet marketing for different segments of its consumers: students, working marketers, and business managers. First, a letter is created with the announcement of such courses, which lists their advantages for different categories of consumers. The letter is manually sent to all the subscribers of the agency, and then the subscribers are segmented into three categories according to the transitions. Additional e-mails are prepared for each category, taking into account the interests of individual groups of consumers;

re-engagement campaign: an automated campaign in which emails are sent to subscribers who have not opened or clicked on previous brand emails in the last 30-60 days for various reasons. Re-engagement campaigns can get consumers back on the consumer journey again. But if some consumers still don't return after the campaign, their contacts should be removed from the mailing list and thus protect it from possible problems with non-delivery of e-mails.

Marketing email campaigns should be accompanied by an analysis of their effectiveness. The main indicators of email marketing effectiveness include (Voronyuk, Polishchuk, 2018; Dice, Henneberry, 2020; Rindfleisch, 2020; Rawls, 2020):

number of subscriptions;

the delivery rate of letters (Delivery Rate) – the percentage value of all letters from the mailing list delivered to the email inboxes of the addressees, regardless of whether they ended up in the "Inbox" or "Spam" folders;

indicator of open letters Open Rate (EOR) – the percentage ratio of the number of open letters and the number of sent letters;

unsubscribes and complaints (Unsubscribe Rate/Complaint Rate) – these indicators combine subscribers who no longer wish to receive letters:

Unsubscribe Rate characterizes the percentage of those users who unsubscribed from the newsletter in relation to the number of delivered letters;

Complaint Rate characterizes the percentage of those users who sent a letter to the "Spam" folder.

People's interests change over time, so unsubscribing from newsletters is a natural phenomenon. Along with unsubscribes, new subscribers also appear. More deeply, the effectiveness of email marketing and interest in the company/brand can be measured by comparing the percentage change in the number of subscriptions and unsubscribes. Growth in subscriptions must exceed growth in unsubscribes. For a brand, unsubscribes only affect the reduction of the subscriber base at the moment. But sending a letter to spam affects the reputation, which depends on the delivery of letters. If the Complaint Rate exceeds 0.1%, the next mailing may be blocked;

clickability indicators Click-through Rate (CTR) and Click through Open Rate (CTOR):

CTR is the share of users who clicked on clickable elements in the letter (link, image or button), relative to the number of delivered letters;

CTOR is the share of unique clicks relative to the number of open emails. The *CTOR* indicator makes it possible to more objectively assess the interest of subscribers to the newsletter, since its calculation takes into account the clicks of unique users on opened letters.

For example, 100 letters were sent in the newsletter, 50 of them were opened, 10 clicks were made:

$$CTR = 10 : 100 \cdot 100 = 10\%;$$

$$CTOR = 10 : 50 \cdot 100 = 20\%.$$

After improving the subject of the letter, the number of open letters increased to 70, clicks – to 14:

$$CTR = 14 : 100 \cdot 100 = 14\%;$$

$$CTOR = 14 : 70 \cdot 100 = 20\%.$$

When the value of the *CTR* indicator increases by 4 percentage points (from 10% to 14%), the value of the *CTOR* indicator remains unchanged (20%). This indicates that the interest of users in the letter has not changed in general, and the increase in the number of clicks occurred only thanks to a successful title. Therefore, to increase the effectiveness of the letter in the newsletter, you need to work further, perhaps on improving its content and/or design (checked with the help of A/B testing).

In addition to these indicators of clickability, e-mail distribution services show information on the number of clicks on each link in the letter, which makes it possible to identify the most interesting materials for users. This approach is also used to segment the target audience.

In general, the value of click-through rates depends on the market segment (for the b2b segment, the *CTR* value will be higher due to a more personalized approach), the type of business, the type of emails and other factors. Therefore, during the analysis, you need to focus on comparing the current values of the clickability indicators with your own previous values of these indicators. For example, if the average *CTR* was equal to 2%, and after conducting an email campaign it became 3-4%, it means that the campaign was successful. Or vice versa, if the value of *CTR* decreases to 1%, this will indicate that the campaign goals have not been achieved. It is also advisable to compare the values of these indicators with the average values by type of activity (consulting services, real estate, advertising agencies, beauty salons, car salons, etc.) to identify the best experience of competitors and own shortcomings compared to them, for improvement;

conversion rate (Conversion Rate) characterizes the share of users who performed the targeted action planned in the letter (purchase or order, viewing a certain number of pages on the site, registering for the event, etc.).

You can view the conversion rate in the Google Analytics 4 "Traffic Sources" and "Conversions" reports. Conversion depends not only on the email, but also on other factors: value proposition, design and quality of website content, convenient usability, etc. Therefore, increasing conversion is a systematic and integrated work of the entire marketing team. One way to increase conversions is to use a chain of letters, that is, several letters combined with one goal. One letter may not immediately lead to a sale, but it will heat up interest and, thanks to the second letter, the person will make a purchase. Therefore, it is considered more appropriate to calculate the total conversion of a chain of letters, and to analyze the opening and clicks for each letter;

reputation (Email Reputation) is a complex indicator that is calculated by e-mail distribution services and characterizes how much they trust the company/brand. It depends on whether the letter will end up in the "Inbox" folder or the "Spam" folder. The reputation is affected by various factors: the presence of the IP address or domain of the site in black lists due to spam; user complaints about spam; the share of emails that users delete without reading; regularity of mailings; content of letters; references in letters; EOR and CTR indicators; answers to letters, etc. That is, the reputation depends on the actions of the company/brand when using email marketing and the corresponding reaction of subscribers. As a rule, not all mailings are blocked, but a part of them, so you need to analyze the reputation and, having noticed that 2–5% of emails fall into spam, look for the reasons and eliminate the identified problems.

All of the indicated indicators of email marketing effectiveness are calculated by email distribution services and presented in the corresponding reports.

The use of ESP allows speeding up this process thanks to its automation; increasing the reputation and guaranteeing of letter delivery; collecting statistics and analyzing the effectiveness of email campaigns. Popular mailing services in the world and in Ukraine are Sendpulse, Mail-Chimp, Campaign Monitor, UniSender, GetResponse, eSputnik, Zoho Campaigns, Selzy, and others (Hostiq, 2023). Each of them has its own functionality, cost, advantages and disadvantages, and the choice of service depends on the goals and tasks of email marketing and the resource capabilities of the company. It is also important that e-mails are fully optimized for different screen sizes, since most of them are opened from mobile phones these days to monitor incoming correspondence and urgent responses.

When choosing a service, it is important to take into account the possibility of accessing information about users and their interaction with the company's website, that is, the possibility of integration with the CRM system and other platforms.

2. RM system and ESP Integration

CRM (Customer Relationship Management) is an approach to doing business based on managing relationships with customers. A CRM system is a database, a place where all contact details and information about all interactions of each lead and customer with the company are stored throughout the customer's life cycle. The main goal of implementing a CRM system in the company's activities is to build a strategy of interaction with customers based on consolidated information about customers and their preferences. Marketing and sales tasks that a CRM system helps to solve include: setting up a customer profile, integrating with a website to obtain leads, automating digital marketing campaigns, building and managing sales processes, improving the customer experience (Dice, Henneberry, 2020; Mero et al. al., 2020; Rawls, 2020; Krause et al., 2022; Berestetska et al., 2023; Silva et al., 2023).

The CRM system also stores data and the history of relationships with suppliers and partners, which allows solving many other business tasks, including: business process management, product portfolio management, document flow automation, working time management, optimization of communication within the company, analysis and visualization data and generating reports for making managerial business decisions, etc. (CREATIO, n.d.).

Common CRM systems used in Ukraine are OneBox, Zoho, HubSpot, Salesforce, ActiveCampaign, Creatio, KeepinCRM, Perfectum CRM-ESP, pipedrive, etc. The criteria for choosing a CRM system for a company are: compliance of the system's functionality with the company's needs; value propositions in packages to choose from and their cost; base capacity; integration possibilities with call tracking services, email marketing, social networks, messengers, chat bots, marketplaces, payment systems and other platforms; availability of analytical capabilities, dashboards and useful widgets in reports for sales and marketing departments, etc., depending on the needs of the company.

Marketing automation begins with the implementation of a CRM system, in which email marketing functions can be added through plugins. But using a CRM system to send e-mails from a company office IP address increases the risk of being blacklisted and blocked by the e-mail provider because CRM systems lack spam filtering (Rawles, 2020, p. 182). This drawback is eliminated when using ESP. In addition, ESP offers more specialized reports specifically for email marketing than you can get from a CRM system.

The joint work of the two services begins with the formation and transfer of lists of leads and customers from the CRM system to ESP and setting up automatic email campaigns. ESP, in turn, returns to the CRM system detailed information about the reaction of users to letters from the company. This is important, because if such information is not returned, it is

duplicated in two systems, on the one hand, and on the other hand, there will not be complete information in each system, which will limit targeting to the target audience in the future. Synchronizing data in the CRM system and ESP to prevent data duplication provides an opportunity to resolve provider blocking issues and send whitelists.

The integration of both services, among other things, makes it possible to collect information through ESP in the form of questionnaires and surveys and use it in various marketing actions through the CRM system and future email campaigns. More advanced ESPs integrate with a company’s website to view user behavior. This provides an opportunity based on the collected information to dynamically create emails and send them according to established rules.

The company’s use of various services logically requires their integration to combine data received from various information sources and create a single user profile, which is why marketing automation is used.

3. Technologies and stages of digital marketing automation

DM automation allows you to combine all points of interaction between the client and the company/brand into a single integrated and personalized process. Marketing automation involves the use of specialized computer programs and technical solutions for the automation of marketing processes, the transfer of the company’s current business processes to the field of digital services in order to save labor and time resources. The main idea of marketing automation is to eliminate the routine work of people and replace them with robots so that people can focus on highly intelligent work (Dice, Henneberry, 2020; Rawls, 2020).

Automation of routine processes takes place with the use of special software that analyzes customer actions and develops personalized offers based on the received objective data. In *Figure 1* presents a single user profile in which all information is gathered to make smarter and more informed marketing and business decisions.

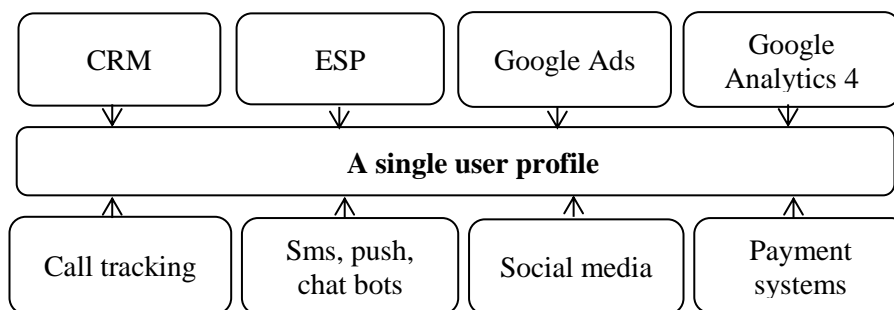


Figure 1. A single user profile based on the integration of various sources of information and services

Source: generated by the author.

The main marketing automation technologies include (Yankovets, Palicheva, 2020):

Site tracking is a technology that stores all the pages a website user has visited. This makes it possible to understand what the user is interested in, which sections of the site he visits more actively. Then, based on this data, you can build various automations and send personal e-mails. For example, the condition is set: "If the user visited page "A" on the site, e-mail No. 1 is automatically sent to him. If the user visited page "B" on the site three or more times, e-mail No. 2 is sent to him".

Lead Scoring (qualification of leads) is a technology by which it is possible to understand the degree of involvement of a lead and its readiness to make a purchase, it is a way to divide leads into "cold" and "hot". Thus, in a telephone conversation, the manager can feel the degree of interest of a person in making a purchase, which depends on his further arguments. You cannot see or feel a person's mood through the Internet, and with the help of web analytics, you can track the user's actions. The principle of Lead Scoring is based on the evaluation of user actions in points. So, a user's visit to the site is valued at 1 point; if the user opened the e-mail – he receives 2 points; clicked on the link in the letter – 3 points; visited the site again – 5 points. Depending on the number of points scored, users are divided into "cold" and "hot". E-mails, sms, push, etc. are sent to the "cold" ones. "Hot" calls are made by sales managers. The evaluation system can be configured in any way, depending on the tasks of the DM. Points are assigned automatically after setup.

Behavioral factors (Behavioral factors) are factors that result from the behavior of users, in particular: how a person behaves on the site; how actively communicates with the sales department; which pages are viewed. For example, ice, which visited the site 7 times in the last 2 days, is most definitely interested in the product. A lead that has looked at DM books 10 times is likely to buy a digital marketing book rather than a detective story; a lead that called the company three times or wrote to the mail is interested in the product (or, if it is a customer, maybe there is a problem that needs to be solved immediately). Accordingly, according to the behavior of a person, it is also possible to assign him points and classify him as a "cold" or "hot" consumer.

Geolocation factors – points are awarded depending on the company's focus on segments of certain territorial units.

Contact data is the data of the leads obtained by the system from the contact forms they filled out or provided their data to the manager by phone and he entered them into the CRM system.

Trigger marketing is a technology that allows you to communicate with the customer before and after the purchase. Triggered mailings are transactional emails or sms messages with special offers that are sent after a user activates a trigger. When using trigger marketing, the triggers can be:

the user opened/did not open the letter; clicked/did not click on the link in the email; visiting a certain page of the site; the number of visits to a specific website page; achieving a certain number of points using the Lead Scoring system; trigger depending on the stage of the deal; trigger based on date, time and day of the week; combination triggers, etc.

Marketing automation is a complex task that includes different stages. Each stage uses its own tools (*Table 2*).

Table 2

Marketing automation tools

Stage	The purpose of the stage	Instruments
Content creation and promotion	Generate and constantly update content on the site	Blog, services Semrush, Serpstat, Ahrefs, Majestic API, others (for competitor analysis), landing page builders, DMS
Advertising campaign	Find tools that will help make the advertising campaign more effective	Technologies that provide incoming traffic (Google Ads, Facebook Ads, Instagram Ads, LinkedIn helper), Programmatic, etc.
Lead conversion	Find tools to help collect contact information from users	Tools for obtaining contact data, communication channels (subscription pop-up windows, subscription offers, email, sms, push, chatbot), etc.
Interaction with leads	Automatically return the lead to the sales funnel through various communication channels, "warm up" him without the participation of people with the help of content	Email, sms, push, chat bots, calls
Lead management	Help managers optimize sales	CRM system, Lead Scoring, tools for lead movement through various stages of the sales funnel (email, sms, push, chat bots, calls)
Billing	Find a solution that will allow you to automatically accept payments on the site and transfer this data to the CRM system	Payment acceptance systems that must be integrated into the CRM system (PayPal, LiqPay)
Analytics of advertising campaigns	Measure the indicators and calculate the return of each advertising source/channel	Google Analytics 4, Google Data studio, Microsoft Power BI, OWOX BI, etc

Source: compiled by the author according to Mero et al., 2020; Rawls, 2020; Yankovets, Palicheva, 2020; Krause et al., 2022; Loshenyuk, 2022; Berestetska et al., 2023; CREATIO, n.d.

Marketing automation includes various processes that are solved by various programs and then collected in business analytics services (*Figure 2*).

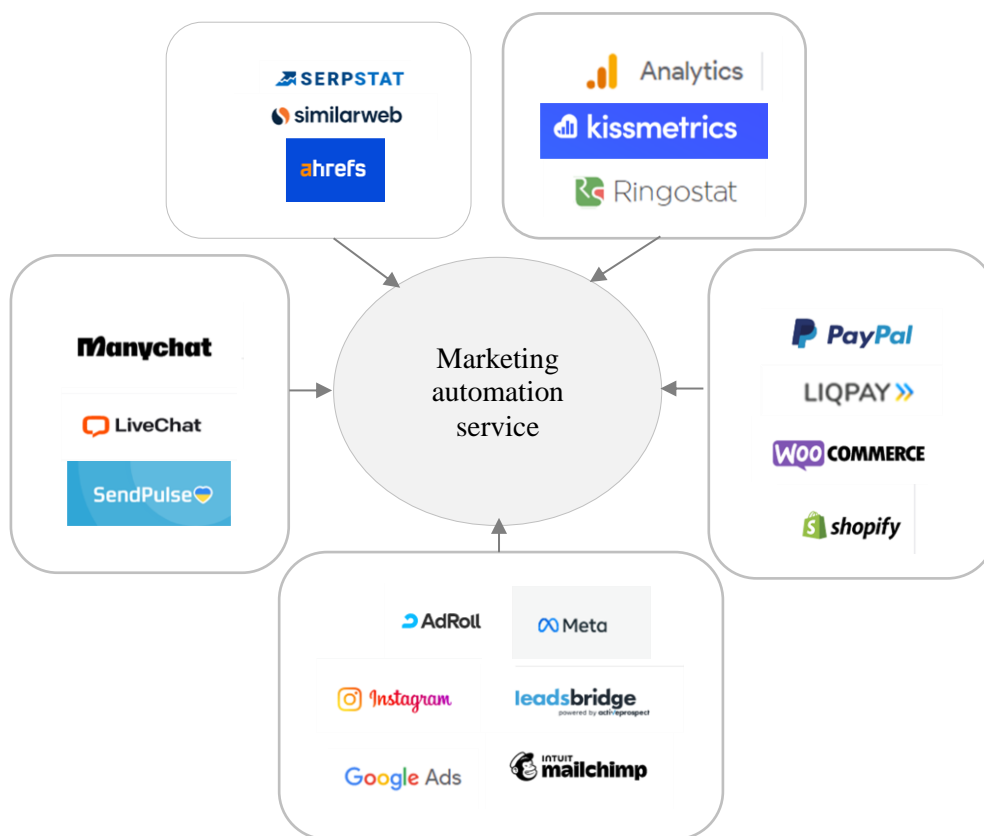


Figure 2. An example of an e-commerce enterprise/brand marketing automation ecosystem

Source: generated by the author.

There is no single software, single CRM system, single mailing service that will solve all business and marketing problems. It is important for an enterprise to understand its business processes, find a technical solution for each of them, and then connect software solutions into a single digital environment (digital ecosystem). Marketing automation is, in fact, an ecosystem that has a common connection through an API (an application programming interface through which different computer programs interact with each other).

From an implementation perspective, marketing automation and creating a single user profile is a challenging task. This is influenced by various factors: the cost of automation systems and the need to configure them; technical incompatibility with existing programs used by the company; establishing own rules, training people and continuous improvement. Therefore, the process from the start of work on the implementation of the automation system at the initial cost to obtaining a satisfactory result can last 1.5 years or more (Rawles, 2020, p. 190). But these difficulties, if the implementation process is properly organized, are temporary. Gathering information about the company’s customers and their journey at all points of interaction in one place thanks to the integration of the used services into a single user profile contributes to more effective decisions in marketing and

business. Thus, personalization and two-way dialogue with customers allows you to improve brand reputation, form and expand a loyal audience, which ensures the improvement of financial results and the development of the company/brand in the digital environment in the long term.

Conclusions

DM automation is driven by great competition in the uncertain market environment and ensures, thanks to the collection, processing and analysis of a huge amount of objective customer data, the adoption of management decisions aimed at improving the customer experience, reducing time and resources, which directly affects the improvement of the efficiency of digital marketing and business in general.

One of the most popular DM automation tools, which provides a high level of profitability of marketing investments, remains e-mail. The most common e-mail providers in Ukraine are Gmail, Outlook, UKR.NET, Yahoo! Mail. To build long-term partnerships with customers, companies use three types of emails: promotional emails, relationship-building emails, and transactional emails. Each of them is used to realize the image and conversion goals of digital marketing. Depending on the degree of involvement of the email provider, emails are divided into two types such as bulk and automated. Five types of digital marketing email campaigns are used to carefully advance the consumer through the sales funnel: educational, engaging, uplifting, segmentation, and re-engagement. The effectiveness of email marketing is measured using the following indicators: the number of subscriptions, the indicators of the delivery of letters and open letters, subscriptions and complaints, indicators of clickability and conversion, a comprehensive indicator of reputation. These indicators are calculated by email distribution services (ESP) and presented in the corresponding reports.

Marketing automation in the company begins with the implementation of the CRM system, the main purpose of which is to build a strategy of interaction with customers based on consolidated information about them and their preferences. The integration of ESP and the CRM system provides an opportunity to eliminate the shortcomings of the latter thanks to the ESP functionality, which improves interaction with consumers using e-mail: filtering spam, returning consumer reactions to letters, no duplication of data, the possibility of more accurate targeting of the target audience by identified segments, conducting surveys using questionnaires, creating dynamic e-mails and sending them according to established rules, etc.

DM automation ensures the unification of all points of interaction of the client with the company/brand into a single integrated and personalized process with the help of specialized computer programs and technical solutions. It is allowed to analyze customer actions and develop personalized offers based on the obtained objective data. To make effective and informed marketing and business decisions, it is important to collect all information about a specific consumer in a single user profile. Marketing automation is a complex task that includes various technologies and processes that are solved

by various programs and then collected in business intelligence services. The main ones include: CRM, ESP, Google Ads, Google Analytics 4, Call tracking, SMS, push, chat bots, Social media, and Payment systems. It is important for the company to understand its business processes, find a technical solution for each of them and connect software solutions into a single digital ecosystem. This will make it possible to simplify and speed up communication with consumers, which will improve their customer experience. In addition, it will save time and resources for the company due to the automation of routine processes and taking into account the improved customer experience and, accordingly, the increase in the loyalty of the target audience and the effectiveness of digital marketing and business.

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INFLUENCE MARKETING IN SOCIAL MEDIA

This article aims to comprehensively explore the evolving landscape of influence marketing, specifically focusing on its impact on brand perception and consumer engagement. Delving into influencer characteristics, the evolution of marketing strategies, and successful campaigns, the study seeks to illuminate the multifaceted dynamics that contribute to the effectiveness of influence marketing in the digital era. The analysis reveals that influence marketing serves as a cornerstone for building authentic connections in an era marked by digital saturation. Insights into emerging trends, such as the rise of nano-influencers and purpose-driven collaborations, underscore the pivotal role influencers play in shaping brand narratives. Innovations like virtual reality integration further highlight the dynamic nature of influence marketing. The emphasis on long-form storytelling, sustainability, and genuine engagement reinforces the enduring importance of influencers as cultural mediators and trusted conduits between brands and consumers. The scientific novelty lies in a nuanced exploration of influence marketing, transcending traditional promotional strategies. The study delves into the psychological impact of influencer endorsements, the effectiveness of specific content formats, and ethical considerations surrounding virtual influencers. By addressing these dimensions, the research contributes to a deeper understanding of influence marketing dynamics, providing valuable insights for researchers and industry professionals alike. The practical value of this research is two-fold. Firstly, it offers marketers actionable insights into navigating challenges, adapting to emerging trends, and refining influencer strategies. Secondly, the exploration of ethical considerations and the

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ІНФЛЮЕНС-МАРКЕТИНГ У СОЦІАЛЬНИХ МЕРЕЖАХ

Головною метою цього дослідження є встановлення перспектив розвитку інфлюенс-маркетингу з акцентом на його вплив на сприйняття бренду та залучення споживачів. Аналізуючи характеристики інфлюенсерів, розвиток маркетингових стратегій та успішні рекламні кампанії, розглянуто динаміку становлення ефективності інфлюенс-маркетингу в цифрову епоху. Інфлюенс-маркетинг є базовою маркетинговою стратегією для побудови повноцінних зв'язків в епоху, що характеризується цифровою насиченістю. Розуміння нових тенденцій – збільшення кількості нано-інфлюенсерів та зростання кількості колаборацій підкреслює ключову роль, яку відіграють інфлюенсери у формуванні знання та сприйняття бренду. Такі інновації, як інтеграція віртуальної реальності, ще більше підкреслюють динамічний характер інфлюенс-маркетингу. Наголос на довготривалому сторітелінгу, сталому розвитку та щирому залученні посилює значущість інфлюенсерів як культурних посередників та надійних провідників між брендами та споживачами. Детально розглянуто розвиток інфлюенс-маркетингу, що виходить за рамки традиційних стратегій просування, зауважено на психологічному сприйнятті інфлюенсерів, ефективності окремих форматів контенту та етичних міркуваннях, пов'язаних з віртуальними інфлюенсерами. Вивчення цих аспектів сприяє глибокому розумінню динаміки розвитку інфлюенс-маркетингу, надаючи цінну інформацію для дослідників та професіоналів галузі. Практична цінність цього дослідження має два напрями: по-перше, пропонує маркетологам змістовну інформацію про те, як орієнтуватися в проблемах, адаптуватися до нових тенденцій та вдосконалювати стратегії впливу на споживача; по-друге, вивчення етичних міркувань та впливу технологій на інфлюенс-маркетинг надає



impact of technologies in influence marketing equips industry professionals with the knowledge needed to make informed decisions, fostering responsible and effective influencer campaigns. This article encourages continuous inquiry, ensuring that influence marketing remains not only a dynamic force in the digital landscape but also an ethically grounded and impactful strategy for building brand connections.

Keywords: influence marketing, brand perception, consumer engagement, nano-influencers, virtual reality integration, ethical considerations, emerging trends.

знання, необхідні для прийняття обґрунтованих рішень, що сприяє зростанню кількості відповідальних та ефективних інфлюенс-маркетингових кампаній. Ця праця заохочує до постійних досліджень, гарантуючи, що інфлюенс-маркетинг залишається не лише динамічною силою в цифровому ландшафті, але й є етично обґрунтованою та ефективною стратегією побудови зв'язків з брендом.

Ключові слова: інфлюенс-маркетинг, сприйняття бренду, залучення споживачів, нано-інфлюенсери, інтеграція віртуальної реальності, етичні міркування, нові тренди.

JEL Classification: M 31.

Introduction

In the rapidly evolving landscape of digital communication, the ascension of social media influencers stands as a defining phenomenon, reshaping the dynamics of contemporary marketing. Influencers, once regarded as mere content creators, have metamorphosed into influential figures with the ability to sway and captivate diverse audiences across an array of online platforms (Haenlein et al., 2020).

This transformative surge is emblematic of a paradigm shift, where traditional marketing strategies are eclipsed by the authentic and relatable content disseminated by influencers. As we navigate the intricacies of this digital era, social media influencers have emerged as cultural architects, shaping trends, opinions, and consumer behaviors. Their rise is not merely a consequence of technological advancements but a reflection of a societal shift towards seeking genuine connections and relatable voices in an increasingly virtual world.

In the dynamic expanse of today's digital landscape, social media influencers wield a transformative influence that extends beyond traditional marketing boundaries (Oduro et al., 2021). Their significance lies in their capacity to redefine how brands establish connections with their target demographics, navigating the intricate terrain of consumer engagement with finesse. These influencers have evolved into cultural curators, offering a genuine and compelling bridge between brands and their audience. The omnipresence of social media platforms has facilitated an unprecedented reach for influencers, enabling them to cultivate expansive and dedicated followings across diverse demographics. What sets influence marketing apart is its departure from conventional advertising approaches. Influencers don't merely endorse products; they share authentic stories, personal experiences,

and expert insights, fostering a profound sense of trust and authenticity within their audience.

This trust becomes a potent force, a linchpin for molding brand perceptions (Dennis et al., 2001). Unlike traditional advertising, where the message is often viewed with skepticism, consumers are more inclined to trust recommendations from influencers they perceive as authentic and relatable. The power dynamic has shifted, and consumers now seek genuine connections in their online interactions. Social media influencers, through their authenticity and accessibility, have become instrumental in fulfilling this demand. Their role extends beyond being mere conduits for promotional content; they are influential tastemakers who shape trends and have a palpable impact on consumer behavior and purchasing decisions.

In the era where digital engagement is not just a trend but a way of life, the relationship between brands and social media influencers is symbiotic. It goes beyond transactions, embodying a deeper connection that resonates with the values and aspirations of the target audience (Shen et al., 2022). Social media influencers are not just conduits for brand messages; they are architects of digital narratives, weaving stories that captivate, inspire, and drive meaningful engagement. Their pivotal role in contemporary marketing strategies underscores the evolving landscape where authenticity, relatability, and genuine connection reign supreme (AlFarraj et al., 2021). As brands navigate this landscape, understanding and harnessing the influence of social media influencers stand as imperative components in shaping a compelling and resonant brand narrative.

This article embarks on a comprehensive exploration, aiming to illuminate the transformative influence wielded by social media influencers on the intricate facets of brand perception and consumer engagement. Our central thesis posits that these influencers, with their ability to craft authentic narratives, establish relatable connections, and command expansive audiences, hold a pivotal role in shaping the nuanced perceptions audiences harbor towards brands. Going beyond conventional advertising, we contend that social media influencers act as cultural architects, shaping the narrative landscape of the digital space and fundamentally influencing the way consumers interact with brands.

Our analysis endeavors to uncover the layers of complexity inherent in this symbiotic relationship. We assert that the influence of social media influencers is not confined to surface-level endorsements but permeates the core of consumer engagement strategies. By examining influencers as more than conduits for promotional content, we aim to unravel their roles as trendsetters, opinion leaders, and authentic storytellers. Through this lens, our exploration seeks to decipher the strategies, mechanisms, and dynamics that underscore the successful integration of influencers into contemporary marketing methodologies.

Furthermore, we posit that the impact of social media influencers is deeply entwined with the evolving expectations of today's consumers. The thesis contends that these influencers, with their authenticity and relatability, navigate the digital landscape to fulfill the consumer demand for genuine connections. As we unravel the layers of this complex relationship, our analysis strives to uncover not only how influencers shape brand narratives but also how they serve as conduits for meaningful interactions, driving consumer engagement beyond transactional relationships.

Our research is aimed to provide a profound understanding of the multifaceted role of social media influencers in shaping brand narratives and driving consumer engagement strategies. Through a deep and nuanced analysis, we aspire to contribute valuable insights that empower brands to navigate the evolving digital landscape strategically, fostering authentic connections that resonate with the contemporary consumer.

The surge in social media platforms has revolutionized marketing strategies, placing influencers at the forefront of brand promotion and consumer engagement. This literature review delves into the multifaceted impact of social media influencers, drawing insights from various studies that explore influence marketing strategies, ethical considerations, effects on SMEs, and the dynamics of influencer-consumer relationships across different demographics.

Kim and Kim (2021) present a nuanced view of influence marketing, underscoring the intricacies in establishing trust between influencers and their audience. This trust forms the foundation for influencers to impact brand perception and consumer engagement. Vrontis et al. (2021) provide a comprehensive framework through a systematic review, shedding light on the diverse strategies employed in influence marketing campaigns, offering valuable insights into the dynamics influencing brand perception.

Borchers and Enke (2022) contribute to the review by examining the ethical considerations within the influencer industry. Transparency and authenticity in influencer-brand collaborations are crucial factors that influence brand perception and long-term consumer engagement. Establishing ethical practices is pivotal for maintaining positive brand associations. Fang et al. (2022) explore the effects of entrepreneurial orientation, social media, and innovation capabilities on SME performance. This research suggests that influence marketing can be a strategic tool for SMEs, contributing to improved brand perception and increased consumer engagement, particularly in emerging markets.

Reinikainen et al. (2020) contribute valuable insights into parasocial relationships, emphasizing the role of credibility in influencer-consumer connections. Credibility directly influences brand perception and engagement, highlighting the importance of the relational aspect in the influence marketing landscape. Pinto and Paramita (2021) focus on Generation Z, uncovering the influential role of social media influencers in shaping brand

loyalty. The mediating effect of purchase intention among this demographic showcases the pathway through which influencers impact consumer engagement and brand perception.

Gautam and Jaitly (2021) investigate the influence of social media influencers on customer engagement and brand perception. The content and engagement strategies employed by influencers directly contribute to shaping how consumers perceive and engage with brands. Duh and Thabethe (2021) explore Instagram influencers, providing platform-specific insights into the attributes impacting consumer brand engagement. Understanding engagement nuances on Instagram is critical for brands seeking to enhance both brand perception and consumer engagement.

AlFarraj et al. (2021) extend our understanding by examining influencers' credibility dimensions in the aesthetic dermatology industry. The attractiveness, trustworthiness, and expertise of influencers directly influence purchase intentions, illustrating the specific impact on brand perception in a distinct industry. Shan et al. (2020) investigate the effects of self-influencer congruence, parasocial identification, and perceived endorser motive when influencers endorse brands. This research contributes to understanding the psychological mechanisms underlying influence marketing effectiveness and its impact on brand perception.

Shen et al. (2022) delve into the contractual aspects of influence marketing, comparing participation-based contracts with sales-based contracts. This research provides insights into the various models employed by brands when collaborating with influencers, influencing both brand perception and consumer engagement. Dennis et al. (2001) provide a historical perspective by exploring the fit and appropriation effects in group support systems. Although not directly related to influence marketing, this meta-analysis highlights the importance of fit in collaborative systems, offering a broader context for understanding the dynamics of influencer-brand collaborations.

Oduro et al. (2021) examine the relationship between corporate social responsibility (CSR) and SME performance. This meta-analysis offers insights into the broader context of corporate practices that may influence brand perceptions, indirectly affecting consumer engagement. Haenlein et al. (2020) provide practical guidance on navigating the new era of influence marketing, focusing on success strategies across platforms like Instagram, TikTok, and others. This review enhances our understanding of the evolving nature of influence marketing and its impact on brand perception and consumer engagement. Medvedieva (2023) in her work graphically depicted the process of influence media planning, which includes 6 stages.

Cheung et al. (2022) investigate the role of social media influencers' content characteristics in shaping consumers' online brand-related activities. This research provides insights into the types of content that drive consumer engagement with brands online, contributing to our understanding of consumer interactions facilitated by influencers.

This comprehensive literature review is synthesized the key findings from diverse studies, providing a holistic understanding of the impact of social media influencers on brand perception and consumer engagement. As businesses continue to leverage influencers for marketing purposes, a nuanced comprehension of strategies, ethical considerations, and audience dynamics becomes imperative for crafting effective campaigns that positively influence brand perception and foster meaningful consumer engagement. Further research may explore emerging trends and consider the evolving nature of social media platforms to refine our understanding of the impact of influencers on brand-consumer relationships in the contemporary digital landscape.

A qualitative research approach was employed to delve into the impact of social media influencers on brand perception and consumer engagement. A diverse set of influencers was systematically selected, considering variables such as follower count, niche expertise, and platform preferences. This deliberate curation ensured a comprehensive exploration of the influencer landscape, capturing varied perspectives within the digital realm.

Content analysis was utilized as a qualitative research method to scrutinize the digital content produced by the selected influencers. This involved a systematic review of influencers' posts, captions, and interactions with their audience. Through this process, recurring themes, patterns, and sentiments were identified, offering insights into the influencers' role in shaping brand narratives and fostering consumer engagement.

Thematic analysis was applied to the qualitative data derived from the content analysis. This method allowed for the identification and exploration of recurring themes within the influencers' content, providing a nuanced understanding of their impact on brand perception and consumer engagement. By distilling patterns from the data, this approach contributed depth to the qualitative insights garnered from the influencers' digital presence.

A thorough review of secondary literature was conducted to contextualize our qualitative findings within the broader academic and industry discourse. The literature review encompassed studies, articles, and reports related to influence marketing, brand perception, and consumer engagement. This process not only informed our research design but also helped establish a theoretical framework for interpreting the qualitative data.

The qualitative data obtained from content and thematic analysis were systematically compared and contrasted with insights derived from the secondary literature. This comparative analysis aimed to validate and enrich our findings, ensuring that the qualitative exploration of social media influencers aligned with existing knowledge and contributed novel perspectives.

Ethical considerations were rigorously observed throughout the research process. The study adhered to ethical guidelines, respecting the privacy and rights of both influencers and their audience. No personal information was disclosed, and the analysis focused solely on publicly available digital content.

In the dynamic realm of digital marketing, this article undertakes a comprehensive exploration of the profound impact social media influencers exert on brand perception and consumer engagement. The overarching motivation is to dissect the intricate dynamics governing influence marketing, providing valuable insights for marketers, researchers, and industry professionals alike. The primary objective of this research is to unveil the multifaceted influence of social media influencers, transcending conventional marketing strategies. By delving into influencer characteristics, the evolution of marketing strategies, and the anatomy of successful campaigns, we aim to contribute to a nuanced understanding of the mechanisms that drive effective influence marketing in the contemporary digital era.

At the core of this research, the hypothesis that influencers play a pivotal role in shaping brand perception and driving consumer engagement is estimated. We posit that their authenticity, storytelling prowess, and strategic collaborations significantly impact how audiences perceive brands, fostering a sense of relatability and trust. The main body of the article is meticulously structured into several sections, each addressing key aspects of influence marketing and its impact on brand perception and consumer engagement.

The first section conducts an in-depth analysis of influencer characteristics, focusing on traits such as authenticity and relatability to understand their role in shaping brand image. Following this, the exploration of the evolution of influencer types aims to unravel the shift from traditional advertising to more nuanced storytelling and community building. The subsequent section, centered around successful campaign case studies, illustrates tangible impacts and provides insights into strategic collaborations that transcend industries. Moving forward, the examination of the interplay between influencers and brand perception reveals how influencers contribute to the establishment of a relatable brand image.

Continuing the exploration, the article delves into the pivotal role of influencers in driving consumer engagement. This section not only presents strategies for collaboration but also introduces metrics for measurement, offering a comprehensive view of consumer engagement dynamics. Addressing potential challenges, transparency issues, and the impact of controversies, the subsequent section provides a detailed analysis of the ethical landscape within influence marketing. Finally, the article unveils emerging trends and innovations, forecasting the future landscape and providing insights into the evolving dynamics of this influential marketing strategy.

Summarizing key findings, the conclusion emphasizes the multifaceted influence of social media influencers. The analysis of characteristics, evolution, successful campaigns, challenges, and future trends culminates in a call for ongoing exploration and innovation in influence marketing. This structurally coherent framework ensures a clear, concise, and logically sequenced presentation of the research findings, offering readers a comprehensive understanding of the multifaceted world of influence marketing.

1. Statistics on the growth of influence marketing

In recent years, influence marketing has experienced exponential growth, becoming a cornerstone of digital advertising strategies. The following statistics underscore the substantial rise and impact of influence marketing across various industries and platforms (*Table 1*).

Table 1

Global influence marketing growth (2018–2023)

Year	Influence marketing spending (USD billion)	Growth rate, %
2018	6.5	–
2019	8.0	23.1
2020	9.7	21.3
2021	13.8	42.3
2022	17.2	24.6
2023 (Projected)	21.9	27.3

Source: Statista (2023).

The data depicted in *Table 1* not only showcases the substantial growth of influence marketing spending globally but also provides insight into the industry’s trajectory, emphasizing its escalating significance within digital advertising budgets. The progression from 2018 to the projected figures for 2023 reveals a remarkable upward trend, where the influence marketing sector is anticipated to nearly quadruple in size.

This surge can be attributed to several factors contributing to the growing prominence of influence marketing. Firstly, as consumers increasingly gravitate towards digital platforms for information and entertainment, brands are strategically allocating more resources to influencer collaborations to tap into the vast and engaged audiences these influencers command. The organic and authentic nature of influencer content resonates with audiences, offering a compelling alternative to traditional advertising methods.

Furthermore, the projected growth underscores the evolving role of influencers as pivotal partners in brand promotion and consumer engagement. Brands are recognizing the unique ability of influencers to establish genuine connections with their followers, fostering trust and credibility that is often challenging to achieve through traditional advertising channels. As a result, influence marketing has become an integral component of digital advertising strategies, reflecting a strategic shift in resource allocation to leverage the persuasive power of influencer endorsements.

The anticipated quadrupling of influence marketing spending signifies a maturation of the industry, where brands are not only acknowledging its potential but are increasingly relying on it as a primary driver of their marketing initiatives (Gautam & Jaitly, 2021). As consumer behavior evolves, influenced by social media and digital content consumption, the industry's growth trajectory aligns with the shifting landscape of advertising, where personalized and authentic interactions take precedence.

The data in *Table 1* encapsulates more than just numerical growth; it encapsulates a paradigm shift in how brands engage with their audience. The fourfold increase in spending signifies a strategic recognition of the profound impact influencers wield in shaping brand narratives and fostering consumer trust.

Table 2 provides a nuanced glimpse into the landscape of influence marketing strategies, illuminating the dominance of certain social media platforms and the strategic choices made by marketers.

Table 2

Social media platforms dominating influence marketing, %

Platform	Percentage of marketers leveraging influencers
Instagram	93
YouTube	78
TikTok	63
Facebook	31
Twitter	24

Source: Influence marketing hub (2023).

As we can see from the *Table 2*, leading the way is Instagram, emerging as the preferred choice for a staggering 93% of marketers who leverage influencers on the platform. This preference can be attributed to Instagram's visually-driven nature, interactive features, and diverse user demographics, making it an ideal canvas for influencers to connect authentically with their audiences.

The high percentage of marketers utilizing influencers on Instagram underscores the platform's effectiveness in reaching and engaging target demographics (Pinto and Paramita, 2021). The visual-centric nature of Instagram allows for compelling storytelling and authentic content creation, providing a platform where influencers can seamlessly integrate brand messaging into their narratives. This trend also aligns with the platform's continuous innovation, introducing features like Stories, IGTV, and Reels, offering diverse formats for influencer collaborations.

Following closely behind are YouTube and TikTok, with 78% and 63% of marketers, respectively, leveraging influencers on these platforms. This dynamic highlights the diversification of influencer collaborations across various channels, reflecting the evolving preferences and behaviors of digital

audiences. YouTube, with its longer-form content, serves as a platform where influencers can delve deeper into topics and engage audiences through tutorials, reviews, and lifestyle content. TikTok, on the other hand, capitalizes on short-form, creative content, offering a vibrant space for influencers to capture the attention of a younger, highly-engaged audience.

This diversification indicates that marketers are strategically adapting their influence marketing strategies to align with the unique strengths and characteristics of each platform. It emphasizes the importance of considering the nature of the audience, content format, and engagement mechanisms when selecting platforms for influencer collaborations. The data suggests that successful influence marketing campaigns are those that recognize the distinctive features of each platform, tailoring content to suit the preferences and behaviors of the target audience.

Table 2 not only provides a snapshot of current trends but unveils a strategic landscape where marketers are navigating the dynamic interplay of platforms. The dominance of Instagram, coupled with the substantial presence on YouTube and TikTok, signifies a sophisticated approach to influence marketing, where versatility and platform-specific strategies are key components in achieving successful brand collaborations and fostering meaningful consumer engagement.

In the ever-evolving landscape of influence marketing, case studies serve as illuminating beacons, providing insights into the transformative power of strategic collaborations between brands and influencers. Here are two compelling case studies that vividly showcase the success of influencer campaigns in driving brand visibility, engagement, and business outcomes:

Nike's Collaboration with Cristiano Ronaldo (leveraging Ronaldo's immense global following, Nike's campaign reached over 200 million people, resulting in a significant boost in sales and brand engagement);

Fashion Nova on Instagram (with partnerships with various fashion influencers on Instagram, Fashion Nova experienced a rapid rise, becoming one of the most searched-for fashion brands on the platform) (Influence Marketing Hub, 2023).

The provided examples of successful influencer campaigns underscore the transformative impact that influence marketing can have on brand visibility, sales, and engagement. These cases go beyond mere endorsements, portraying the strategic brilliance of aligning with influencers who possess a powerful resonance with their audiences.

Nike's collaboration with Cristiano Ronaldo exemplifies the global reach and influence that a high-profile influencer can bring to a brand. Leveraging Ronaldo's immense popularity and massive global following, Nike's campaign managed to reach over 200 million people. This staggering outreach not only enhanced brand visibility but also translated into tangible results, with a significant boost in sales and heightened brand engagement. The success of this collaboration highlights the potential of influence

marketing to transcend geographical boundaries, effectively reaching and resonating with diverse audiences on a global scale.

Fashion Nova's ascent to becoming one of the most searched-for fashion brands on Instagram provides another compelling example of influence marketing's impact. Through strategic partnerships with various fashion influencers on the platform, Fashion Nova harnessed the visual and interactive nature of Instagram to rapidly ascend in the highly competitive fashion industry. The collaboration resulted in increased brand discovery, engagement, and a notable surge in online searches for the brand. This case exemplifies how influence marketing, when strategically aligned with the platform's strengths and the preferences of its user base, can propel a brand to the forefront of consumer consciousness.

These examples collectively highlight the tangible outcomes that strategic influencer collaborations can achieve, transcending industry boundaries. The success stories of Nike and Fashion Nova underscore the dynamic nature of influence marketing, where authentic partnerships with influencers who authentically resonate with their audiences can drive not only brand visibility but also lead to measurable business outcomes. In essence, these examples showcase the transformative power of influence marketing, emphasizing the strategic importance of aligning with influencers who seamlessly integrate with a brand's identity and effectively connect with their target demographic.

2. Exploration of the reach and impact of influencers on various platforms

The influence of social media influencers is not uniform across platforms; it's a dynamic landscape where the nature of content, audience demographics, and engagement mechanisms vary significantly (Pinto and Paramita, 2021).

Instagram stands as a powerhouse for influence marketing, offering a visually-driven environment that resonates with over a billion monthly active users. Influencers on Instagram leverage the platform's emphasis on aesthetics, storytelling, and engagement. The platform's Stories, IGTV, and Reels features provide influencers with diverse formats to connect with their audience authentically. The highly interactive nature of Instagram fosters direct engagement, and the platform's Explore page serves as a discoverability hub, expanding an influencer's reach beyond their immediate followers.

YouTube, known for its longer-form content, creates an environment where influencers can delve into detailed narratives, tutorials, reviews, and lifestyle content. The platform's vast user base and search-friendly nature make it conducive for influencers to build niche communities around specific topics. Influencers on YouTube often establish deeper connections with their audience through in-depth content, leading to higher levels of trust and

engagement. The platform's algorithm encourages content discoverability, contributing to sustained visibility and influence.

TikTok has emerged as a frontrunner in short-form, creative content, captivating the attention of a predominantly younger audience. Influencers on TikTok thrive on the platform's algorithm-driven exposure, with the potential for videos to go viral and reach millions swiftly. The platform's unique duet and collaboration features enhance the interconnectedness of influencers, fostering trends and challenges that quickly permeate the community. TikTok's emphasis on authenticity and entertainment creates an environment where influencers can rapidly amass substantial followings.

Twitter, with its real-time nature, provides a space where influencers can engage in immediate and dynamic conversations. Influencers on Twitter often establish themselves as thought leaders, sharing opinions, insights, and participating in trending discussions. The platform's retweet and like functionalities contribute to content amplification, allowing influencers to extend their reach beyond their follower count. Twitter's role in breaking news and fostering discourse makes it a unique space for influencers to shape conversations and influence public opinion.

While often overshadowed by other platforms, *Facebook* remains a significant space for influence marketing. With a diverse user base, influencers on Facebook focus on community building and leveraging various content formats, including text, images, and videos. Facebook Groups serve as hubs for niche communities, and live video features enhance real-time interaction. Influencers on Facebook often adopt a multi-format approach, tailoring content to suit the preferences of their audience within the platform's expansive ecosystem.

The exploration of influencers across various platforms reveals a dynamic landscape where content, engagement mechanisms, and audience dynamics play pivotal roles. Successful influencer strategies hinge on understanding the unique attributes of each platform and tailoring content to resonate authentically with the audience's expectations. As we navigate this diverse influencer landscape, it becomes evident that the most impactful campaigns are those that leverage the inherent strengths of each platform, creating a harmonious interplay between content, influencer authenticity, and audience engagement.

3. Peculiarities of interaction between influencers, brands and consumers

3.1. Influence formation of an influential person on brand perception

Social media influencers are individuals who have established credibility and a large following on various social media platforms (Cheung et al., 2022). They leverage their expertise, authenticity, and engaging content to influence their audience's opinions, behaviors, and purchasing decisions.

Table 3 outlining the characteristics of social media influencers provides valuable insights into the dynamic landscape of influence marketing.

Table 3

Characteristics of social media influencers

Characteristics	Description
Reach and audience	Influencers typically have a substantial following on platforms like Instagram, YouTube, TikTok, or Twitter. Their audience can range from niche to broad demographics
Content authenticity	Influencers create authentic and relatable content, often sharing personal experiences, opinions, or expertise. Authenticity is a key factor in building trust with their audience
Engagement levels	High engagement rates, including likes, comments, and shares, demonstrate the influencer's ability to connect with and captivate their audience
Niche expertise	Many influencers specialize in specific niches such as fashion, beauty, fitness, travel, or technology. Their expertise enhances their credibility within their chosen domain.
Platform diversity	Influencers may be active on multiple platforms, adapting their content to suit each one, showcasing versatility and adaptability
Collaborations	Partnerships with brands and other influencers showcase their influence and contribute to their overall brand image

Source: own development.

The exploration of the characteristics of social media influencers unveils nuanced facets crucial for understanding their impact on brand perception and consumer engagement. The magnitude of an influencer's following across platforms is more than just a metric; it's a gateway to potential consumer reach. Beyond numerical metrics, the diversity of an influencer's audience, spanning from niche communities to broad demographics, allows brands to tailor their messaging for optimal resonance. Authenticity emerges as the linchpin of influence marketing success. Influencers craft content that is not merely promotional but authentic, weaving in personal experiences, opinions, or domain expertise. This authenticity fosters a genuine connection with their audience, becoming a powerful conduit for positively shaping brand perception.

Beyond mere follower counts, high engagement metrics signify an influencer's ability to cultivate a community that actively participates in discussions. Elevated likes, comments, and shares indicate a deeper connection, providing brands with a valuable channel for heightened consumer engagement and interaction. Niche expertise elevates an influencer's credibility within specific domains. Whether it's fashion, beauty, fitness, or technology, influencers with focused expertise become conduits for brands seeking authentic collaborations. This expertise ensures that the influencer's endorsement aligns seamlessly with the brand, enhancing the impact on the target audience.

Influencers’ adeptness at navigating multiple platforms is a testament to their versatility. Adapting content to suit the unique dynamics of each platform showcases a deep understanding of their audience. Brands, leveraging this diversity, gain access to a multifaceted approach for reaching a broader audience and staying attuned to evolving social media trends. Collaborations, both with brands and fellow influencers, serve as powerful endorsements. Beyond being promotional, successful collaborations enhance an influencer’s credibility and influence. Brands benefit by aligning with influencers who have a history of authentic partnerships, amplifying the positive impact on brand perception.

The interconnected nature of these characteristics paints a holistic picture of social media influencers as pivotal conduits for brand messaging (Shan et al., 2020). The interplay of reach, authenticity, engagement, expertise, platform adaptability, and collaborations collectively shapes the influencer’s impact on brand perception, establishing a framework for fostering meaningful and sustained consumer engagement.

As influence marketing has evolved, various categories of influencers have emerged (*Table 4*).

Table 4

Evolution of influencer types

Influencer Types	Description
Macro-Influencers	Have a large following, often in the millions. They are recognizable figures and may collaborate with major brands
Micro-Influencers	Have a smaller, more niche audience but often boast higher engagement rates. Ideal for targeted marketing efforts
Nano-Influencers	Typically have a smaller following but highly engaged. They often focus on specific local or niche communities

Source: own development.

Table 4 delving into the evolution of influencer types presents a rich tapestry of the ever-evolving landscape of influence marketing, showcasing the distinct characteristics and significance of each category.

Macro-influencers boast a massive following, often reaching into the millions. They are recognizable figures, frequently collaborating with major brands. The prominence of macro-influencers lies in their widespread reach, allowing brands to tap into expansive audiences. Recognizable figures lend credibility and familiarity, creating a potential gateway for brands to access diverse markets.

Micro-influencers have a smaller, more niche audience but tend to exhibit higher engagement rates. They are ideal for targeted marketing efforts. Micro-influencers, despite their smaller reach, offer unique advantages. Their niche audience is often more engaged and trusts their opinions, making them powerful advocates for targeted brand messaging. The authenticity associated with micro-influencers is a key asset for brands seeking genuine connections.

Nano-influencers typically have a smaller following but highly engaged. They often focus on specific local or niche communities. The rise of nano-influencers signifies a shift towards hyper-local and hyper-engaged communities. While their reach may be limited, the depth of engagement and influence within specific niches can lead to highly impactful marketing campaigns, particularly for brands targeting localized markets.

The progression from macro to micro to nano influencers reflects a strategic diversification in influence marketing approaches. Brands are increasingly recognizing the value of targeted, authentic connections over sheer follower numbers. Collaborations with macro-influencers are akin to mainstream advertising, whereas micro and nano influencers bring a more grassroots, community-driven approach. This evolution aligns with a broader societal shift towards valuing authenticity and individualized connections in the digital landscape.

Brands need to align their influencer strategy with their specific goals (Duh and Thabethe, 2021). Macro-influencers offer broad visibility, micro-influencers offer engagement, and nano-influencers offer localized authenticity. Combining influencer types in a holistic strategy allows brands to leverage the strengths of each category, creating a comprehensive approach that resonates with diverse audience segments.

Regardless of the influencer category, the human element remains pivotal. Audiences crave authenticity, relatability, and genuine connections. Successful influence marketing recognizes and integrates these human-centric elements, irrespective of follower counts.

The evolution of influencer types signifies a nuanced shift towards authenticity, targeted engagement, and community-driven connections. Understanding the strengths and strategic implications of each category empowers brands to navigate the influence marketing landscape with precision and relevance.

3.2. Brand perception and social media influencers

In the contemporary landscape of digital marketing, the symbiotic relationship between brands and social media influencers plays a pivotal role in shaping brand perception.

Social media influencers emerge as transformative architects of brand perception, orchestrating a profound influence that transcends traditional marketing boundaries. Their impact extends beyond promotional content, delving into the realms of storytelling, authenticity, and relatability, sculpting a narrative that resonates intimately with their audience. Through strategic collaborations, authentic storytelling, and a curated visual language, influencers possess the unique ability to shape and mold the narrative surrounding a brand.

Influencers navigate the digital landscape with a strategic finesse that transforms brand engagement into an immersive experience. By strategically

collaborating with influencers whose values align with the brand's ethos, companies can tap into a curated narrative that seamlessly integrates with the influencer's personal brand. These collaborations extend beyond mere endorsements, becoming a harmonious symphony where the influencer acts as a cultural mediator, translating brand messages into a language that resonates authentically with their audience.

The power of influencers lies in their ability to craft narratives that transcend the traditional boundaries of advertising. Authentic storytelling becomes a catalyst for building emotional connections. Whether through captivating lifestyle shots, genuine product reviews, or behind-the-scenes glimpses, influencers weave a narrative that extends beyond product features, emphasizing the experience and value a brand brings to their lives. This authentic storytelling creates an emotional resonance, fostering a sense of intimacy that traditional advertising struggles to replicate.

Influencers curate content that serves as cultural currency within their dedicated communities. This curated content is more than a visual spectacle; it becomes a means of cultural expression that mirrors the influencer's lifestyle, values, and aspirations. Each post, video, or story contributes to the establishment of a visual identity that defines not only the influencer but also the brands they choose to associate with. In this symbiotic relationship, brands become woven into the fabric of cultural conversations, leveraging influencers as conduits for cultural relevance.

Endorsements by influencers are not just transactional; they become authentic touchpoints that resonate with the genuine experiences of the influencer. When an influencer authentically connects with a brand, their endorsement becomes a testament to the brand's credibility. Personal experiences shared by influencers humanize the brand, offering a transparent view into the influencer's relationship with the products or services. This transparency builds trust, fostering positive perceptions that extend beyond marketing messages into the realm of genuine connection.

Social media influencers are narrative sculptors, infusing brands with a cultural richness that transcends the transactional nature of traditional advertising. Through strategic collaborations, authentic storytelling, and a curated visual language, influencers create a narrative tapestry that resonates deeply with their audience, transforming brand perception into a dynamic and authentic experience within dedicated communities. In this interconnected digital era, influencers emerge as cultural conduits, shaping not only what we buy but how we perceive and engage with the brands that become woven into the fabric of our daily lives.

The linchpin of successful influence marketing reveals itself as the bedrock of trust and authenticity. Within an era marked by discerning audiences and an ever-expanding digital realm, the pursuit of genuine connections is paramount. Influencers, with their authentic narratives and relatable personas, emerge as the architects of this trust, bridging the perceptual gap

between brands and consumers. Their ability to cultivate an authentic voice, coupled with a genuine connection with their audience, establishes a precious currency in the digital age-*trust*.

At the heart of influence marketing's success lies the authenticity embedded in the narratives crafted by influencers. In a world inundated with polished advertising messages, audiences crave realness and relatability. Influencers, by sharing authentic stories from their lives, experiences, and values, build a bridge of trust with their followers. The authenticity of their content resonates with audiences seeking more than just promotional material; it becomes a source of genuine connection and shared experiences.

Influencers, often celebrated for their relatable personas, stand as living testimonials to the brands they endorse. Their lifestyles, preferences, and candid moments create a sense of familiarity, transforming the influencer from a distant figure to a trusted friend. This relatability is a catalyst for trust, as audiences feel a genuine connection with influencers who mirror their aspirations, challenges, and daily lives. In this context, influence marketing becomes a powerful tool for brands to position themselves as approachable and relatable entities in the eyes of their target audience.

In the era of skepticism, where consumers approach marketing messages with a discerning eye, the trust established by influencers acts as a formidable bridge. Skeptical consumers, inundated with traditional advertising tactics, place immense value on recommendations from individuals they perceive as authentic. Influencers, as trusted voices within their niche communities, act as intermediaries, transforming skepticism into belief. Their endorsement becomes a form of social proof, assuring audiences that the brand is not just a product but an authentic choice backed by someone they trust.

In this nuanced context, influencer partnerships evolve beyond mere promotional endeavors; they become strategic avenues for brands to cultivate trust and build authentic relationships. Through influencer collaborations, brands gain access to the trust reservoir established by influencers, allowing them to tap into a dedicated audience base. The ongoing relationship between influencers and their followers provides a fertile ground for brands to sow the seeds of trust, cultivating enduring connections that extend beyond individual campaigns.

At the core of influence marketing's success is the recognition that trust and authenticity are not just buzzwords but essential elements that forge meaningful connections. Influencers, with their authentic narratives and relatable personas, become conduits for brands to traverse the terrain of skepticism and build enduring relationships with their target audience. In this symbiotic dance, influence marketing emerges as more than a transaction; it becomes a journey towards fostering positive brand perceptions rooted in trust and authenticity.

Influencers transcend their traditional role as mere conduits for promotional content; they emerge as instrumental architects shaping and

reinforcing a brand's identity and values. The essence of this transformative role lies in the strategic alignment between influencers and brands, forging a partnership that extends beyond transactional promotion to the creation of a cohesive brand narrative rooted in shared ethos.

Influencers, chosen with precision, act as strategic partners in the communication of a consistent and coherent brand message. Companies strategically align with influencers whose personal brand ethos harmonizes with the values and mission of the brand. This alignment ensures that the influencer seamlessly integrates the brand into their content, creating a narrative that not only endorses the product but embodies the overarching values of the brand. The result is a unified and cohesive messaging strategy that resonates authentically with the audience.

Far beyond being mere endorsers, influencers evolve into brand ambassadors who personify and amplify the values, mission, and personality of the brand. Their role extends beyond the promotion of products; they become living embodiments of the brand identity. Through their daily lives, interactions, and content creation, influencers breathe life into the brand narrative, infusing it with a human touch that resonates with their audience. This personal connection builds a more profound and lasting impression, as the brand's story becomes intertwined with the influencer's own journey.

The alignment between influencers and brands contributes to the weaving of a cohesive brand narrative that extends beyond the confines of traditional advertising methods. Influencers, with their authentic storytelling and relatable personas, become storytellers who contribute chapters to the evolving narrative of the brand. This dynamic storytelling approach engages audiences in a continuous dialogue, fostering a sense of community and connection that transcends the limitations of one-off campaigns.

The impact of influencers on brand identity is not confined to transactional exchanges; it reflects a deeper and more meaningful connection with the values and aspirations of the target audience. Through the shared values communicated by influencers, brands solidify their position in the hearts and minds of consumers. This connection extends beyond product preferences to a shared identity, where consumers see the brand not just as a provider of goods but as a reflection of their own values and lifestyle.

Influencers metamorphose into architects of brand identity, contributing to a narrative that extends beyond promotional endeavors. The strategic alignment between influencers and brands transcends the transactional nature of marketing, fostering a connection that resonates with the audience on a profound level. Through this symbiotic relationship, influence marketing becomes a powerful tool not only for driving short-term sales but for cultivating enduring brand loyalty anchored in shared values and authentic storytelling.

The intersection of brand perception and social media influencers is a dynamic realm where authenticity, trust, and alignment of values create

a powerful synergy. As brands navigate this landscape, understanding the intricate ways in which influencers contribute to brand perception becomes imperative for crafting strategies that resonate authentically with today’s discerning consumers.

3.3. Consumer engagement through social media influencers

In the dynamic landscape of digital marketing, the role of social media influencers extends beyond brand promotion; it serves as a catalyst for consumer engagement.

Social media influencers play a pivotal role in driving consumer engagement, creating a two-way dialogue between brands and their audience. Through authentic content, relatable narratives, and interactive features, influencers captivate and sustain the attention of their followers. This engagement extends beyond passive consumption to active participation, fostering a sense of community and connection. Influencers act as catalysts, turning audiences into active participants in brand stories, discussions, and experiences, thereby amplifying the overall impact of a marketing campaign (*Table 5*).

Table 5

Types of consumer engagement metrics

Metric	Description	Analysis
Engagement rate	Interactions (likes, comments, shares) per follower	Measures the depth of audience involvement; higher rates indicate a more engaged audience
Click-through rate (CTR)	Percentage of viewers who clicked on included links	Reflects the effectiveness of influencer content in driving audience to take action. Higher CTRs suggest strong content resonance
Comments and conversations	Quantity and quality of comments generated	Indicates the level of active engagement and the potential for community-building around the content
Brand mentions and tags	Frequency of brand mentions and tags by the audience	Demonstrates the extent to which the brand is organically integrated into audience conversations
Follower growth	Growth in influencer’s follower count during campaign	Reflects the campaign’s impact on expanding the brand’s reach through the influencer’s audience
Survey and feedback responses	Direct feedback on audience sentiments and preferences	Provides qualitative insights into audience perceptions and preferences for more tailored future campaigns

Source: own development.

The effectiveness of consumer engagement through influencers hinges on the synergy between brands and influencers. Strategic collaboration is essential for creating content that resonates authentically with the target audience. This involves aligning brand values with the influencer’s persona, allowing for seamless integration of brand messaging into the influencer’s content. Additionally, fostering creativity and granting influ-

encers creative freedom within brand guidelines contributes to the development of compelling content that stimulates audience engagement. Establishing clear communication channels, setting mutual expectations, and building long-term relationships are pivotal elements in creating impactful and enduring collaborations (*Table 6*).

Table 6

Key strategies for collaborating with influencers

Strategy	Description	Analysis
Brand-influencer alignment	Aligning brand values with the influencer’s persona	Ensures that influencer content seamlessly integrates with the brand’s identity, fostering authenticity
Creative freedom and guidelines	Balancing creative freedom with brand guidelines	Allows for creativity while maintaining brand consistency; striking the right balance is crucial for impactful content
Clear communication channels	Establishing effective communication channels	Facilitates smooth collaboration and ensures that both parties are aligned in terms of campaign goals and expectations
Mutual expectations	Setting clear mutual expectations for the campaign	A transparent understanding of roles and goals minimizes misunderstandings and enhances collaboration effectiveness
Long-term relationship building	Fostering long-term relationships for consistency	Consistent collaboration builds trust and allows for more cohesive and enduring brand narratives

Source: own development.

Measuring the success of influencer campaigns in terms of consumer engagement requires a thoughtful selection of metrics. Beyond traditional metrics like reach and impressions, key performance indicators (KPIs) for consumer engagement are presented in the *Table 7*.

Table 7

KPIs for consumer engagement

KPI	Description	Analysis
Engagement rate	Interactions per follower	High engagement rates indicate content resonance and the potential for brand loyalty among the audience
CTR	Percentage of viewers who clicked on links	A high CTR suggests effective content that motivates the audience to take desired actions
Comments	Quantity and quality of comments generated	Meaningful comments indicate a strong connection between the audience and the content, fostering a sense of community
Brand mentions and tags	Frequency of brand mentions and tags by the audience	Frequent mentions signify active brand integration into the influencer’s community, contributing to brand visibility
Follower growth	Growth in influencer’s follower count during campaign	Positive growth indicates the campaign’s impact on expanding the brand’s reach through the influencer’s audience
Survey and feedback	Direct feedback on audience sentiments and preferences	Valuable qualitative insights help tailor future campaigns to better meet audience expectations and preferences

Source: own development.

The success of consumer engagement through social media influencers relies on a harmonious blend of strategic collaboration, authentic content creation, and the meticulous measurement of metrics that reflect active audience participation. As brands and influencers navigate this collaborative journey, the impact on consumer engagement becomes not just a quantitative metric but a qualitative reflection of the depth and resonance achieved in forging meaningful connections with the audience.

3.4. Challenges and ethical considerations

As influence marketing continues to evolve, it brings forth a spectrum of challenges and ethical considerations that demand scrutiny. In the dynamic landscape of influence marketing, several challenges can impede the seamless execution of campaigns (*Table 8*).

Table 8

Challenges in influence marketing

Challenge	Description
Saturation and authenticity fatigue	The oversaturation of influencer content may lead to audiences becoming fatigued and skeptical about authenticity
Misalignment of values and messaging	The potential misalignment of influencer values with those of the brand can dilute the intended brand message
Influencer fraud and fake engagement	The prevalence of fake followers and engagement metrics poses a challenge in accurately gauging an influencer's true reach and impact
Evolving algorithms and platform changes	Frequent changes in social media algorithms can affect the visibility and reach of influencer content, requiring adaptive strategies

Source: own development.

The challenge of saturation and authenticity fatigue arises from the sheer volume of influencer content inundating digital platforms. To address this, brands should emphasize quality over quantity. Collaborating with micro-influencers, who often boast niche and engaged audiences, can mitigate saturation concerns. Additionally, adopting diverse content formats, such as behind-the-scenes glimpses, can inject freshness and authenticity into campaigns.

The misalignment of influencer values with the brand's messaging can dilute the campaign's impact. To counter this, brands must conduct thorough influencer vetting processes. This involves not only analyzing an influencer's content but also assessing their values and audience demographics. Clear communication and alignment meetings ensure that both parties share a unified vision, minimizing the risk of conflicting messages.

In the era of influencer fraud, brands must employ advanced analytics tools to scrutinize an influencer's audience authenticity. Analyzing engagement patterns, scrutinizing follower growth rates, and using third-party tools can help identify signs of fake engagement. Establishing partnerships with

influencers who prioritize genuine audience building and engagement becomes crucial in circumventing this challenge.

The ever-changing landscape of social media algorithms poses a challenge in maintaining consistent visibility. Brands must stay abreast of platform updates and tailor strategies accordingly. Diversifying across multiple platforms helps mitigate the impact of algorithm changes. Investing in paid promotions alongside influencer collaborations ensures a broader reach, providing a buffer against unforeseen algorithmic fluctuations.

Transparency and authenticity are pillars upon which successful influence marketing campaigns stand. Addressing these issues is crucial for building trust with the audience and sustaining long-term relationships (*Table 9*).

Table 9

Strategies for ensuring transparency and authenticity

Strategy	Description
Clear disclosure policies	Implementing transparent disclosure policies to inform the audience about sponsored content
Authenticity in content creation	Prioritizing authentic content creation that aligns with the influencer’s genuine experiences and values
Genuine product integration	Ensuring genuine integration of products or services into the influencer’s life to maintain authenticity
Honest communication with the audience	Encouraging influencers to communicate openly with their audience about partnerships and sponsored content

Source: own development.

Clear disclosure policies are essential to meet regulatory requirements and maintain transparency. Brands should collaboratively establish guidelines with influencers, specifying how disclosures should be presented. Incorporating these policies into influencer contracts ensures legal compliance and fosters trust among the audience.

Prioritizing authenticity in content creation involves empowering influencers to retain creative control. Encouraging genuine storytelling and real-life experiences resonates more with audiences. Brands should provide influencers with the freedom to incorporate products into their lives organically, reinforcing authenticity and building a stronger emotional connection with the audience.

Genuine product integration goes beyond surface-level endorsements. Brands should collaborate with influencers who genuinely resonate with the product or service. Incorporating products into the influencer’s daily life in a natural, unforced manner enhances authenticity. This strategy fosters a perception of credibility, as audiences perceive the product as an integral part of the influencer’s lifestyle.

Honest communication forms the bedrock of transparency. Influencers should communicate openly with their audience about sponsored content, sharing the reasons behind partnerships. Encouraging influencers

to be forthright about compensation and collaborations enhances credibility. This approach establishes a relationship based on trust, contributing to long-term audience loyalty.

Controversies and negative behavior by influencers can have far-reaching consequences, impacting both brands and the influencers themselves. Navigating these challenges requires a proactive approach and swift responses *Table 10*.

Table 10

Mitigating the impact of controversies

Mitigation Strategy	Description
Crisis communication plans	Developing robust crisis communication plans to address controversies promptly and transparently
Collaborative decision-making	Collaborating closely with influencers in decision-making processes to avoid potential pitfalls
Regular audits and compliance checks	Conducting regular audits to ensure influencers comply with ethical guidelines and brand standards
Learning from past incidents	Utilizing past controversies as learning experiences to enhance future influencer partnerships

Source: own development.

Crisis communication plans are essential for mitigating the impact of controversies. Brands must proactively anticipate potential issues and develop robust communication plans. Immediate and transparent responses during crises demonstrate accountability and a commitment to addressing concerns. This strategy aids in containing the fallout and rebuilding trust.

Collaborative decision-making involves fostering a partnership where influencers are actively involved in strategic discussions. By including influencers in decision-making processes, brands gain valuable insights into potential challenges and concerns. This approach minimizes the likelihood of missteps and ensures that both parties share responsibility in decision outcomes.

Regular audits and compliance checks are proactive measures to maintain ethical standards. Periodic evaluations of influencer content and behavior against brand guidelines help identify any deviations. Collaborative audits, where influencers actively participate, contribute to a transparent process, reinforcing the importance of adherence to ethical standards.

Learning from past incidents involves a continuous improvement mindset. Brands should conduct thorough post-campaign analyses after any controversy, identifying areas for improvement. Implementing lessons learned from past incidents enables brands to refine their strategies, policies, and selection criteria for future influencer partnerships.

Navigating the challenges and ethical considerations in influence marketing requires a proactive and adaptive approach. By acknowledging these issues and implementing strategic measures, brands can foster a more transparent and ethical influence marketing landscape.

3.5. Future trends and innovations

As influence marketing continues to evolve, it is essential to explore the emerging trends and innovations shaping the future landscape (Table 11).

Table 11

Emerging trends in influence marketing

Trend	Description	Analysis
Nano-influencers and hyper-personalization	Rise of smaller influencers with niche, engaged audiences	Shift towards quality engagement and targeted campaigns
Long-form content and storytelling	Emphasis on narrative-driven content in longer formats	Growing preference for immersive storytelling to captivate audiences
Sustainability and purpose-driven collaborations	Alignment with influencers advocating for social and environmental causes	Focus on purpose-driven campaigns for a positive societal impact

Source: own development.

The rise of nano-influencers, individuals with smaller but highly engaged audiences, represents a shift towards hyper-personalization. Brands are recognizing the potential of nano-influencers to create niche and authentic connections with specific demographics. This trend emphasizes quality engagement over sheer reach, allowing for more personalized and targeted campaigns.

Long-form content and storytelling are gaining prominence as influencers seek to create more immersive narratives. Platforms like Instagram’s IGTV and YouTube continue to grow as influencers leverage these formats to tell more detailed and compelling stories. Brands are likely to invest in partnerships that facilitate longer, more narrative-driven content to captivate audiences on a deeper level.

As consumers become more conscious of environmental and social issues, brands are increasingly aligning with influencers who advocate for sustainability and social causes. Future trends indicate a rise in purpose-driven collaborations where influencers act as advocates for brands committed to making a positive impact. Authenticity in supporting meaningful causes will be a key factor in driving consumer trust (Table 12).

Table 12

Innovations shaping brand-influencer relationships

Innovation	Description	Analysis
Virtual and augmented reality integration	Incorporation of AR and VR for enhanced user experiences	Utilization of immersive technologies to engage audiences more deeply
AI-driven influencer matching and campaign optimization	AI algorithms for precise influencer matching and optimized campaigns	Streamlining influencer selection and improving campaign efficiency
Ephemeral content and real-time engagement	Utilization of Stories for real-time and ephemeral content	Emphasis on dynamic and authentic engagement for immediacy and exclusivity

Source: own development.

The integration of virtual and augmented reality into influence marketing is an innovative frontier. Brands are exploring ways to enhance user experiences by leveraging AR and VR technologies. Influencers may collaborate on campaigns that allow audiences to interact with products virtually, creating a more immersive and engaging brand experience.

Artificial intelligence is revolutionizing influence marketing by enabling more precise influencer matching and campaign optimization. AI algorithms analyze vast datasets to identify influencers whose audience aligns with a brand’s target demographics. This innovation streamlines the influencer selection process, enhancing the efficiency and effectiveness of campaigns.

Ephemeral content, such as Stories on platforms like Instagram and Snapchat, is becoming integral to influence marketing. Brands are likely to embrace real-time engagement through ephemeral content, enabling influencers to connect with their audience in the moment. This dynamic and authentic approach fosters a sense of immediacy and exclusivity, driving higher engagement rates (*Table 13*).

Table 13

Predictions for the evolution of influence marketing

Prediction	Description	Analysis
Rise of virtual influencers and avatars	Emergence of computer-generated influencers	Redefinition of authenticity and creative storytelling possibilities
Integrated shopping experiences	Seamless in-app shopping experiences linked to influencers	Enhanced e-commerce integration for a frictionless purchase journey
Enhanced data analytics and measurement tools	Evolution of tools for deeper insights into audience behaviors	Importance of advanced analytics for demonstrating ROI and refining strategies

Source: own development.

The evolution of influence marketing may witness the rise of virtual influencers and avatars. Brands may explore collaborations with computer-generated influencers to curate a unique and stylized brand image. This trend could redefine authenticity in influence marketing, opening new creative possibilities for brand storytelling.

The future of influence marketing may see a seamless integration of shopping experiences within social media platforms. Influencers may directly link products to in-app purchasing, providing a frictionless shopping journey for their followers. This integration enhances the e-commerce aspect of influence marketing, making the purchase journey more convenient for consumers.

Predictions indicate an evolution in data analytics and measurement tools for influence marketing. Brands will likely invest in advanced tools that provide deeper insights into audience behaviors, allowing for more informed decision-making. Enhanced data analytics will become integral to demonstrating ROI and refining future influencer strategies.

In conclusion, the future of influence marketing is marked by a dynamic interplay of emerging trends and innovative technologies. Brands that adapt to these shifts and embrace the evolving landscape stand to create more authentic, engaging, and impactful influencer campaigns.

Conclusions

In concluding this comprehensive research of the social media influencers' impact on brand perception and consumer engagement, the findings align meticulously with the stated purpose of the article. The overarching aim was to dissect the intricate dynamics of influence marketing, transcending conventional strategies, and contributing nuanced insights for marketers, researchers, and industry professionals.

Addressing the first facet of the aim, the examination of influencer characteristics revealed that authenticity and relatability indeed play pivotal roles in shaping brand image. Influencers, with their unique traits, emerge as cultural mediators who contribute significantly to the establishment of a relatable brand identity. This reaffirms the hypothesis that influencers possess a profound capacity to shape how audiences perceive brands, fostering not only recognition but also a sense of trust.

Moving on to the evolution of influencer types, the research showcased a shift from traditional advertising to more nuanced storytelling and community building. Successful campaign case studies illustrated tangible impacts, emphasizing the strategic collaborations that transcend industries. These findings underscore the transformative nature of influence marketing, demonstrating its ability to adapt and redefine brand-consumer interactions.

The exploration of influencers' role in driving consumer engagement yielded valuable insights. Strategies for collaboration and metrics for measurement were presented, providing marketers with actionable tools to enhance their consumer engagement initiatives. This directly aligns with the purpose of guiding marketers through challenges and refining strategies based on emerging trends, fostering responsible and effective influencer campaigns.

Additionally, the analysis of challenges and ethical considerations within influence marketing served to address potential pitfalls and offered a roadmap for navigating the ethical landscape of this dynamic field. The strategic plan of the article, culminating in the exploration of emerging trends and innovations, ensures that the relevance of these findings extends beyond the present, guiding future endeavors in the influence marketing landscape.

In essence, the conclusions drawn from this research underscore the intrinsic connection between influencer characteristics, strategic collaborations, and the evolving landscape of consumer engagement. These insights provide a foundational understanding for stakeholders, serving as a compass for navigating the intricate world of influence marketing. The aim of the article has been successfully achieved, offering a detailed concise answer to each question posed in formulating the research aims, thereby determining the relevance and significance of the findings.

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ARTIFICIAL INTELLIGENCE IN ACCOUNTING

Artificial Intelligence (AI) technologies open up broad horizons for enhancing business efficiency and advancing various professional domains, boosting their productivity and competitiveness. There is an active exploration of approaches to incorporating AI technologies in the accounting sphere, promising a seamless transition from human to machine involvement. The aim of this article is to summarize the acquired experience, identify perspectives, constraints, and risks associated with the use of AI technologies in the professional activities of accountants. The research is based on the hypothesis that widespread use of AI in the professional activity of an accountant with an insufficient level of professional skepticism and caution carries significant threats and risks for both the accountant and the business as a whole. Scientific search methods, comparative and critical analysis, theoretical generalization, and synthesis were used. A prerequisite for implementing AI technologies in accounting is expert information systems and ERP systems. The

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ШТУЧНИЙ ІНТЕЛЕКТ У БУХГАЛТЕРСЬКІЙ ДІЯЛЬНОСТІ

Технології штучного інтелекту (ШІ) відкривають широкі можливості для підвищення ефективності бізнесу та розвитку різних сфер професійної діяльності, підвищуючи їх продуктивність і конкурентоспроможність. Ведеться активний пошук підходів до використання ШІ-технологій у бухгалтерській сфері, обіцяючи легку заміну людини машиною. Метою статті є узагальнення набутого досвіду, визначення перспектив, обмежень і ризиків використання ШІ-технологій у сфері професійної діяльності бухгалтера. В основу дослідження покладено гіпотезу, що широке використання ШІ у професійній діяльності бухгалтера за недостатнього рівня професійного скептицизму і обережності несе вагомі загрози і ризики як для бухгалтера, так і для бізнесу загалом. Використано методи наукового пошуку, порівняльного і критичного аналізу, теоретичного узагальнення та синтезу. Передумовою для впровадження ШІ-технологій у бухгалтерську діяльність є експертні інформаційні системи і ERP-системи. Результати аналізу



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analysis of AI technology implementation experience in various industries demonstrates their relevance in the accounting field for performing routine tasks (automated recognition of primary documents, processing incoming signals, and other standard operations with a simultaneous reduction in the probability of errors), analyzing large datasets, and providing information support for decision-making (processing business data and regulatory documents), training professionals, and organizing internal and external communication (particularly between humans and machines). Identified potential risks include breaches of privacy and data security, misinterpretation of output data, and the disregard of activity context, external and internal environments, especially due to the absence of emotional intelligence, which influences the trust level in integrated information systems. The requirement for the application of professional assessments and judgments, mandated by regulatory documents, limits the scope of AI technology utilization in accounting. Future research should focus on exploring the possibilities of widespread integration of AI technologies in information systems for accounting and improving legislation based on the principle of risk assessment.

Keywords: Artificial Intelligence, Accounting Information Systems, Accountant's Professional Judgment, Professional Ethics, Professional Skepticism.

досвіду впровадження ШІ-технологій у різних галузях доводить доцільність їх використання в бухгалтерській сфері при виконанні ряду рутинних завдань (автоматичного розпізнавання первинних документів, обробки вхідних сигналів та інших стандартних операцій з одночасним зниженням імовірності виникнення помилок), аналізі великих масивів даних та інформаційній підтримці прийняття рішень (опрацювання бізнес-даних і нормативних документів), навчання фахівців, організації внутрішньої та зовнішньої комунікації (зокрема між людиною і машиною). Виявлені ймовірні ризики порушення приватності і безпеки даних; неправильної інтерпретації вихідних даних; ігнорування контексту діяльності, зовнішнього і внутрішнього середовищ, зокрема через відсутність емоційного інтелекту, що визначає рівень довіри до інтегрованих інформаційних систем. Вимога застосування професійних оцінок і суджень, встановлена нормативними документами відповідальності бухгалтерів за прийняття рішень та надану інформацію обмежують сферу використання ШІ-технологій у бухгалтерській діяльності. Подальші дослідження плануються спрямувати на вивчення можливостей широкої інтеграції ШІ-технологій в ІСБО та вдосконалення законодавчих норм на основі принципу оцінки ризику.

Ключові слова: штучний інтелект, інформаційні системи бухгалтерського обліку, професійне судження бухгалтера, професійна етика, професійний скептицизм.

JEL Classification: O33, M41, M48.

Introduction

In recent decades, stable expectations have been formed regarding the solution of global problems (climate change, access to quality medicine) and the provision of sustainable development from the use of artificial intelligence (AI). The search for new opportunities in various spheres of life of society and individuals is extremely active. The use of AI technologies in business provides tangible competitive advantages and determines the development trend of many industries (Fostolovych, 2022). It has significantly changed the field of health care, financial sector, automotive industry, advertising and marketing, trade, education, tourism and hotel business, etc.

The AI possibilities in terms of machine learning, deep learning, its ability to process natural language and computer vision with its inherent unique characteristics and areas of application open up interesting perspectives and, at the same time, have become a challenge for a person in various areas of his professional activity. The disadvantage of the AI introduction in business activities is the fear of society regarding the replacement of humans with technological solutions.

For the research, the question of the AI impact on the professional activity of an accountant is relevant. This is expected to apply to the organization of work and the workplace. At the same time, it is important to understand what potential and significant consequences or challenges the use of AI technologies will have for the profession.

In 1956, at the Dartmouth seminar (among its participants were economist scientists), the task of modeling the human mind and creating machines capable of imitating human intelligence was set targeted research in the AI field was initiated.

As Ruda (2024) observes, the introduction of AI technologies led to the emergence of a significant number of uncertainties, discussions and ambiguous issues. The number of scientific publications on these issues is impressive. Scientists are investigating approaches to the use of AI technologies in various spheres of activity. For example, Ruda (2024) considered the feasibility of implementing and using AI in the banking sector; Barcaui & Monat (2023) compared the quality of performance of project management tasks by a human professional and a generative AI model; Bilyk et al. (2024), Lebedenko (2023) addressed marketing and marketing activities; Kovalenko and others. (2023) study the prospects of using AI technologies in personnel management, in particular, solving ethical issues related to data privacy and their regulation; Fostolovych (2022) considers the use of AI technologies in various spheres of economic activity. In turn, Kolesnikov & Karapetyan (2023) explore not only the opportunities, but also the threats and limitations of the use of AI technologies. At the same time, according to Lebedenko (2023), although the possibilities of AI technologies are widely discussed in the literature, it is not entirely clear how to apply these technologies.

Research on expert systems and AI in accounting began several decades ago and, according to Sutton et al. (2016), their number continues to grow steadily over the past 30 years. Among the studies of recent years, we note the publications of national and foreign authors, who consider the possibilities, advantages, disadvantages and express reservations regarding the use of AI technologies in accounting (Abdullah et al., 2024; Han et al., 2023; Khalifeh, 2023; Norzellan, 2024; Zhang et al., 2023; Korol & Klochko, 2020), as well as regarding the improvement of certain technical techniques of accounting (Cao, 2023; Yao, & Jin, 2023). Thus, Meservy et al. (1992) presented the results of a study of the AI use in expert systems in the areas of accounting, taxation and auditing; Han et al. (2023) analyzed the results of a survey of accountants regarding the AI impact on their professional activities. And Sutton et al. (2016) based on the analysis of publications and the practice of using AI in accounting strongly urge colleagues to more actively research the possibilities of using AI methods in the field of accounting.

Anyway, researchers express opposite opinions on the outlined issues. That is why the answer to the question about the prospects for the use of AI technologies in accounting requires the study of the experience gained in

various areas of professional activity, the determination of both the opportunities (advantages) of future technological innovations, as well as potential risks, limitations and measures aimed at achieving the optimal result for all interested parties.

The aim of the article is to generalize the acquired experience, determine the prospects, limitations and risks of using AI technologies in the professional activity of an accountant.

The hypothesis is formulated that the widespread AI use in the professional activity of an accountant with an insufficient level of professional skepticism and caution carries significant threats and risks both for the accountant and for the enterprise in general.

The theoretical and methodological basis of the research was the work of national and foreign scientists on the use of AI technologies in various spheres of professional activity. Scientific search methods are used to determine approaches to the introduction of AI technologies in business, comparative analysis, to establish the possibilities of their use in accounting; critical analysis, to assess the relevant advantages, risks, reservations and justify the need for regulatory regulation of the integration of AI technologies into information systems accounting; theoretical generalization and synthesis, for formulating conclusions and determining prospects for future research.

The main part of the article consists of four interrelated sections. Firstly, the prerequisites for the integration of AI technologies in AIS are defined. Secondly, the general advantages of using AI technologies in business are considered. Thirdly, the risks of using AI technologies in the AIS creation are characterized. Fourthly, key regulatory documents are defined that determine the legal framework for the use of AI technologies in the professional activity of an accountant.

1. Prerequisites for the AI technology integration in AIS

Traditional comments to the classic accounting system concern the insufficient speed of data processing and promptness of information provision, as well as periodic errors. Manual bookkeeping is too risky and time-consuming. The organization of accounting underwent drastic changes with the beginning of the use of computers and special software products to create an accounting information system (AIS). This made it possible to automate all accounting procedures from registration of raw data to providing users with reporting information and to a large extent reduce (but not remove) criticisms of accounting, change its organization and increase requirements for professional knowledge and skills of accountants. To understand the dynamics of AIS development, it should be taken into account that it is at the intersection of accounting and computer science. Because of this, the periodic appearance of new information technologies generates new research to study the possibilities of their application in the organization of accounting (Sutton et al., 2016). Moreover, as the authors note, even in the early 1990s, the big six accounting (auditing) companies used expert systems with integrated AI technologies, but then they were included in audit support

systems, and did not work as autonomous systems. The same can be said about the integration of AI technologies into ERP systems, which, among other things, have the necessary functionality for accounting. With each year of the development of AI technologies, their integration into ERP systems is getting deeper and wider, and their new capabilities are increasingly being used in accounting information systems.

The changes that have taken place in the professional activity of accountants due to the integration of AI in AIS are revolutionary (Korol & Klochko, 2020). By automating data entry and controlling financial records, accountants were able to focus on more complex tasks. The rapid development of AI technologies and their increasingly widespread use in various spheres of professional activity raises the question of the transition from fragmentary to systematic use of them in AIS.

The successful use of AI technologies requires distinguishing the following levels of discussion of this problem:

- a separate AI technology or primary ability to perform a separate action (for example, work with large databases);
- the ability of AI technology to perform certain tasks (for example, data analysis, making forecasts, determining trends);
- the use of AI technologies in a certain field of professional activity based on their integration into professionally oriented information systems (for example, accounting, auditing, finance, marketing, advertising, design).

The possibilities of using AI technology in various spheres of professional activity arouse wide interest, need to be studied and in each case depend on the content of such activity, types of work, legislative requirements, etc. Accounting activity involves the performance of both routine tasks related to the processing of primary documents, analysis of large data sets, organization of internal and external communication, and tasks that require professional decision-making. If AI technology has advantages in performing a certain task compared to a person or technologies of the previous generation, a request for its use in the relevant spheres of professional activity is formed. This approach is the basis of further research.

2. General advantages of using AI technologies in business

Currently, in various fields of professional activity, specialists are looking for opportunities to use known AI types, each of which has its own unique characteristics and areas of application, namely: machine learning (training a model on large volumes of data to make decisions), deep learning (using neural networks for identifying patterns in data and improving the quality of solutions), natural language processing (the ability of machines to understand and interpret, generate and reproduce answers in human language), computer vision (the ability of machines to analyze, perceive and create such visual data as images and videos) (Termin.in.ua, n.d.).

Researchers (Abdullah & Almaqtari, 2024; Khalifeh, 2023; Cao, 2023; Bilyk et al., 2024; Ruda, 2024; Fostolovych, 2022; Termin.in.ua, n.d.;

Alter Systems, 2023) note a number of advantages the use of AI technologies in various areas of professional activity. In the context of the prospects of their use in the activity of an accountant, we note the following.

Machine learning. AI is trained on large data sets and is capable of continuous learning in the process of communicating with a person, performing assigned tasks, processing added texts, and more. This is relevant for the work of an accountant, especially in Ukraine due to the unstable external environment and regular changes in legislation.

Improving human-machine communication. AI is able to perceive human speech and convert it into machine-readable signals, formulate and provide answers in a human-understandable form (such as the recent Google Gemini language model).

Recognition of graphic objects (symbols, images) and sound signals. Thanks to this, AI is able to "read" and process primary documents and verbal input messages. As a result, the database is automatically replenished, systematized and presented in a specified format (for example, in the form of text, tables, graphs).

Analysis of large data sets. This AI ability, as observed by Khalifeh (2023), is necessary for making better financial decisions, identifying financial trends, analyzing and visualizing its results, monitoring compliance with various types of rules and regulations, providing guidance on new tax laws and regulations, determining deductions and pre-calculation tax obligations, performance of repetitive time-consuming tasks, improvement of relations with clients.

Training of specialists. AI models and methods are used in expert systems to expand professional knowledge, improve professional experience, and form professional judgment. In particular, large auditing firms and individual universities (for example, Brigham Young University, USA) were engaged in such developments in the early 1990s (Meservy et al., 1992).

Reducing the probability of errors. Under the conditions of a complex algorithm and a large set of tasks, AI is able to perform them more accurately and obtain a better result (Fostolovych, 2022). This applies to well-structured tasks, the solution of which is also provided by expert systems in accordance with a given algorithm.

Performing loosely structured tasks. As an example, Barcaui & Monat (2023) cite the task of planning and allocating resources during design. This ability significantly distinguishes generative AI from expert systems and other products. At the same time, as the authors note, AI lacks human experience, the ability to accurately describe important details and take into account content.

Risk management. Generative AI helps with risk assessment and mitigation by analyzing large amounts of data and identifying potential problems or bottlenecks.

Personal assistants. AI is trained to recognize patterns in data, identify trends, and make predictions. On this basis, some researchers conclude about his ability to make decisions (Kolesnikov & Karapetyan, 2023; Termin.in.ua, n.d.).

Instead, Fostolovych (2022) and Termin.in.ua (n.d.), with which one should agree, characterize it as the AI ability to provide information support to a specialist in decision-making, speed up the decision-making process and achieve a better result.

In addition, AI technologies, which are already integrated into ERP systems at a basic level, help accounting in enterprises in terms of data entry, processing and reconciliation of accounts, preparation of financial reports and notes to them (Sutton et al., 2016). Among other capabilities of AI technologies, it is worth highlighting the detection of regularities, trends and anomalies (Abdullah & Almaqtari, 2024), which, in particular, makes it possible to analyze financial reports and detect violations in entered data and unusual transactions (Alter Systems, 2023). Thus, according to the calculations of Zhang et al. (2023), the use of AI technologies in the formation of accounting transactions can be implemented with high efficiency. According to the researchers' calculations, the probability of error is about 0.23%, which can be considered a good result. At the same time, the researchers emphasize the need for practical confirmation of their calculations.

So, generative AI, which has been trained on various databases and models, is able to respond to certain situations, perform standard processing of accounting data and generate financial and tax reports at the request of users.

3. Risks of using AI technologies in AIS creating

Recognizing the advantages of AI technologies in various areas of professional activity and, in particular, in accounting, one should take into account the shortcomings that are revealed when they are used in certain areas of professional activity and cause potential risks. In particular, despite the fact that the authors mainly focus on the opportunities and advantages of using AI technologies, the caution and skepticism inherent in the professional activity of an accountant require us to pay attention to weaknesses and potential risks.

The implementation of AI technologies has challenges common to all stakeholders in terms of data security, privacy and misuse of information; accountability; availability; transparency and trust (Zhang et al., 2023). At the same time, Alter Systems (2023) and Karbon (n.d.) note that the use of AI technologies in the performance of some operations in AIS is associated with the following risks:

- machine learning to perform the accounting procedures of a specific enterprise using their business data: the economic activity of the enterprise, the context of its activity and the accounting policy have certain features, and therefore require the provision of an AI model of access to business data. As stated by Alter Systems (2023), the question arises as to whether AI can transfer enterprise business data to competitors;
- recognition of primary documents and processing of incoming signals: the access of AI technologies to private data causes business concerns about ensuring the confidentiality of information. In addition, one cannot be sure

that the AI (ChatGPT) answers to the question are true and complete. AI is not capable of guaranteed correct interpretation of raw data (for example presented in tabular or graphical format);

- predictive analysis and generation of texts: the use of AI technologies for the implementation of functions of analysis and writing of texts worries users about the completeness and accuracy of the received information. Meanwhile, according to Yao & Jin (2023), AI can read and extract data from a page, but it cannot think critically and apply the extensive knowledge and experience of professionals in the relevant field.

The results of the analysis indicate the need to define approaches to the protection of business information. Regarding this, in particular, authors who are familiar with the technical side of the process express reservations (Termin.in.ua, n.d.; Alter Systems, 2023).

At the same time, Alter Systems (2023) and Karbon (n.d.) note that the use of AI technologies in the performance of some operations in AIS is associated with the following risks:

In addition, experts (Han, 2023; Zhang et al., 2023; Karbon, n.d.; Termin.in.ua, n.d.) express other concerns that are of a global nature and go beyond ISBO, in particular regarding:

- the potential impact of AI on employment. Since this concern was first raised, experts have repeatedly reassured the public that AI technologies cannot fully replace humans, and now the vast majority of accountants do not agree that such a threat exists, instead agreeing that the implementation of AI technologies requires them to new skills;

- confidence in the reliability and completeness of the data on which the AI model was trained. Accordingly, questions arise regarding responsibility for the selection and use of AI technologies in the accountant's professional field of activity, training the model, checking the received answers for correctness, training specialists for work;

- biases of AI models during data analysis and text writing. Such situations are likely and may occur due to intentional interference or the use of skewed data when training the model. The result can be dynamics that are difficult to detect and control.

At the same time, with the development of AI technologies and their widespread use, new challenges arise in the areas of ethics, privacy and data security, impact on workplaces, shortage of qualified specialists, potential social and economic consequences, etc. (Zhang et al., 2023; Kolesnikov & Karapetyan, 2023). Researchers point to the latent ignoring of ethical aspects when solving problems based on statistical models, fair and honest consideration of the interests of all interested parties, influence on professional judgment, skepticism and ethical considerations of the accountant when making decisions, etc. (Korol & Gnasko, 2021). To the ethical problems that management accountants and managers have to solve, the authors attributed the definition of advantages and problems at the stages before and after the decision to implement AI, gaps in expectations before and after the use of AI, bias in decision-making processes, distortion of results, excessive

dependence on AI and technical competence (Zhang et al., 2023).

In this context, company managers should receive sufficient confirmations about the possibility of "trusting" AI with tasks, the performance of which is related to professional responsibility and professional judgment (Abdullah & Almaqtari, 2024). AI lacks emotional intelligence, which is difficult to teach, and lacks an understanding of the organization's mission, which is the basis for decision-making and evaluating the results of financial analysis. Today, there are serious reservations about the use of AI in the professional activity of an accountant.

These issues and other challenges related to the specifics of the accountant's professional activity, the use of AI technologies, require special attention and legislative regulation.

4. Regulation of AI technology use in the accountant professional activity

The professional activity of an accountant has, in addition to technological, important regulatory and ethical limitations. In this context, the statement about the need to define an adequate legal framework for the use of AI technologies in various spheres of activity acquires special importance. At the same time, one should not only seek a "balance between promoting innovation and protecting the rights and freedoms of citizens" (Kolesnikov & Karapetyan, 2023), but also take into account business interests and requirements for a certain field of activity.

The Law of Ukraine "On Accounting and Financial Reporting in Ukraine" (Law of Ukraine No. 996-XIV, 1999) defines the requirements and scope of responsibility of the chief accountant or the person who ensures the accounting of the enterprise (at all stages of the accounting process) without taking into account and referring to AI technologies, as well as the legality of using an electronic document, electronic signature, electronic document flow and electronic form of financial reporting. The Conceptual Framework for Financial Reporting dated 01.09.2010 (IASB) states that "financial statements are largely based on <professional> estimates, <professional> judgments and models, rather than precise descriptions". In turn, the International Code of Ethics of Professional Accountants (IFAC, 2018) defines "the fundamental principles of ethics of professional accountants, which reflect the profession's recognition of its responsibility to protect public interests." That is, the use of AI technologies in the professional activity of accountants and auditors requires proper regulation, for example, in those matters involving the application of professional ethics, professional judgment and professional responsibility (Fomina et al., 2020).

At the same time, the use of AI technologies in business has also created real challenges for governments, businesses and citizens. In response, in 2019, the OECD defined Principles and developed Recommendations on Artificial Intelligence (Recommendation, 2019). They contain specific provisions regarding state policy and strategy; promote the development of

innovative and reliable AI with respect for human rights and democratic values. The OECD Recommendations on AI are based on the principles of inclusive growth, sustainable development and well-being; people-centeredness and justice; transparency and comprehensibility; strength, reliability and safety; responsibility these principles are relevant for various industries and spheres of professional activity (in particular, accounting).

The Government of Ukraine has recognized the OECD Principles on Artificial Intelligence. In 2020, the national Concept of AI Development in Ukraine (2022) was developed. The legislation of Ukraine should be harmonized with the International Code of Conduct for Organizations Developing Advanced AI Systems (The International Code of Conduct for Organizations Developing Advanced AI Systems) (European Commission, 2023) and documents of the European AI Alliance (The European AI Alliance. Shaping Europe's digital future, n.d.).

These measures, in our opinion, will have a significant impact on the professional activity of accountants; will contribute to the assessment of relevant opportunities, and the determination of ethical and legal limits of the application of AI systems. At the same time, the involvement of the International Financial Reporting Standards Council and the International Federation of Accountants in the process of regulatory regulation of the principles and measures of using AI in this area should be expected.

Conclusions

The possibilities of using AI technologies in various spheres of professional activity arouse wide interest, need to be studied and in each specific case depend on the content of the activity, types of work, and legislative requirements. The more complex is the task performance technology; the potentially higher is the effectiveness of the implementation of AI technologies.

Accounting involves performing both routine (technologically simple and monotonous) work, as well as tasks that require the processing of large volumes of data, professional judgment and decision-making. Therefore, various AI technologies are useful for the researched field of activity. Instead, their use requires establishing the correspondence between existing opportunities, on the one hand, and limitations and risks, on the other. The most critical for an accountant are the risks of misinterpretation of source data, provision of incomplete or false information, failure to take into account the context. In addition, ethical issues, problems of business data protection, fair and honest consideration of the interests of all interested parties need to be resolved. The role of AI technologies in accounting decision-making is limited by the need for professional judgment, skepticism, ethical considerations, and responsibility.

We expect that not only the general principles will be regulated at the legislative level, but also the principles and limits of the use of AI technologies in the professional activity of an accountant with the participation of international and Ukrainian professional organizations. It is important to

allocate the scope of responsibility for the use of AI technologies between software product developers, owners, users, regulators and other parties based on the principle of risk assessment.

For further research, it is of interest to study the possibilities of using AI technologies for the continuous support of an accountant at all stages of professional activity, in particular in management accounting, based on broad integration into AIS. International, European and national legislation regarding AI technologies also needs to be studied and monitored.

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GOODWILL MEASUREMENT IN CONSOLIDATED FINANCIAL STATEMENTS

The largest business in terms of capitalization value, revenues and profits was formed as a result of a business combination. Consolidated financial statements are of undoubted value to users and stakeholders in assessing risks, prospects and analyzing the interaction of companies within the group. Special indicators of consolidated financial statements, such as goodwill, allow estimating the expected value of acquired companies in a business combination. However, the current methodology does not allow for the evaluation of all aspects of value that constitute goodwill. The aim of the article is to supplement the methods of goodwill valuation in business combinations for further substantiated disclosure in consolidated financial statements, in accordance with the interests and needs of investors and managers. The research methodology is based on a systematic approach, critical analysis, synthesis, induction and deduction, comparison, economic-mathematical methods of goodwill calculation, and generalization of principles of consolidated reporting. An analysis of key international standards allowed us to determine the peculiarities of applying the acquisition method for different types of business combinations. The share of ownership in an investee determines the nature of influence and the method of consolidation. Goodwill is the difference between the purchase price and the fair value of the net assets acquired in a business combination. When companies merge, goodwill reflects the intangible aspects of the business and the expected added value, which serves as the investment object. Therefore, methods for valuing goodwill during business combinations are identified to disclose in consolidated financial statements in accordance with IFRS.

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ОЦІНКА ГУДВІЛУ В КОНСОЛІДОВАНІЙ ФІНАНСОВІЙ ЗВІТНОСТІ

Найбільший бізнес за вартістю капіталізації, доходами і прибутками утворений в результаті об'єднання компаній. Консолідована звітність має безперечну цінність для користувачів та зацікавлених сторін в оцінці ризиків, перспектив та аналізу взаємодії компаній, що входять до складу групи. Такі особливі показники консолідованої звітності, як гудвіл, надають можливість оцінити очікувану цінність придбаних компаній при об'єднанні бізнесу. Проте діюча методика не дає змоги оцінити всі аспекти вартості, що формують гудвіл. Метою статті є доповнення методів оцінювання гудвілу при об'єднанні бізнесу для подальшого обґрунтованого розкриття у консолідованій фінансовій звітності відповідно до інтересів і потреб інвесторів та менеджерів. Методика дослідження базується на системному підході, критичному аналізі, синтезі, індукції і дедукції, порівнянні, економіко-математичних методах розрахунку гудвілу, узагальненні принципів консолідованого звітування. За результатами аналізу ключових міжнародних стандартів визначено особливості застосування методу придбання для різних видів об'єднання бізнесу. Частка володіння в об'єкті інвестування визначає характер впливу та метод консолідації. Гудвіл показує різницю між ціною придбання та справедливою вартістю чистих активів, придбаних у результаті об'єднання бізнесу. При об'єднанні компаній гудвіл відображає нематеріальні аспекти та очікувану додану вартість бізнесу, що виступає об'єктом інвестицій. Тому виділено методи оцінювання гудвілу під час об'єднання бізнесу для розкриття у консолідованій фінансовій звітності відповідно до IFRS. Також систематизовано групу



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Additionally, a group of complementary goodwill valuation methods is systematized to determine and justify all aspects of forming the undisclosed added value of the investee company. The proposed methodology allows for considering the interests of various stakeholders in goodwill valuation. It is crucial to regard the goodwill disclosed in the financial statements as consent and willingness of the parent company to pay more, based on evidence and calculations obtained through a comprehensive goodwill valuation methodology. The proven hypothesis of the research suggests that for a justified valuation of goodwill during consolidation, it is necessary to supplement existing approaches and measure the value of brand, long-term stability, sustainable development, corporate social responsibility, and utilize artificial intelligence. Goodwill reflects strategic value but may also be subject to impairment if its value is not sufficiently supported by expected profits.

Keywords: goodwill; consolidated financial statements; business combination; integrated reporting; International Financial Reporting Standards.

JEL Classification: M40; M41; M49; G34.

Introduction

The importance of consolidation is determined by the need to provide complete and comprehensive financial information on the activities of all entities within a group or business combination. This process allows not only better managing available integrated resources and making informed strategic decisions, but also ensures completeness, transparency and impartiality of information for investors and creditors. Consolidated financial statements are prepared primarily in accordance with international accounting and financial reporting standards, which is very important in the context of business globalization. In addition, this process helps to manage risks and optimize taxation and financial planning, making businesses more efficient and competitive in today's business environment. In general, consolidation of financial statements is a key tool for ensuring integrated financial management of corporate resources of a group of companies, and goodwill reflects the willingness of the parent company investor to pay more in anticipation of a higher return on investment in a subsidiary.

The relevance of the research topic is due to the complex process of recognizing goodwill in business combinations and consolidation of financial statements. In essence, goodwill represents the value of goodwill, and in accounting it is an asset that is disclosed only in the consolidated statement of financial position. Goodwill arises when companies are bought and sold or when businesses are merged. Thus, it is a disclosed item and a full-fledged

комплементарних методів оцінювання гудвілу для визначення та обґрунтування всіх аспектів формування доданої нерозкритої вартості підприємства-об'єкта інвестицій. Запропонована методика доає змогу врахувати інтереси різних зацікавлених сторін в оцінюванні гудвілу. Важливо розглядати розкритий у звітності гудвіл як згоду та готовність материнської компанії заплатити більше, що ґрунтується на доказах і розрахунках, отриманих завдяки комплексній методиці оцінювання гудвілу. Доведена гіпотеза дослідження, що для обґрунтованої оцінки гудвілу під час консолідації необхідні доповнити існуючі підходи і вимірювати вартість бренду, довгострокову стійкість, сталий розвиток, соціальну відповідальність бізнесу та використовувати штучний інтелект. Гудвіл відображає стратегічну цінність, але також може підлягати знеціненню, якщо його вартість не є достатньо обґрунтованою очікуваними прибутками.

Ключові слова: гудвіл; консолідована фінансова звітність; об'єднання бізнесу; інтегрована звітність; міжнародні стандарти фінансової звітності.

accounting item, but only at the time of consolidation. At the same time, the nature of external (disclosed) goodwill is to generate internal goodwill, which causes the value of the enterprise to increase at a rate higher than the growth of its balance sheet value. Goodwill arising from the acquisition of a business or company represents an overpayment made by the acquiring investor, who in turn expects additional future economic benefits from the purchase.

The obstacle of determining goodwill in consolidation of financial statements arises from the fact that goodwill is an asset that does not have specific physical or legal forms. Assessing and determining its value is difficult due to the uncertainty of the factors that generate goodwill and the lack of a clear methodology for assessing intangible off-balance sheet factors that generate internal goodwill. Goodwill embodies such aspects as business reputation, brand value, intellectual capital, customer loyalty, management efficiency, technological advantages, etc. As these factors are uncertain and often subjective, estimating their value becomes laborious. In addition, changes in conditions and the assessment of goodwill impairment are affected, as its value may be higher than the expected future cash flows from the investee. In today's rapidly changing environment, forecasting these cash flows may not be sufficiently reliable, and changes in the economic environment may significantly affect the estimate.

In the case of consolidation of a group of companies, an aggregation problem may arise, as goodwill may arise at each structural level of the business combination. The measurement and aggregation of goodwill in consolidated financial statements can be complex, especially if companies are located in different jurisdictions. The absence of specific standards and objective methods for valuing goodwill leads to a high degree of subjectivity in determining its value. Different methods related to discounting or comparative valuations may lead to different results. Overall, the challenge of determining goodwill lies in the complexities of valuing all aspects of a business, intangible factors of its worth, which characterize goodwill, becoming the object of consolidation in financial reporting. Additionally, the problem of goodwill assessment lies in the nature of its formation. Various entities assess goodwill – parties with different interests and objectives: the buyer-investor potentially intending to acquire a subsidiary, owners, managers, company accountants aiming to maximize internally generated goodwill, auditors, independent appraisers, relying on the requirements of current standards and regulatory documents.

Understanding the potential impact of intangible assets in modern conditions, the instability of companies' market value, where many aspects of business value remain unaccounted for in the accounting system and undisclosed in financial reporting due to the imperfection of International Financial Reporting Standards is crucial. Undisclosed aspects of value that form goodwill indicate that they are difficult to manage effectively since we cannot manage what we do not measure.

Investor companies, which acquire other enterprises, carry out business combinations to gain added value, worth, synergy, additional intangible assets, and integrate them into business groups. However, current methods do not allow for accurately assessing these components, which subsequently form goodwill, disclosed in consolidated financial statements. Therefore, there is a discrepancy between the book value and market value of the enterprise, between internally generated and externally disclosed goodwill. Consolidated financial statements most comprehensively demonstrate the value of all intangible assets of the group, including expectations reflected in goodwill. Although current recognition criteria, established by IAS 38, IFRS 3, IFRS 10, limit the ability to account for intangible value-generating factors, new IASB projects aim to modernize accounting approaches, including the assessment and accounting of goodwill. In anticipation of changes to IFRS, the existing goodwill valuation methodology needs significant supplementation and expansion to reflect modern business conditions and consider factors shaping goodwill.

The review of literature on the issues of recognition and calculation of goodwill and consolidation of financial statements reflects the complexity and relevance of these issues in the field of accounting and finance.

The definition and calculation algorithm of goodwill, as noted in the literature by (Voloshenko, 2020; Umantsiv, 2006; Hargrave et al., 2024) highlight the complexity of determining goodwill as an intangible asset, which lacks physical substance, with factors affecting its magnitude lying in the realm of competitiveness, assessment of business reputation, and future buyer expectations. Goodwill is also interpreted as the reputation of the company, calculated at the time of acquisition, and is identified as a component of intangible assets alongside components (classes) such as Franchise Agreements, Copyright, Trademark, Licenses, Government Grants, Internet Domain Name, Trade Secret, Know How, Research & Development, etc. (GIFT™, 2022). The authors discuss different approaches to assessing the sources of goodwill and the possibility of subjectivity in this process. Along with this, goodwill is considered as a component of intellectual, human, social capital and relationships (Kostyuchenko et al., 2024).

Problems of goodwill valuation and impairment (Lessambo, 2022) focus on the difficulties associated with the valuation of goodwill and the identification of signs of its impairment. Different approaches to determining the market value of goodwill and strategies for identifying its impairment are discussed as potential sources of uncertainty and risks in the works of (Umanska & Lavrova-Manzenko, 2021).

The prerequisites for consolidation of financial statements are discussed by authors (Novikov, 2023; Bezverkhyy, 2015) highlight the trends of business globalization, economic integration, optimization of the structure of associations, which in turn put forward a number of requirements for information support of reporting consolidation and development of standards.

Methodology of financial reporting consolidation as literature sources and publications (Pelekh et al., 2021; Kollruss, 2022) consider issues related to financial reporting consolidation, including the definition of control, consolidation methodology and various aspects of recognition and measurement of indicators of combined entities.

Differences between international and national standards, Ukrainian and European legislation in matters of consolidation of financial statements and goodwill accounting – the impact of Directive 2013/34/EU on the need to publish consolidated financial statements of companies and the level of disclosure of information on goodwill, are covered in detail in (Malyshkin et al., 2018). Thus, the authors Malyshkin O., Bezverkhy K. et al. highlight the differences and directions of harmonization of international and national standards on goodwill and consolidation of financial statements, emphasizing the need to resolve these differences to improve the quality and comparability of financial statements.

Current trends, problems and changes in the regulation of consolidation of financial statements – literature sources (Tkachuk et al., 2021) reflect the latest trends and possible changes in the regulation of goodwill accounting and consolidation of financial statements, in particular the use of exceptions to consolidation (Gluzova, 2015).

The research presented in (GIFTTM, 2022) underscores the importance of developing approaches to the valuation of goodwill disclosed in consolidated financial statements.

Existing studies focus on the implementation of changes to international standards, peculiarities of presenting consolidated financial statements in Ukraine amidst the state of war (Gnasko & Semenova, 2023), expanding the significance and dissemination of consolidation principles in the preparation of non-financial and integrated reporting by a group of companies – the publication (Korol et al., 2022) provides a forward-looking vision for disclosing information on social responsibility and contributions to sustainable development by parent and subsidiary companies on a consolidated basis.

A common trend in the scientific literature is the search for effective methods and approaches to address issues related to goodwill determination and financial statement consolidation. Additionally, existing developments require further elaboration to enhance the quality of consolidated reporting, supplement goodwill valuation methods, and ensure a higher level of completeness, transparency, and reliability of information to meet users' needs.

The research hypothesis is that to provide a well-founded assessment of goodwill value during financial statement consolidation, existing approaches need to be supplemented with modern methods for determining brand value, measuring long-term sustainability, sustainable development,

business social responsibility, and methods based on artificial intelligence. According to international financial reporting standards, forms of capital participation and methods of financial statement consolidation affect the process of goodwill assessment and calculation during business combinations, thus necessitating the supplementation of existing methodological approaches to goodwill assessment, taking into account the interests and needs of investors and managers. This hypothesis asserts that approaches to financial statement consolidation can impact the assessment and calculation of goodwill during business combinations. It anticipates that an analysis of goodwill calculation in the context of applying international financial reporting standards and supplemented methodology will help understand the factors and approaches used in determining the value of goodwill in the business combination process.

The aim of the article is to outline the main procedures and supplement methods for assessing goodwill in business combinations for its further justified disclosure in consolidated financial statements that satisfy the interests and needs of investors and managers.

Research objectives are:

- To characterize the elements of business combination accounting using the acquisition method.
- To analyze the impact of the target entity's capital participation structure on the selection of consolidation methods and procedures.
- To examine the goodwill calculation process during business combination based on a practical example and completes a working table for financial statement consolidation.
- To determine the relationship between internally generated goodwill and externally disclosed goodwill, as well as approaches to goodwill valuation.
- To formulate methodological tools for comprehensive, reliable, and well-founded goodwill assessment. Systematize methods that allow for the analysis and evaluation of a business combination agreement and provide confidence that management has paid a reasonable price, ensuring the adoption of informed decisions and trust in management by shareholders and investors

The research methodology is based on the use of general scientific and special methods of cognition: critical analysis of special scientific literature; systematization of current provisions and requirements of regulatory and legal regulation of financial reporting consolidation, study of the impact of changes in legislation on the process of financial reporting consolidation, in particular in the context of changes related to martial law; economic and mathematical methods and practical approaches to calculating goodwill and its reflection in accounting; comparison of consolidation methods.

Consolidation of financial statements and calculation of goodwill are directly related to the business combination process.

In the main part of the article, the following issues are addressed: the first section provides an analysis of business combination accounting methods as a prerequisite for financial statement consolidation; the second section discusses financial statement consolidation for goodwill determination; the third section is dedicated to analyzing methodical approaches to recognition and disclosure of goodwill; and the fourth section characterizes the main procedures of financial statement consolidation.

1. Business combination as a prerequisite for reporting consolidation

For accounting and reporting purposes, a business combination is defined as the combination of separate business units, or businesses, into a single reporting unit or as a transaction or other event in which an acquirer obtains control of one or more businesses. In this case, a business is an integral set of activities and assets that can be managed to provide goods and services to customers, and to earn investment income, such as dividends, interest, or other income from ordinary activities (IFRS 3, 2023). Identification of the business, in particular through such elements as the resources involved, the technological process and the final product, is important because if the acquired assets are not a business, the accounting and reporting does not reflect a business combination, but rather the acquisition of assets.

To ensure the reliability, appropriateness and comparability of the presentation of information on business combinations and its results in their financial statements, enterprises are guided by the requirements of IFRS 3 "Business Combinations", which defines the principles and conditions for such actions of the buyer as:

- recognition and measurement in the financial statements of assets acquired, liabilities assumed and any non-controlling interest in the acquiree;
- recognition and measurement of goodwill acquired in a business combination or a bargain purchase gain;
- determine the required disclosures to enable users of financial statements to evaluate the nature and financial effect of a business combination.

An entity accounts for each business combination using the acquisition method of accounting. This method requires the identification of elements such as: the acquiring party, the acquisition date, the recognition and measurement of the identifiable assets acquired, the liabilities assumed and any non-controlling interest in the acquiree; and the recognition and measurement of goodwill or bargain purchase gain (IFRS 3, 2023) (*Table 1*).

Table 1

Accounting Elements Characteristics for a business combination using the acquisition method

Components of the method	Characteristics
Definition of an acquirer	An acquirer is an entity that obtains control over an acquiree. In a business combination that is achieved through the transfer of cash or assets or the assumption of liabilities, the acquirer is the party that transfers the cash, assets or assumes the liabilities. If the business combination is achieved through the exchange of equity interests, the acquirer is the party issuing the equity interests. This takes into account the largest share of voting rights in the combined entity, the composition of the management body, and the terms of the transfer of equity interests. Additional criteria include the size of the merging entities and the dominance of the party initiating the merger
Determining the acquisition date	The acquirer determines the acquisition date as the date on which it obtains control of the target in accordance with a written agreement or the closing date on which the acquirer legally transfers the consideration, acquires the assets and assumes the liabilities of the target
Recognition and measurement of the identifiable assets acquired, liabilities assumed and any non-controlling interest in the acquiree	The recognition principle means that, as of the acquisition date, an acquirer recognizes, separately from goodwill, the identifiable assets acquired and the liabilities assumed and any non-controlling interest in the acquiree. The assets and liabilities must meet the recognition criteria set out in the Conceptual Framework. At the acquisition date, the acquirer determines the classification and assignment of the identifiable assets acquired and liabilities assumed based on contractual terms, economic conditions, its operating or accounting policies and other relevant conditions existing at the acquisition date. They are measured at fair value (subject to the exceptions in IFRS 3)
Recognition and measurement of goodwill or bargain purchase gain	An acquirer recognizes goodwill at the acquisition date measured as the excess of (a) over (b): (a) the aggregate of the consideration transferred (generally at acquisition-date fair value) or the amount of any non-controlling interest in the acquiree, or in a business combination achieved in stages, the acquisition-date fair value of any equity interest previously held by the acquirer in the acquiree; b) the net of the acquisition-date amounts of the identifiable assets acquired and liabilities assumed. A bargain purchase gain is recognized if (b) exceeds (a)

Source: compiled on the basis of and processing (IFRS 3, 2023; IFRS 10, 2023; Conceptual Framework for Financial Reporting, 2018; IAS 38, 2023).

A business consists of inputs and processes that are applied to those inputs to enable the creation of outputs. Thus, to define a business, IFRS 3 provides guidance for identifying its three elements: inputs, process and outputs.

A business combination can occur in the following ways: (a) one or more businesses become subsidiaries of the acquirer, or there is a legal merger of the net assets of one or more businesses; (b) transfer of net assets of one business or equity interests of its owners to another combining entity; (c) transfer of net assets or equity interests of all combining entities to create a new entity; (d) a group of former owners of one of the combining entities obtains control over the combined entity.

The acquisition of control may result from: the transfer of funds or other assets, the assumption of liabilities, the issue of equity interests, with or without the provision of compensation (including only by contract) (IFRS 10, 2023).

IFRS 3 provides additional guidance on applying the acquisition method to certain types of business combinations (IFRS 3, 2023):

- a business combination achieved in stages or incremental acquisition (e.g., when an entity first acquires a 25% equity interest in another entity that does not provide control, and then an additional 30%, which ultimately provides control over the target), which requires remeasuring its previously held equity interest at fair value with the resulting gain or loss recognized in other comprehensive income;

- a business combination without the transfer of consideration in the following circumstances: the acquiree repurchases its own shares to obtain control; veto rights that prevented the acquirer from controlling the target with a majority of the voting rights expire; or a business combination on a contractual basis without the transfer of control, consideration or equity interests (e.g., a dual-registered stock corporation).

If, in practice, a business combination is achieved without the transfer of consideration, the acquirer must determine the amount of goodwill or bargain purchase gain based on a valuation technique. In this case, the acquirer makes a judgment about the fair value of the acquirer's interest in the target at the acquisition date, instead of the fair value of the acquirer's equity interests transferred as consideration.

IFRS 3 requires the acquiring parent to disclose information for each business combination that occurs during the reporting period. Therefore, the notes to the annual financial statements provide information on the name and description of the investee; date of acquisition; percentage of voting interests acquired; reasons for the business combination and a description of how control was obtained; factors contributing to goodwill; fair value of the consideration transferred in the transaction; amounts recognized as of the acquisition date for each class of assets acquired and liabilities assumed; amount of non-controlling interest in case of acquisition of less than 100% of the subsidiary; other disclosures in case of a step business combination.

2. Consolidation of financial statements

The principles for the presentation and preparation of consolidated financial statements by an entity that controls one or more other entities are set out in IFRS 10 "Consolidated Financial Statements". According to IFRS 10, consolidated financial statements are the financial statements of a group in which the assets, liabilities, equity, income, expenses and cash flows of the parent and its subsidiaries are presented as if they belonged to a single economic entity. A similar definition is contained in Directive 2013/34/EU (Directive 2013/34/EU, 2013). At the same time, The Law of Ukraine "On accounting and financial reporting in Ukraine" (The Law of Ukraine № 996-XIV, 1999) and National Accounting Regulation (Standard) 1 "General

requirements for financial reporting" (NAR(S) 1, 2013) define consolidated financial statements as the statements of the controlling entity and the entities controlled by it as a single economic unit.

It should be emphasized that it is the control of the investee that is key to recognizing the investor as a parent, regardless of the nature of its participation in the entity. An investor determines whether it controls an investee if it is exposed to variable returns from its involvement with the investee, has rights to, and is able to affect those returns through its power over the investee. At the same time, power means the existence of existing rights that provide the ability to manage significant activities that significantly affect the results of the investee (IFRS 10, 2023), determine financial, investment and commercial policies, and control their implementation (NAR(S) 2, 2013).

The ownership interest in the authorized registered capital of an investee determines the form of equity participation and the method of consolidation (*Table 2*).

Table 2

Forms of ownership and methods of consolidation under IFRS

Ownership interest	Nature of influence	Method of consolidation	Participants (entity)	Standard governing
> 50 %	Control	Full consolidation	Group: parent company, subsidiaries	IFRS 10, IFRS 3
20%–50%	Significant impact	Equity method	Associates	IAS 28
< 20%	No material impact	Other investments	Financial asset	IFRS 9
Equal interests of several parties, in aggregate > 50%	Joint control of the contract	Equity method	Joint venture	IFRS 11, IAS 28, IFRS 9

Source: compiled on the basis of and processing (IFRS 3, 2023; IFRS 9, 2023; IFRS 10, 2023; IFRS 11, 2023; IAS 28, 2023; IAS 38, 2023).

A parent consolidates all of the entities it controls. In this case, full group consolidation is applied in accordance with the requirements of IFRS 10 and IFRS 3. If the ownership interest, directly or indirectly (through subsidiaries), is 20% (or more, but not more than 50%) of the voting rights in an investee, the investor has significant influence and such an entity is called an associate. Recognition of significant influence is associated with the power to participate in the financial and operating policy decisions of the investee, but not control or joint control of such policies (IAS 28, 2023). In particular, signs of significant influence may include: representation on the board of directors, participation in the development of policies and decision-making on dividends, significant transactions between the investor and the associate, exchange of management personnel, provision of technical information. In this case, if significant influence is present, the equity method is applied.

If more than two investors collectively control an investee (i.e., they must act together to control the investee, as each of them does not have individual control), joint control exists, in which case each investor accounts for its interest in accordance with IFRS 11 "Joint Arrangements" (IFRS 11, 2023), IAS 28 "Investments in Associates and Joint Ventures" or IFRS 9 "Financial Instruments" (IFRS 9, 2023).

In accordance with IAS 28 "Investments in Associates and Joint Ventures", the equity method of accounting is a method of accounting under which an investment is initially recognized at cost and subsequently adjusted for changes in the investor's share of net assets of an investee after acquisition. Investor's profit or loss includes the investor's share of profit or loss of an investee, and other comprehensive income includes the investor's share of other comprehensive income of such an investee.

With regard to the definition of an investee, it should be noted that the control assessment is performed at the level of each investee. However, in some circumstances, the assessment may be performed for separate structural units of the entity. Understanding the purpose and characteristics of the investee's activities is necessary to determine how decisions are made, who is able to manage the activities, and who receives the benefits from those activities (Semenova, 2021).

3. Recognition and disclosure of goodwill

IFRS 3 defines goodwill as an asset that embodies future economic benefits arising from other assets acquired in a business combination that cannot be individually identified and separately recognized (IFRS 3, 2023).

An asset can be considered identified if at least one of the following requirements is met:

(a) the asset is separable, i.e., it can be detached or separated from the entity and sold, transferred, leased or exchanged, either separately or together with a contract, a license, an identifiable asset or liability, regardless of whether the entity intends to do so;

(b) the asset arises from contractual or other legal rights, whether those rights are transferable or separable from the entity or from other rights and obligations.

Under IFRS 3, an acquirer discloses information for each business combination that occurs during the reporting period, including the factors that contribute to goodwill, such as expected synergies between the target and acquirer, intangible assets that do not qualify for separate recognition, or other factors.

The procedure for calculating goodwill in a business combination is set out in IFRS 3 (*Figure 1*).

Goodwill arises if the sum of (a) exceeds (b). If the opposite is the case, in which amount (b) exceeds amount (a), then it is a bargain purchase gain. IAS 38 (IAS 38, 2021) defines the accounting for identifiable intangible

assets acquired in a business combination. Thus, acquirer measures goodwill at the amount recognized at the acquisition date less any accumulated impairment losses.

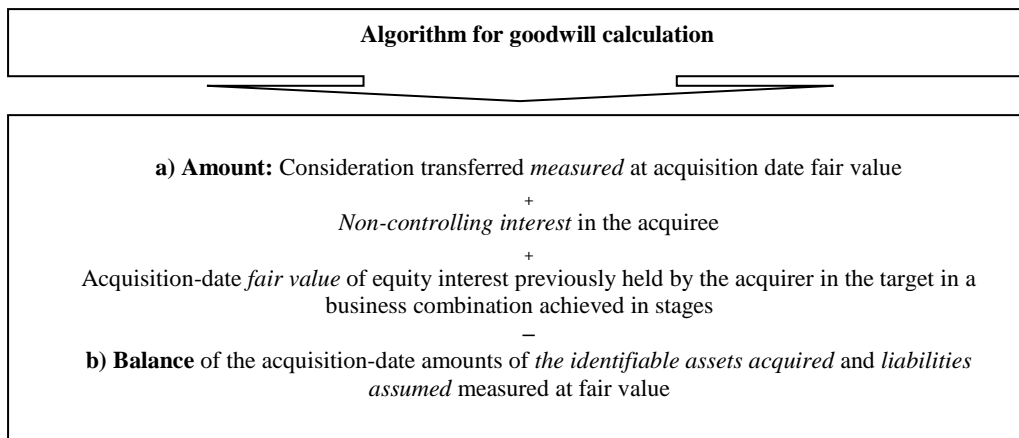


Figure 1. Goodwill Calculation in a business combination

Source: compiled on the basis of (IFRS 3, 2023).

Consider a practical example of goodwill calculation where a parent company acquired 60% of shares in a subsidiary for EUR 1 200 thousand. At the date of acquisition, the carrying amount of the subsidiary’s net assets was EUR 870 thousand and the fair value was EUR 1 050 thousand (revaluation amounted to EUR 180 thousand). To calculate goodwill and determine the non-controlling interest in the allocation of the acquired net assets of the subsidiary, the following amounts should be analyzed:

- 1) Cost of acquisition (consideration) = 1200.
 Carrying amount of net assets of the subsidiary = 1260 – 390 = 870.
 Fair value of net assets of the subsidiary = 870 + 180 = 1050.
- 2) Fair value of net assets acquired = 1050·0.60 = 630.
Goodwill = (1) – (2) = 1200 – 630 = 570.
 Equity of the subsidiary = 600+190+80 = 870.
 Non-controlling interest (NCI) 40% = 870·0,40 = 348.
 Equity of the subsidiary owned by:
 - Group = 600·0.60+190·0.60+80·0.60=360+114+48=522.
 - NCI = 600·0.40+190·0.40+80·0.40=240+76+32=348.

The revaluation of assets is 180, so 40% of the total amount of asset revaluation 180·0.40=72 should be added to NCI, so NCI = 348+72=420 (EUR thousand).

When preparing the consolidated financial statements, the amount of long-term financial investments, the components of the subsidiary’s equity owned by the group, are deducted from consolidated financial statements, and goodwill and the amount of the revaluation of assets to fair value (including the portion attributable to NCI) are added. The remaining items are subject to full consolidation (*Table 3*).

Worksheet for preparation of the consolidated balance sheet (statement of financial position)

Items	Parent		Subsidiary		Equity of a wholly owned subsidiary		Eliminations (adjustments)		Consolidated balance sheet	
	Asset	Liabilities and equity	Asset	Liabilities and equity	Group	NCI	Asset	Liabilities and equity	Asset	Liabilities and equity
Cash	2700		390						3090	
<i>Long-term financial investments</i>	1200							1200		
Property, plant and equipment	9500		870				180		10550	
<i>Goodwill</i>							570		570	
Total assets	13400		1260				750	1200	14210	
Liabilities		1200		390						1590
Share capital		7100		600	360	240	360			7100
Additional capital		4800		190	114	76	114			4800
Retained earnings		300		80	48	32	48			300
<i>Non-controlling interest (NCI)</i>								72		420
Total liabilities and equity		13400		1260	522	348	522	72		14210

Source: compiled on the basis of and processing (IFRS 3, 2023; IFRS 10, 2023; Fomina et al., 2023; Kostyuchenko et al., 2021; IFRS 12, 2023).

According to the Chart of Accounts for Accounting for Assets, Capital, Liabilities and Business Transactions of Enterprises and Organizations and Instructions for its Application (MinFin of Ukraine, 1999), account 19 "Goodwill" is used to account for goodwill with subaccounts: 191 "Goodwill on acquisition" and 192 "Goodwill on privatization (corporatization)". The debit of the account reflects the value of goodwill arising from the acquisition of another company (during privatization/corporatization), while the credit reflects losses from impairment of goodwill and its write-off. The debit of account 19 corresponds to the following accounts: 14 "Long-term financial investments", 37 "Settlements with various debtors", 68 "Settlements on other transactions"; credit – with accounts: 14, 37, 68, 45 "Capital withdrawal", 97 "Other expenses".

Goodwill is not subject to amortization but is tested for impairment in accordance with IAS 36 "Impairment of Assets" (IAS 36, 2023).

Goodwill arising on the acquisition of businesses is carried at cost at the acquisition date less accumulated impairment losses, if any. For the purpose of impairment testing, goodwill is allocated to each of the group's cash-generating units based on the expected future benefits to be derived from the synergies of the combination. A cash-generating unit to which goodwill has been allocated is tested for impairment at least annually. If the recoverable amount of the cash-generating unit is less than its carrying amount, the impairment loss is allocated first to reduce the carrying amount

of any goodwill allocated to the unit and then to the other assets of the unit on a pro rata basis based on the carrying amount of each asset in the unit. Any impairment loss for goodwill is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods. On disposal of a cash-generating unit, the amount of goodwill associated with the operation is included in the determination of the gain or loss on disposal.

Thus, goodwill recognized in a business combination is an asset that reflects future economic benefits. Sources of goodwill may include certain synergies after the business combination, expansion into other markets, and organizational capital (Demyanova & Semenova, 2022). However, this approach to identification and measurement is not entirely justified, since, according to IFRS 3, goodwill under the accounting approach can arise only on acquisition. It is also called external, disclosed goodwill (Lessambo, 2022).

According to IAS 38 (IAS 38, 2023), internally generated goodwill is not recognized as an asset because it is not an identifiable resource controlled by the entity and can be reliably measured at cost. However, it needs to be evaluated and taken into account in management accounting in order to build internal potential, environmental and intellectual capital, and competitiveness of the enterprise, which will contribute to the generation of internal goodwill and, if necessary, increase external goodwill arising from business combinations or sales of companies.

For the internal goodwill accounting, it is recommended to supplement the existing list of accounts with an additional subaccount 193 "Internal goodwill". In this case, analytical subaccounts should be provided for this account, for example: Human assets, Personal internal goodwill of the head, Client assets ("Client assets. Suppliers", "Client assets. Buyers", "Client assets. Potential buyers"), Intangible assets related to contracts ("Non-compete agreements", "Confidentiality agreements", "Favorable employment contracts", "Favorable insurance contracts", "Supplier agreements", "Buyer agreements"), Organizational assets ("Own software", "Organizational assets. Marketing", "Certificate of conformity of products", "Non-patented technologies", "Non-patented recipes"), Social assets, Environmental assets (Zadorozhnyi et al., 2021). However, the proposed analytical subaccounts will more satisfy the needs of internal management reporting than disclosure of information for external users. Since the current IFRS and IAS do not have appropriate mechanisms for the assessment and accounting of such objects. Objects that affect internally generated goodwill do not fully meet all the criteria for asset recognition provided for in the standards, which complicates the practice of goodwill valuation.

Approaches to defining external and internal goodwill differ. Internally generated goodwill is assessed by the enterprise, its accounting staff, managers, owners. External goodwill, which is disclosed in consolidated financial statements, is assessed by the investing enterprise, which is the buyer and ultimately acts as the parent company. It is the buyer – the parent company in the consolidated statements that discloses information about the

expected synergy from the acquisition, intangible assets that do not qualify for separate recognition, and other factors forming goodwill. The relationship between goodwill disclosed in consolidated financial statements (external goodwill) and internally generated goodwill as evaluation objects is more clearly presented in *Figure 2*.

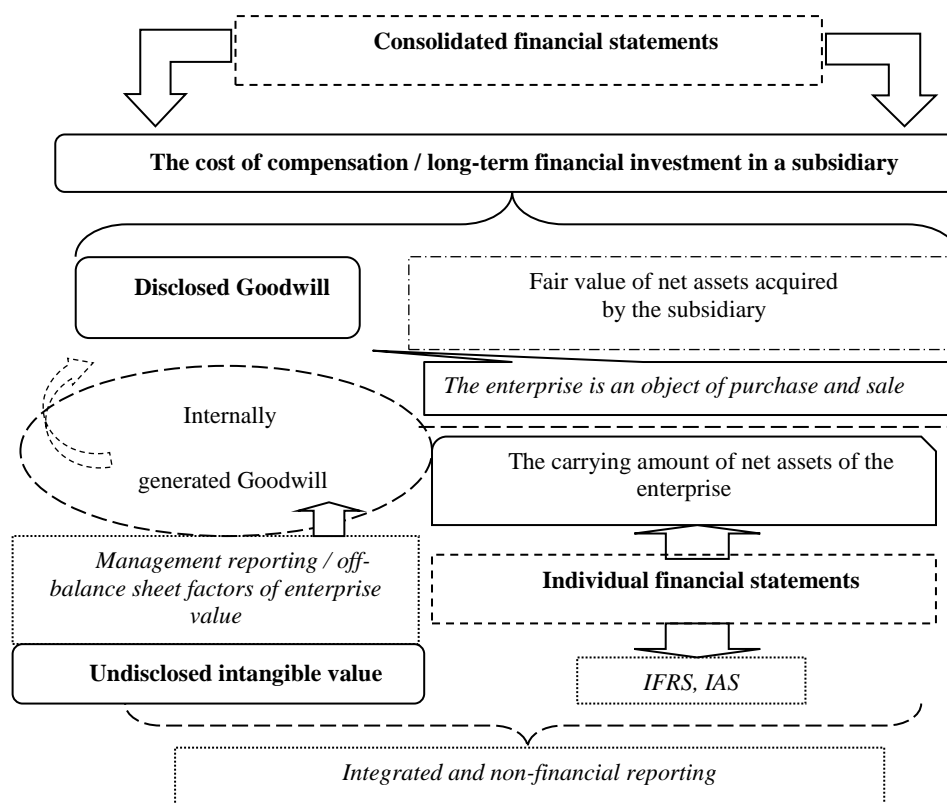


Figure 2. The relationship between disclosed goodwill in the consolidated financial statements, internally generated goodwill, and undisclosed intangible value

Source: compiled by the author.

It is important to underline that goodwill arising from business combinations and reflected in the consolidated financial statements depends on the purchase price, i.e., the compensation agreed upon by both parties when the enterprise is subject to acquisition, as well as the fair value of the acquired net assets. At the same time, these indicators, as well as the formation of expectations from the acquisition of a subsidiary, are significantly influenced by external environmental factors at the specific time of investment and business combination.

There is a need to shift the focus of goodwill assessment presented in the consolidated financial statements. It is essential to understand that goodwill arises essentially at the moment of concluding the business combination agreement and becomes visible in the consolidated financial statements. Goodwill is determined not so much by the difference between the compensation amount and the purchase price but rather by the willingness

and consent of the buyer to pay more than the current balance sheet value of the investment object. The amount of goodwill is determined by the investor’s vision and expectations from the business combination, from the arguments and evidence of what the acquisition of the subsidiary will bring to the group. Therefore, the methodological toolkit for goodwill assessment should be significantly broader and more diverse and not limited to IFRS. Thus, for goodwill assessment, the methodology defined in IFRS for disclosed goodwill needs to be supplemented with methods that allow for a comprehensive examination of the components and factors that shape the added invisible value of the company, expressed as goodwill.

A thorough analysis of scientific literature, goodwill assessment practices, and current trends and opportunities has allowed for the identification of four additional methodological approaches to goodwill assessment (*Table 4*).

Table 4

Complementary methods of goodwill evaluation

The methodological approach	Characteristics of the methodological toolkit
Methodology based on brand valuation for clients	<p><i>The discounted cash flow (DCF)</i> method evaluates goodwill by considering the projected future cash flows of the company, stemming from its constant value for customers and consumers. This may include customer loyalty, a strong brand reputation, and other factors contributing to revenue stability.</p> <p><i>The Transaction Multiples Method</i> compares estimated brand values with similar companies in the market that have analogous enduring value for customers. This may require an analysis of brand value, reputation, and other factors influencing customer relations.</p> <p><i>The Excess Earnings Method</i> assesses goodwill based on the profitability it generates through its enduring value for customers. It relies on estimating future excess earnings expected to be generated by the company due to loyal customers, as well as the avoidance of costs associated with acquiring new customers.</p> <p><i>The Market Price Method</i> utilizes the market price of the company’s stock and analyzes the difference between the market price and the company’s book value to determine the value of goodwill. This can be an effective method, especially for publicly traded companies where the market price of the stock reflects the overall market assessment of the company’s brand and reputation</p>
Assessment of the Company’s Long-Term Stability	<p><i>Financial analysis</i> includes approaches based on using financial indicators to analyze solvency, liquidity, and financial stability of the company, as well as assessing the company’s ability to withstand stressful situations such as economic downturns, changes in market conditions, risks, sanctions, etc.</p> <p><i>Stress tests</i> allow testing the company’s response to various stress scenarios. This may include modeling economic crises, military risks and their consequences, changes in market conditions, losses from the loss of key clients, etc., and assessing the impact of these scenarios on the company’s financial indicators and its readiness to survive in such conditions.</p> <p><i>Operational resilience analysis</i> evaluates operational efficiency and management effectiveness under stress conditions. It may include analysis of operational processes, inventory management, quality assurance, risk management, etc.</p> <p><i>Strategic risk management analysis</i> identifies and evaluates strategic risks that can affect the company and its readiness for and ability to effectively manage risks. This method includes evaluating risk management strategies, the presence of crisis and emergency business plans (e.g., in wartime), responding to changes in legislation, etc.</p> <p><i>Socio-economic analysis</i> assesses the company’s relationships with its stakeholders, including customers, consumers, employees, investors, the public, etc. This method relies on analyzing the company’s reputation, stakeholders’ interest in its success, and determining the company’s ability to maintain these relationships in turbulent conditions</p>

The methodological approach	Characteristics of the methodological toolkit
Assessment of goodwill considering aspects of sustainable development and social responsibility	<p><i>The Earnings Multiplier Method</i> allows for the valuation of goodwill based on a company's income metrics, taking into account not only current profit but also its projected dynamics, considering social and environmental factors.</p> <p><i>The Market Comparable Method</i> involves comparing the goodwill value of the subject company with that of similar enterprises in the market, taking into account various social and environmental indicators such as the degree of environmental efficiency, the level of social programs, management efficiency, and so forth.</p> <p><i>The Social Valuation Method</i> aims to incorporate social value based on indicators of the company's social responsibility activities. This method utilizes various approaches, including assessing contributions to environmental conservation, improvements in working conditions, promotion of social development, and more.</p> <p><i>Integrated Sustainability Assessment</i> relies on an approach that considers a broad spectrum of environmental, social, and economic (ESG) indicators to assess the impact of a company's activities on sustainable development, allowing the evaluation of goodwill as part of the overall social and environmental value of the company.</p> <p><i>Internal assessment Methods</i> include analyzing the company's internal processes, such as risk resilience, resource management efficiency, and employee engagement with sustainable development and social responsibility goals.</p> <p><i>External assessment Methods</i> include analyzing external factors such as consumer, investor, government, and NGO reactions to the company's activities in the context of sustainable development and social responsibility.</p> <p><i>The Triple Bottom Line Method</i> enables the determination of goodwill formation by measuring a company's impact on profit, people, and the planet, assessing the company's financial performance (profit), social aspects (people), and environmental impact (planet).</p> <p><i>The Stakeholder Approach Method</i> focuses on identifying and evaluating the company's impact on all interested stakeholders, including consumers, employees, investors, NGOs, and government agencies, thus taking into account the interests of these groups in assessing the company's goodwill.</p> <p><i>The Social Gross Domestic Product (SGDP) Method</i> determines a company's gross contribution to social development, including support for labor standards, consumer rights protection, support for local communities, environmental stewardship, volunteer initiatives, and other social aspects</p>
Using Artificial Intelligence for Goodwill Valuation	<p><i>Analysis of large volumes of data (Big Data)</i> using AI allows for processing large volumes of data from various sources, such as social media, news, customer feedback, and others, to identify patterns and trends indicating the level of goodwill of the company.</p> <p><i>Natural Language Processing (NLP)</i> for analyzing textual data, such as customer reviews, comments on social networks, etc., to identify sentiments, emotions, and overall attitudes towards the company.</p> <p><i>Machine Learning</i> based on historical data about the company, including financial and non-financial reports, stock value dynamics, brand ratings, etc., to develop models that can predict the future value of goodwill.</p> <p><i>Analytics of video and image data</i> from advertising campaigns, events, exhibitions, and other sources allows to understand how the company is perceived by consumers and accordingly its value to consumers.</p> <p><i>Decision Support Systems</i> provide recommendations for management strategies that can enhance the company's goodwill</p>

Source: compiled on the basis of and processing (Fomina et al., 2023; Hargrave et al., 2024; Kollruss, 2022; Kostyuchenko et al., 2024; Pelekh et al., 2021; Voloshenko, 2020).

At a time when the methodology for goodwill measurement in preparing consolidated financial statements is clearly defined by International Financial Reporting Standards, a second complementary group of goodwill valuation methods can be applied by investors to assess potential

acquisition targets and manage company value by management. A systematic approach includes the following approaches: brand valuation for clients, measuring the long-term stability of the company, evaluating considering indicators of sustainable development and social responsibility, goodwill valuation methods based on artificial intelligence capabilities.

Each of the proposed groups of methods has its advantages and limitations. For instance, the use of artificial intelligence for goodwill assessment can provide companies with a more accurate and objective understanding of their reputation and market value. However, it is also important to consider ethical aspects and data confidentiality protection when using such technologies. The development of goodwill valuation methods takes into account the long-term stability of the company under stressful situations, such as economic crises or changes in market conditions. This may include the development of models that assess risks and reserve opportunities to determine goodwill stability.

Goodwill assessment, considering its lasting value for clients and consumers, can be important in the context of many businesses, especially those based on customer relationships, innovation, product or service quality, brand reputation. Goodwill assessment, considering aspects of sustainable development and social responsibility, is becoming increasingly important for companies in the modern world. This approach reflects the general trend towards considering environmental, social, and corporate aspects in decision-making processes. These methods can be applied separately or in combination, depending on the specific situation and characteristics of the business. The proposed methodological approaches can help improve the accuracy and objectivity of goodwill assessment, which in turn will contribute to better management decision-making and increased trust from market participants.

Goodwill is an asset that reflects the difference between the value of the company as a whole business and the sum of the values of individual assets. Its assessment is important for financial reporting and investment decision-making.

Analysis shows that disclosed goodwill accounts for a significant portion of the value of the combined business, with its size reaching USD 133 billion in 2022 (for AT&T – *Table 5*). For example, the disclosed goodwill of AB InBev amounts to USD 116 billion or 61% of the company's value. The share of disclosed goodwill is 52% in Bayer, 45% for Sanofi and AT&T, 43% for CVS Health, 42% for BAT (GIFT™, 2022). It is noticeable that among the top 20 companies in the world by the value of disclosed goodwill, the overwhelming majority belong to the United States. By types of activity, Pharma, Healthcare, Technology & IT, Internet & Software, Media, Banking dominate.

Table 5

Top 20 Companies Worldwide by the Amount of Disclosed Goodwill in the Consolidated Financial Statements for the Year 2022

Rank	Name	Country	Industry	Disclosed Goodwill (USD bn)	Enterprise Value (USD bn)	Disclosed Goodwill/Enterprise Value
1	AT&T	United States	Telecoms	133	298	45%
2	AB InBev	Belgium	Drinks	116	190	61%
3	CVS Health	United States	Retail & Food Retail	79	184	43%
4	Disney	United States	Media	78	245	32%
5	UnitedHealth Group	United States	Healthcare	76	523	15%
6	Berkshire Hathaway	United States	Insurance	74	865	9%
7	Comcast	United States	Media	70	229	31%
8	Bank of America	United States	Banking	69	396	17%
9	BAT	United Kingdom	Tobacco	58	137	42%
10	IBM	United States	Technology & IT	56	169	33%
11	Sanofi	France	Pharma	55	123	45%
12	Raytheon Technology	United States	Aerospace & Defence	54	172	31%
13	JP Morgan Chase & Co	United States	Banking	50	487	10%
14	Microsoft	United States	Internet & Software	50	1701	3%
15	Pfizer	United States	Pharma	49	277	18%
16	Bayer	Germany	Pharma	46	89	52%
17	Cigna	United States	Healthcare	46	128	36%
18	Oracle	United States	Internet & Software	44	289	15%
19	Broadcom	United States	Technology & IT	43	223	19%
20	Thermo Fisher	United States	Healthcare	42	229	18%

Source: compiled on the basis of and processing (GIFT™, 2022).

Overall, these examples demonstrate the significant role that goodwill can play in business combinations, especially when it comes to acquiring valuable intangible assets such as brands, intellectual property, and customer bases. However, it is important to note that the success of these transactions can vary greatly depending on a range of factors, including market conditions and management decisions. The significant proportion of goodwill value disclosed in the consolidated financial statements indicates an imperfect mechanism for assessing business value today, noticeable divergence between book value and market value, and the presence of undisclosed intangible assets whose value is increasing (*Figure 3*).

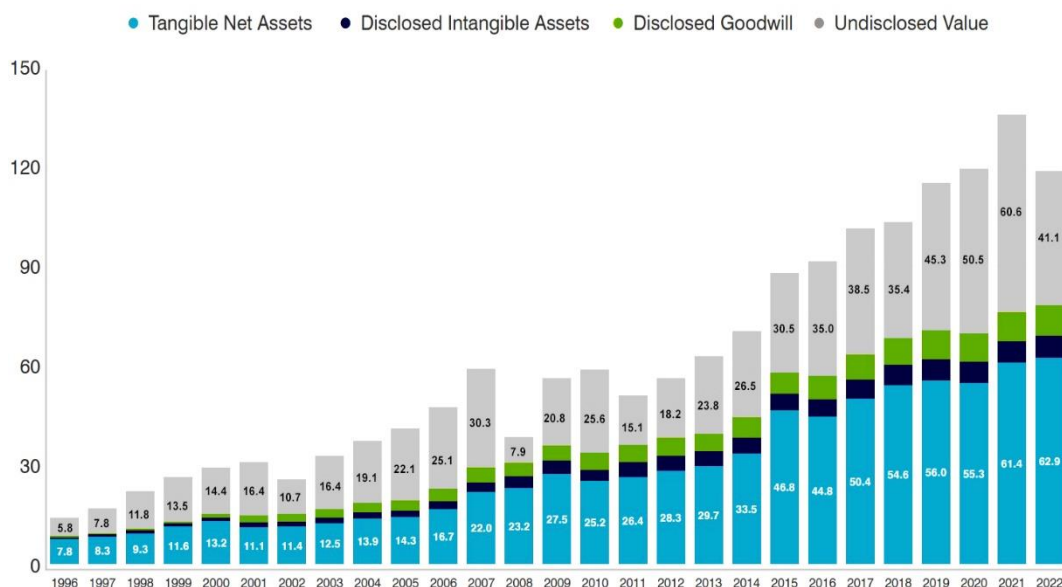


Figure 3. The global trend of the composition of value and Disclosed Goodwill (USD trillion)

Source: (GIFT™, 2022).

The value of undisclosed intangible assets, including internally generated goodwill, is noticeably increasing, indicating a growing deviation in the fair market value of the business compared to disclosed assets on the balance sheet. Modern accounting practice does not recognize internally generated intangible assets, except for acquired ones. The definition of an intangible asset by IFRS requires its non-monetary nature and identification. Since the beginning of 2001, IFRS has required a breakdown of the cost of intangible assets acquired through business combinations into various categories, such as those related to customers and the market. However, only acquired assets can be reflected on the balance sheet, complicating the assessment of the true value of the company. Considering this, enterprises must systematically assess all their assets and liabilities, including undisclosed intangible assets (GIFT™, 2022).

Thus, undisclosed intangible assets represent assets that are not reflected in a company's financial statements but may have significant value and impact on the market value of the enterprise. This category includes "internally generated goodwill" and the difference between the market value of the business and the value of its physical and identified intangible assets (GIFT™, 2022). Although internally generated goodwill is not formally recognized as an intangible asset, it is a controlled resource expected to bring future economic benefits.

Therefore, regardless of accounting standards requirements, companies must regularly assess all their tangible and intangible assets, including internally generated ones such as goodwill, brands, and patents, intellectual, social, and environmental capital, reflecting additional value that new management can create (GIFT™, 2022).

4. Consolidation procedures

A parent company prepares consolidated financial statements using uniform accounting policies for similar transactions and other events in similar circumstances. IFRS 10 sets out the requirements for the preparation of consolidated financial statements by parent entities that are related to the recognition of control, and also provides a list of conditions that allow a parent entity not to present consolidated financial statements (*Figure 4*).

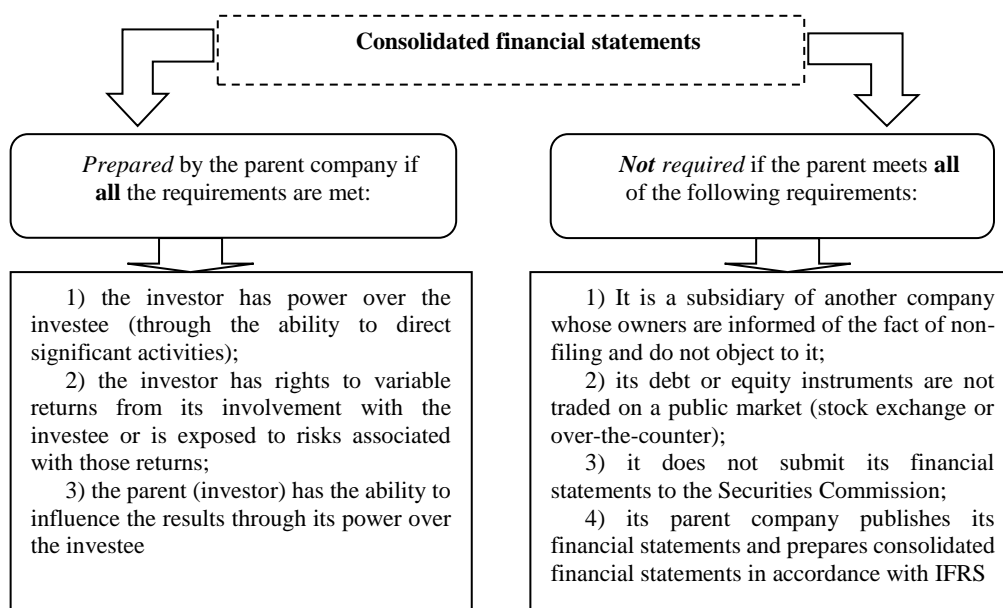


Figure 4. Requirements for the preparation of consolidated financial statements

Source: compiled on the basis of (IFRS 10, 2023; NAR(S) 2, 2013; Fomina et al., 2023).

If the consolidated financial statements are not prepared, information users cannot analyze goodwill because goodwill is an attribute of consolidated financial reporting. This underscores the relevance of the request for disclosure of goodwill information in integrated reporting (Kostyuchenko et al., 2024) or other forms of non-financial reporting of the enterprise.

Consolidation of an investee begins from the date when the investor obtains control over the investee and ceases when the investor loses control.

Paragraphs B86-B93 of IFRS 10 provide guidance on the preparation of consolidated financial statements. Thus, the *procedures* for consolidating financial statements include:

I. Combining similar items of assets, equity, liabilities, income, expenses and cash flows of the parent company with similar items of its subsidiaries.

II. Reduction (elimination) of the carrying amount of the parent's investment in each subsidiary and the parent's share of the equity of each subsidiary.

III. Elimination of all intra-group assets, liabilities, equity, income, expenses and cash flows between group entities. Profits or losses arising from intra-group transactions and recognized in assets (inventories, fixed assets) are completely excluded (Kostyuchenko et al., 2021). Intragroup losses may indicate an impairment that should be recognized in the consolidated financial statements. IAS 12 "Income Taxes" (IAS 12, 2023) addresses temporary differences arising from the elimination of profits or losses resulting from intra-group transactions.

Thus, subsidiaries, which are entities in which the Group has an interest, directly or indirectly, of more than one half of the voting rights or otherwise has the ability to exercise control over their activities, are fully consolidated in the consolidated financial statements. If the parent company owns 100% of the voting rights of a subsidiary, no non-controlling interest is calculated (Fomina et al., 2022; Semenova, 2021). In accordance with IFRS 12 "Disclosure of Interests in Other Entities" (IFRS 12, 2021), an entity discloses information to evaluate the nature of its interests in other entities, the risks associated with those interests, and the effects of those interests on its financial position, cash flows, and performance. In particular, the consolidated financial statements provide information on the composition of the group, the volume and balances of intra-group transactions, and their impact on the group's results.

Conclusions

For business owners, investors, and managers, it is important to understand the potential impact of intangible factors on the value of the business, which are not disclosed in the financial statements but materialize in the form of goodwill during business combinations and consolidation of financial statements. It is during business combinations that internally generated goodwill, formed by off-balance sheet factors of business value, becomes a fully recognized asset, assessed, and disclosed in consolidated reporting.

Consolidated financial statements show how the combined business operates, financial position, composition of property, ratio of liabilities, equity structure, cash flows, income and expenses, and profits of companies belonging to the group. The peculiarity of consolidated reporting is that the parent and subsidiaries are separate legal entities that maintain accounting records and prepare separate financial statements in accordance with the principle of autonomy. However, for consolidation purposes, the results of the group are presented as if they were a single economic unit. The methodology and procedures for preparing consolidated financial statements require compliance with a number of rules, including making adjustments, eliminating intra-group transactions and balances from the primary financial statements and disclosing them in the notes to the consolidated financial statements. The responsibility for preparing and presenting consolidated financial statements rests with the parent company, which prepares the worksheets and makes the necessary adjustments for consolidation purposes outside its own accounting system.

Goodwill and non-controlling interest are integral attributes of consolidated financial statements. The uniqueness of goodwill is that it reflects the immeasurable aspects of the business, the expected added value of the investee company. Goodwill is an important element in the consolidated financial statements as it affects the ultimate financial position of the Group. Goodwill reflects the strategic value that a company attaches to a particular asset or entity under its control. However, it may also be subject to impairment if its value can no longer be justified by expected future earnings. Therefore, goodwill in consolidated financial statements is an important aspect, as it reflects the intangible factors of a business's value that can significantly impact the overall resilience and efficiency of the company in competitive business environments.

The categorization of two groups of goodwill valuation methods allows for consideration of the interests and needs of various parties conducting such assessments. The first group of methods is designed for assessing disclosed goodwill during business combinations and consolidation of financial statements. The second group of goodwill valuation methods enables a thorough analysis of the value created by the company in its operations, the value of internal goodwill considered during subsidiary acquisition agreements, and the company's ability to generate goodwill for impairment testing. Management's own assessment of business value, including goodwill value, subsequently requires annual review and substantiation based on evidence and calculations proposed by the methodology to support their assumptions.

Therefore, the proposed hypothesis is substantiated, and for a justified valuation of goodwill during consolidation, the use of such methodological approaches is necessary: assessing brand value for customers, measuring long-term company stability, evaluating sustainability and social responsibility indicators, goodwill valuation methods based on artificial intelligence capabilities.

Thus, the scientific novelty lies in defining and grouping methodological approaches to assessing the value of goodwill, in accordance with the requirements of IFRS for disclosure in consolidated financial statements and accompanying notes, as well as in the group of additional methods that investors can utilize regarding potential acquisition targets and management during company value management.

Goodwill is unique in that it is assessed not only during acquisition. The proposed methodology will be useful for testing goodwill impairment for further financial statement consolidation, as well as for evaluating all aspects of internally generated goodwill formation. Currently, information about goodwill can be disclosed in more detail in the notes to the consolidated financial statements, as well as in other forms of non-financial reporting, including management reports and integrated reporting.

Prospects for further research include deepening knowledge and experience in the field of non-financial statement consolidation; improving international accounting and reporting standards; more comprehensive disclosure of goodwill formation aspects; analysis of the relationship between

internally generated goodwill and the amount of externally disclosed goodwill during consolidation. Ultimately, this will allow financial statement users to obtain more comprehensive information about the group's activities and the impact of off-balance sheet factors on business value and the amount of goodwill.

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