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C O N T E N T

FINANCE

MAZARAKI A., VOLOSOVYCH S.	Financial services in the PropTech ecosystem	4
OMELENCHUK V.	Forecasting the stability of the banking sector	17

MARKETING

BONDARENKO O., SIAZIN S.	Greenwashing in Eco-Branding of FMCG Enterprises	31
YAHELSKA K., VASYLYSHYNA L.	Brand management intelligence: digital technologies and tools	51
FEDULOVA I., DZHULAI M.	The employer's brand for generation Z	70
MASHCHENKO O.	Investing in niche marketplaces: value for leading companies	85
IANKOVETS T.	The concept of metamarketing in the experience economy	97

ACCOUNTING AND TAXATION

FOMINA O., SEMENOVA S., ROMASHKO O.	Ethics of professional accountants in the EU	119
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З М І С Т

ФІНАНСИ

МАЗАРАКІ А., ВОЛОСОВИЧ С.	Фінансові послуги в екосистемі <i>PropTech</i>	4
ОМЕЛЕНЧУК В.	Прогнозування стабільності банківського сектору	17

МАРКЕТИНГ

БОНДАРЕНКО О., СЯЗІН С.	Грінвошинг в екобрендингу <i>FMCG</i> -підприємств	31
ЯГЕЛЬСЬКА К., ВАСИЛИШИНА Л.	Аналітика бренд-менеджменту: цифрові технології та інструменти	51
ФЕДУЛОВА І., ДЖУЛАЙ М.	Бренд роботодавця для покоління Z	70
МАЩЕНКО О.	Інвестиції у нішеві маркетплейси: цінність для провідних компаній	85
ЯНКОВЕЦЬ Т.	Концепція метамаркетингу в економіці вражень	97

ОБЛІК ТА ОПОДАТКУВАННЯ

ФОМІНА О., СЕМЕНОВА С., РОМАШКО О.	Етика професійних бухгалтерів в ЄС	119
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FINANCIAL SERVICES IN THE PROPTech ECOSYSTEM

The widespread introduction of information technologies into all spheres of human life has transformed the needs of customers in the real estate market. As a result, the PropTech ecosystem has emerged, a component of which are financial services provided on the basis of financial technologies. The aim of the research is to identify the components of the PropTech ecosystem and clarify the place of financial services in it. The research has put forward two hypotheses: the first is that PropTech is transforming into an ecosystem whose participants are interconnected and provide complementary services to clients; the second is that FinTech is a significant participant in the PropTech ecosystem, providing financial support for real estate transactions. To test the hypotheses and achieve the aim, the following methods were used: comparative, systemic and graphical. Programmatic, subject and behavioral approaches to understanding PropTech have been proposed. The technical, economic, social and psychological factors of the PropTech emergence have been identified. The characteristic features of the PropTech evolution stages have been systematized. The global PropTech market has been analyzed. The composition of the PropTech ecosystem is proposed based on the combination of participants with a digital platform and the use of information

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ФІНАНСОВІ ПОСЛУГИ В ЕКОСИСТЕМІ PROPTech

Широке впровадження інформаційних технологій у всі сфери життєдіяльності людини трансформувало потреби клієнтів на ринку нерухомості. Внаслідок цього виникла екосистема PropTech, складовою якої є фінансові послуги, що надаються на основі фінансових технологій. Метою статті є виявлення складових екосистеми PropTech та з'ясування місця у ній фінансових послуг. У ході дослідження висунуто дві гіпотези: перша – PropTech перетворюється в екосистему, учасники якої взаємопов'язані та надають комплементарні послуги клієнтам; друга – вагомим учасником екосистеми PropTech є FinTech, що забезпечує фінансовий супровід операцій з нерухомістю. Для перевірки гіпотез і досягнення мети використано такі методи: компаративний, системний, графічний. Запропоновано програмний, суб'єктивний та поведінковий підходи до розуміння PropTech. Виявлено технічні, економічні та соціально-психологічні чинники виникнення PropTech. Систематизовано характерні риси етапів еволюції PropTech. Здійснено аналіз глобального ринку PropTech. Запропоновано склад екосистеми PropTech на основі поєднання учасників з цифровою платформою та застосуванням інформаційних технологій. Виявлено



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technologies. The advantages and disadvantages of the functioning of financial services within the PropTech ecosystem, threats and opportunities for their development have been identified.

Keywords: real estate, ecosystem, PropTech, GreenTech, FinTech.

переваги та недоліки функціонування фінансових послуг у складі екосистеми PropTech, загрози та можливості їх розвитку.

Ключові слова: нерухомість, екосистема, PropTech, GreenTech, FinTech.

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Introduction

Innovations affect all stages of social reproduction, including the production of goods and services and their consumption. They change markets, creating new forms of interaction between sellers and buyers. The real estate market is no exception, which has been transformed under the influence of information technologies, which have led to the emergence of the PropTech global phenomenon. The impetus for the PropTech development was the COVID-19 pandemic, in particular, due to the requirements for quarantine restrictions, consumer needs in the real estate market have been transformed towards receiving online services. For clients wishing to purchase or rent commercial or residential real estate, the important criterion is the combination of convenience, environmental friendliness of real estate, accessibility for familiarization with real estate, speed and availability of complementary financial services. The basis for the PropTech functioning was the spread of digital platforms, the increase in the number of Internet and smartphone users, and the possibility of applying information technologies in the real estate market.

PropTech emerged under the influence of the digitalization of the real estate market. Casertano et al. (2020) define the real estate market as a physical or virtual place where real estate values, services or securities that are part of the real estate business are developed and exchanged, and where the market value of the asset is determined as a result of the meeting of supply and demand. An analysis of foreign scientific literature makes it possible to assert that PropTech has been studied in various aspects. Tan and Miller (2023) identified the PropTech impact on sustainable development. Starr et al. (2021) emphasize the growing PropTech impact on the real estate market. Saiz (2020) analyzed the application of information technology in brokerage and commercial real estate financing. Kassner (2024) studied the impact of gross domestic product, unemployment, government bond rates, and foreign direct investment on investments in PropTech. Gilman (2024, May 1) linked the PropTech development with ensuring the human right to housing. In recent years, research by foreign authors has intensified in the context of identifying regional features of PropTech development. In particular, Górska et al. (2021) examine the experience of Poland, Saad and Milala (2024) – the experience of Nigeria, Yunita (2024) – the experience of Indonesia. There are also isolated mentions of the ecosystem in the scientific literature (Nouvel, 2023). Issues of the formation of PropTech ecosystems by industry representatives are considered. Thus, the founder of the startup

Meduoye (2024, July 18) emphasizes that the PropTech ecosystem consists of various stakeholders, including PropTech startups, real estate developers, property managers, investors, government agencies and technology providers, cooperating to promote innovation and digital transformation of the real estate industry. The author initiated an institutional approach to understanding the PropTech ecosystem.

In the national scientific literature, there are only a few references to the digitalization of individual segments of the real estate market. For example, Marchenko and Kolyadenko (2023) focus on the digitalization of the construction industry, Duginets and Aliyev (2020) consider the application of the latest information technologies in the global real estate market.

Based on the results of the scientific literature analysis and analytical reports, it is possible to distinguish software, subject and behavioral approaches to understanding PropTech. The software approach (PriceHubble, 2024, April 3) to PropTech involves the development of (corporate) software for part or the entire life cycle of real estate. Within the framework of this approach, PropTech is also considered as digital solutions for buying, selling or managing real estate Stypułkowski (2020, May 14).

PropTech proponents Braesemann and Baum (2020) consider PropTech to be property technologies in the real estate industry, concentrated in high-income countries, and used by market participants who work directly with digital data.

The behavioral approach assumes that PropTech is part of the digital transformation of the real estate industry, which is driving a change in the mindset of the real estate industry and its consumers towards technological innovations in data collection, transactions, and the design of buildings and cities (Baum et al., 2020, p. 5).

These discussions, as well as insufficient attention to the analysis of PropTech problems in the domestic scientific literature, necessitated our research, since in the context of increasing integration of the real estate market with FinTech, it is important to identify the components of the ecosystem and the place of financial services in it.

The aim of the research is to identify the components of the PropTech ecosystem and clarify the place of financial services in it.

During the research, two hypotheses were put forward: the first is that PropTech is transforming into an ecosystem whose participants are interconnected and provide complementary services to clients; the second is a significant participant of FinTech in the PropTech ecosystem, which provides financial support for real estate transactions. To verify it, an analysis of the essence and evolution of PropTech, factors influencing the development of PropTech, and based on the results, a definition and composition of the PropTech ecosystem were proposed, threats and opportunities for the development of financial services within the PropTech ecosystem were identified. To achieve this aim, a set of methods was applied. The use of a systemic approach made it possible to identify technical, economic, social

and psychological factors of the PropTech emergence. The graphical method helped to clarify the PropTech capabilities in terms of geographical coverage of consumers with its services. The use of comparative analysis formed the basis for revealing the advantages and disadvantages of providing PropTech financial services, threats and opportunities for further development of financial services within the PropTech ecosystem.

The main part of the research consists of three sections: the first is devoted to a description of the factors influencing the PropTech development and a systematization of the characteristics of the PropTech evolution stages; the second is an analysis of the state of PropTech in the world; the third is a definition of the composition of the PropTech ecosystem, the place of financial services in it, and PropTech development trends.

1. The evolution of PropTech: from PropTech 1.0 to PropTech 4.0

Digitalization is gradually covering all spheres of human life. One of the first to actively implement digital technologies was the financial services market. This process was called as FinTech. At the same time, the real estate market, which is the largest type of asset in terms of volume, was one of the last to begin technological transformations. PropTech, like FinTech, TravelTech, GovTech, HealthTech, CivilTech, RetailTech, LegalTech, is a type of EverythingTech (Mazaraki & Volosovich, 2021, p. 7). They all use the same tools and are characterized by interpenetration to a certain extent.

Factors influencing the PropTech development can be divided into economic, technological, social and psychological. Among the economic factors are:

- permanent growth of the real estate market (*Figure 1*);
- growth in global gross product;
- growth in demand for smart homes;
- growth in coworking and flexible spaces;
- growth in demand for real estate rental.

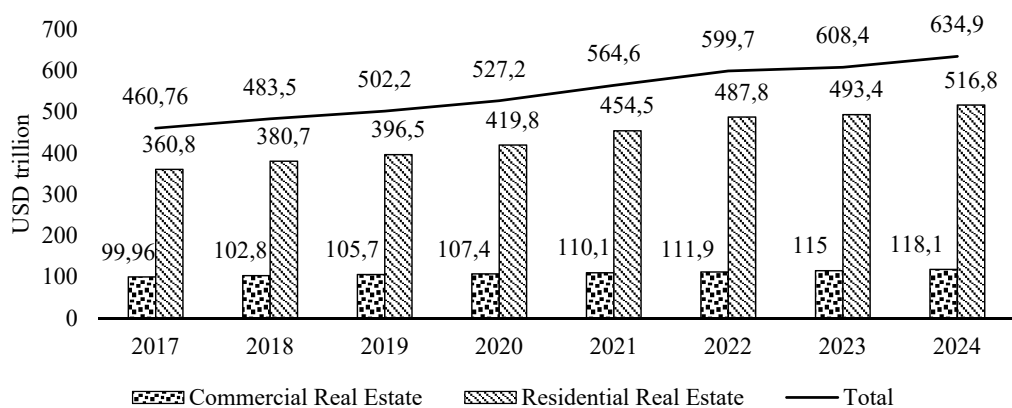


Figure. 1. Total value of the global real estate market, commercial and residential real estate in 2017–2024

Source: compiled by the authors according to (Statista, 2024, July).

Technological factors involve the widespread introduction of such information technologies in the real estate market as: artificial intelligence, the Internet, virtual reality, machine learning, and predictive analytics. The social and psychological factors of PropTech development are based on customer preferences. These include:

- the entry into the real estate market of Z generation and millennials, who rely on the Internet and social networks when making decisions;
- the tendency of real estate market participants to adopt technological innovations;
- increasing customer requirements for the environmental friendliness of real estate and its equipment with modern automation systems.

The PropTech evolution involves the identification of four stages: emergence, maturity (Internet revolution), improvement, development of sustainable and smart property (*Table 1*).

Table 1

PropTech development stages

Stage	Period	Technological basis	Characteristics
PropTech 1.0 Inception	The second half of 1980–2007	Implementation of local software in the activities of real estate market participants	The adoption of property management software, customer relationship management systems and financial analysis tools based on personal computers by real estate market participants to some extent contributed to creating a basis for the digitalization of the real estate market. The next important steps were the introduction of Excel for data organization and analysis and B2C PropTech products or online real estate portals in the real estate market, which helped to expand the capabilities of clients to quickly and efficiently find properties that meet their needs. Subsequently, such solutions became the industry standard. Key PropTech companies: Autodesk (innovation in construction technology), Argus (innovation in investment management), CoStar Group (a leading provider of information and analytics for the commercial real estate industry), Rightmove and Trulia (online real estate portals)
PropTech 2.0 – Maturity (Internet evolution)	2008–2015	Widespread use of local software by real estate market participants, which helps to match supply and demand through social networks and e-commerce	The activation of PropTech is due to the global crisis of 2007–2008, one of the reasons for which was problems in the real estate market. The decline in trust in traditional processes in the real estate market, the formation of a multi-platform environment, the availability of smartphones contributed to the introduction of open application programming interfaces (APIs) and mobile applications, which gave customers instant free access to information on the real estate market. Against this background, there was a PropTech boom: investments are growing, new companies are emerging, and existing companies are being consolidated
PropTech 3.0 – Improvements	2016–2021	Real estate software is becoming a growing service	This stage is characterized by the use of information technology aimed at improving customer service and the functioning of other participants in the real estate market. PropTech 3.0 has become more socially oriented, transforming the use of technology to the needs of the client. This has led to the fact that interfaces have become smarter and more convenient. PropTech 3.0 began with the deepening use of artificial intelligence in the analysis of big data, the introduction of machine learning and blockchain. During this period, there has been a decline in investment in PropTech

End of Table 1

Stage	Period	Technological basis	Characteristics
PropTech 4.0. Development of sustainable and smart property	From 2022 to present	Focus on technological solutions aimed at combating climate change and automating processes in real estate maintenance	The impetus for this phase was provided by the Covid-19 pandemic, which caused challenges for the real estate market due to social distancing and related restrictions. The characteristic features of PropTech 4.0 were: <ul style="list-style-type: none"> • the widespread use of virtual reality, which creates new opportunities for visiting and demonstrating real estate; • the emergence of GreenTech within PropTech; • the activation of the use of the Internet of Things; • the spread of blockchain technology, which ensures transparency of real estate transactions; • the growth of investments in PropTech

Source: compiled by the authors on the basis of (Stypułkowski, 2020, May 14; Snow, 2023, April 29; PropTechBuzz, 2024, April 6; Gambero, 2021, December 3; University of Oxford Research, 2020) and own research.

Thus, in its development, PropTech has moved from the application of certain information technologies in the real estate market to their widespread use. The introduction of information technology was driven by the preferences of customers who, on the one hand, require convenience and speed of service, and, on the other hand, environmental friendliness of housing.

2. State of the global PropTech market

PropTech is now fully integrated into the global and regional real estate markets, despite not so long ago being considered a latecomer to EverythingTech. *Figure 2* shows that 5% of real estate companies worldwide have transitioned to modernized software systems that easily leverage modern digital technologies, while 64% of companies have to some extent upgraded their software systems to enable them to leverage digital technologies.

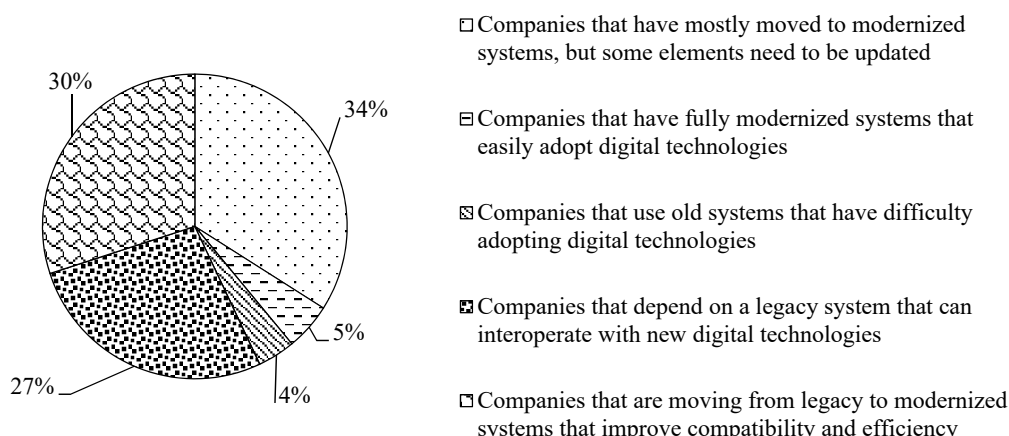


Figure 2. The structure of real estate companies in the world in terms of the use of digital technologies in 2023

Source: compiled by the authors based on (Statista, 2024, July 1).

In 2022, the global PropTech market was worth \$24.9 billion and continues to grow. In 2023, the PropTech market reached \$27.3 billion. According to Fortunebusinessinsights (2024, November 4), the PropTech market is expected to grow by 15% between 2024 and 2032. The PropTech markets of the United States, China, the United Kingdom, Germany, and Switzerland attracted the largest amount of investment during 2012–2023 (Figure 3).

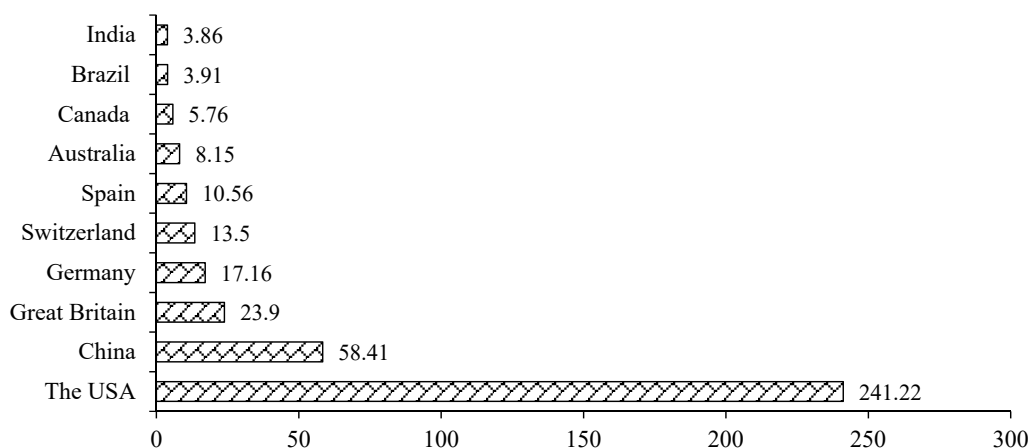


Figure 3. Top 10 countries in terms of investment in PropTech in 2012–2023

Source: compiled by the authors based on (ESCP Business School and the Principality of Monaco, 2023).

Currently, there are over 9,000 PropTech companies in the world (Ascendix, 2024, June 13). Figure 4 presents their regional structure. The largest share of PropTech companies is located in the USA, followed by Europe. The share of companies in other regions is still insignificant in the global PropTech market.

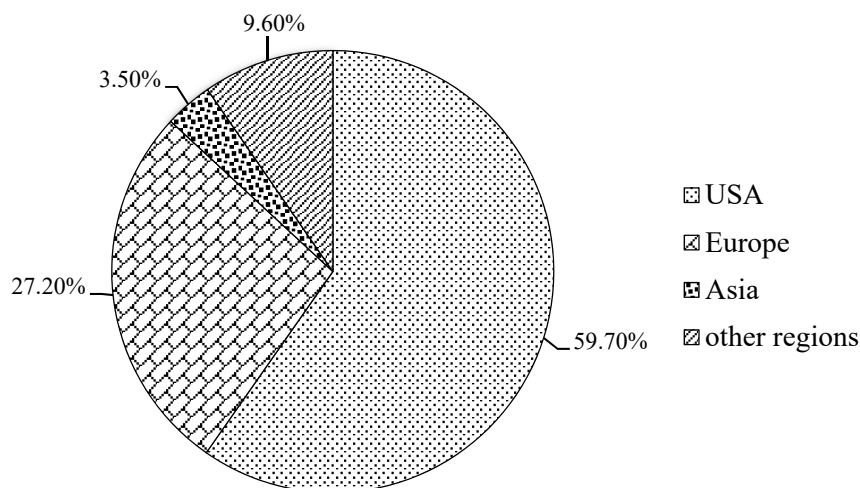


Figure 4. Regional structure of PropTech companies

Source: compiled by the authors based on (Ascendix, 2024, November 14).

In 2023, the PropTech following components were of the greatest interest to investors (CRETI, 2024, April 11):

- commercial real estate – 60% of investors;
- residential real estate – 50% of investors;
- construction technologies (CoTech) – 45% of investors.

Figure 5 shows the sectoral structure of PropTech.

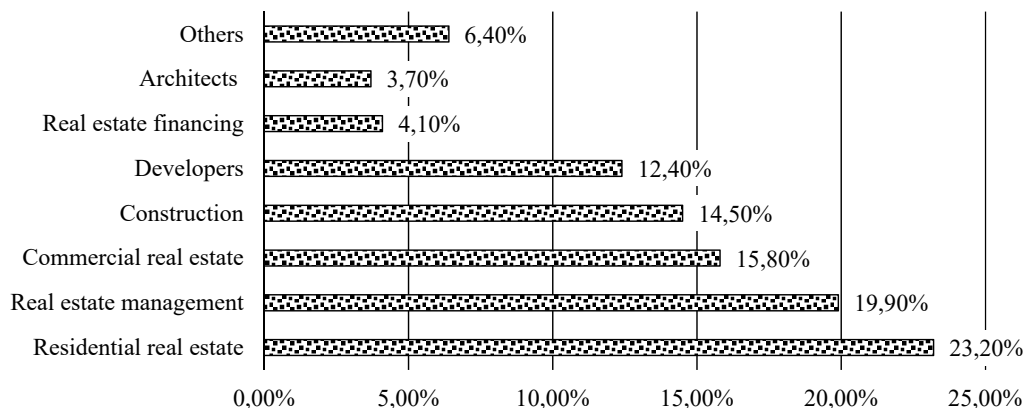


Figure 5. Sectoral PropTech structure

Source: compiled by the authors based on (Brocoders Dev Insights, 2021, June, 12).

The largest shares in PropTech are held by the residential real estate (23.2%) and property management (19.9%). Significant shares are also held by the commercial real estate (15.8%) and construction sectors (14.5%). The real estate financing sector accounts for only 4.1%. However, the role of financial services in PropTech is much greater, since, in addition to investment services, the real estate market provides payment, credit and insurance services, without which transactions in the market are often impossible. The diverse composition of PropTech sectors and the close interaction of their participants necessitate the need to emphasize that they all function within a single ecosystem.

3. PropTech ecosystem: components and development trends

The permanent growth of the number of Internet users determines the increase in PropTech's capabilities to cover significant segments of the real estate market. Under these circumstances, PropTech is transforming into a powerful ecosystem that contributes to the formation of the chain "construction" – "purchase/sale/lease offer" – "client consulting" – "financial and legal services". *Figure 6* presents the components of the PropTech ecosystem. Its core is online platforms that, through the use of information technologies, ensure the interaction of ecosystem participants: investors, tenants, owners, real estate buyers, developers, real estate agencies, startups, FinTech companies and financial institutions, notaries and others. These participants belong to various industries and spheres, in particular, the construction, real estate market, financial services market, IT sphere.

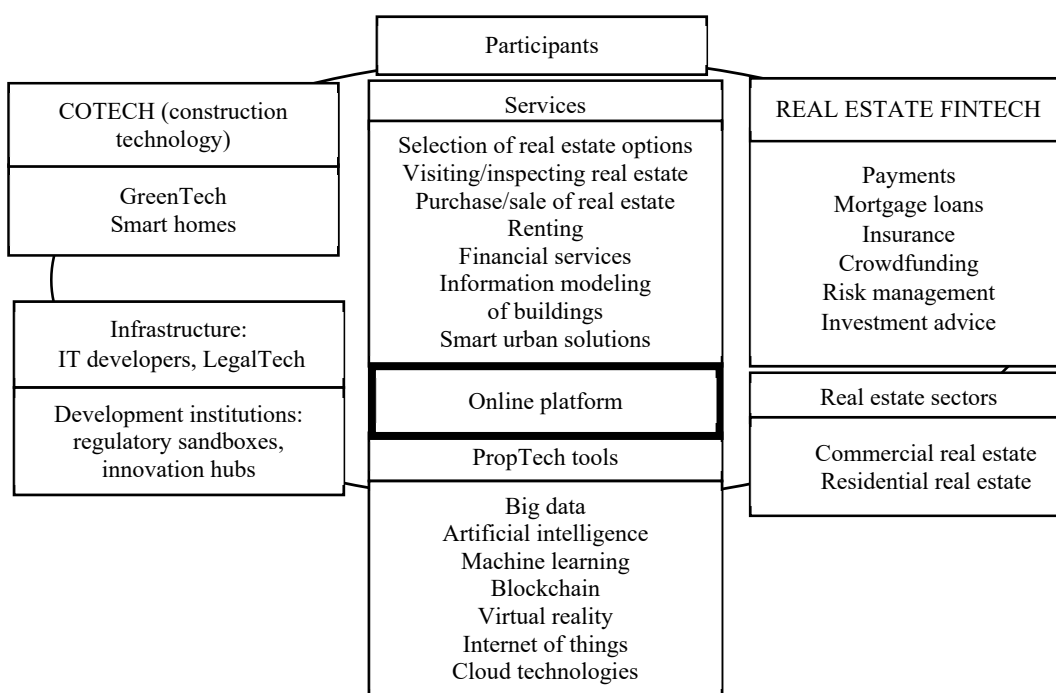


Figure 6. PropTech ecosystem

Source: compiled by the authors based on their own research

The provision of financial services within the PropTech ecosystem has technical, economic and social prerequisites. The basis of the technical prerequisites is the permanent growth of Internet users; the use of the same information technologies in the real estate market and in the FinTech sector; platformization of the financial market and the real estate market.

Economic prerequisites form the complementary nature of financial services in relation to other transactions in the real estate market and low payments or their absence for financial services within the FinTech framework. The social prerequisite for the provision of financial services within the PropTech ecosystem is the increase in the level of acceptance of innovative technologies by consumers.

FinTech Real Estate within the PropTech ecosystem provides:

- provision of payment services when carrying out real estate transactions;
- provision of mortgage loans through lending platforms. At the same time, underwriting is carried out based on artificial intelligence and machine learning when making lending decisions;
- fundraising through platforms based on investment crowdfunding;
- managing risks in the real estate sector by minimizing them when assessing the value of real estate using automatic valuation models in real time;
- optimizing the record-keeping of property rights and other real estate transactions together with monitoring the history of ownership using blockchain technology;

- providing insurance services that accompany mortgage lending services, in particular, insurance of the mortgage subject, life, health and work capacity of the mortgagee, title learning and predictive analytics;
- providing advisory services to clients by robo-advisors through automated investment platforms;
- informing about real estate prices depending on its types in real time based on machine.
- investing in real estate investment trusts through platforms.

The provision of financial services within the PropTech ecosystem has its strengths and weaknesses, carries certain threats and has opportunities for development insurance (*Table 2*).

Table 2

Swot analysis of financial services in the PropTech ecosystem

<i>Strengths</i>	<i>Weaknesses</i>
24/7 access to real estate market information	The use of digital technologies may be too expensive for small real estate market participants.
Provision of financial services that are complementary to real estate transactions	Insufficient level of trust and technical literacy of individual real estate market participants.
Automation of property management and transaction processing	Insufficient compliance with data security and privacy laws.
Reduction of transaction costs for clients	The need to train staff to use digital platforms and information.
Reduction of operating costs for real estate agencies	
No geographical restrictions	
<i>Opportunities</i>	<i>Threats</i>
Rapid adaptation of financial services to the needs of ecosystem participants	Variability in customer preferences.
Ensuring transparency of transactions in the real estate market	Increased innovation spending in certain CoTech segments.
Reducing credit and investment risks in real estate transactions	Lagging behind rapidly evolving digital technologies and customer expectations.
Reducing costs through automation and decision-making based on big data analysis	Limitation of PropTech growth due to data privacy breaches and cyber threats.
Quick access of clients to credit resources	
Increasing the efficiency of communications between real estate market participants	

Source: compiled by the authors on the basis of (Fortunebusinessinsights, 2024, November 04; Saha, 2023) and own research.

In our opinion, the trends in the development of PropTech ecosystems should be:

- increased collaboration between its participants, which will contribute to increasing the efficiency of developments and the adequacy of meeting customer needs;
- increasing the role of GreenTech in the ecosystem, taking into account the growing needs of society in environmental protection and energy efficiency;

- increasing the integration of financial technologies into PropTech, which is based on the need for fast payments, attracting loans, and the security of investments in real estate;

- increasing the globalization of the functioning of ecosystems, which will facilitate user access to the real estate market and facilitate financial transactions related to transactions on it.

So, although PropTech and FinTech are independent sectors of Everything Tech, the globalization and digitalization of the real estate market and the financial services market lead to a deepening collaboration between their participants.

Conclusions

The results of the research confirmed the hypotheses regarding the PropTech transformation into an ecosystem and the collaboration of PropTech with FinTech, which provides financial support for real estate transactions. In the context of digitalization of the real estate market, it is transformed into a PropTech ecosystem, which from an institutional point of view it has been proposed to consider as an interacting set of real estate sectors, CoTech, FinTech, infrastructure and development institutions, which allows providing services to users in the real estate market and complementary services, in particular financial services, in global markets through digital platforms. This expands the understanding of the PropTech ecosystem (Meduoye, 2024). It was found that the emergence of PropTech was facilitated by economic, technological, social and psychological factors, which determined four stages in the development of PropTech: emergence, maturity, improvement, development of sustainable and smart property. The development of information technology and consumer needs has transformed software in the real estate market into a service and ensured the orientation of technological solutions to combat climate change and automate processes in real estate maintenance. PropTech companies mostly have generally updated software, which allows the use of modern information technologies. The provision of financial services within the PropTech ecosystem has technical, economic and social prerequisites. The technical prerequisites are based on the permanent growth of Internet users; the use of the same information technologies in the real estate market and in the FinTech sector; platformization of the financial market and the real estate market. The conducted research made it possible to find out that the provision of financial services within the PropTech ecosystem is due to their complementary nature in relation to other transactions in the real estate market, price attractiveness, increased customer confidence and compatibility of PropTech and FinTech tools. Further interaction of the real estate market and the financial market can change consumer behavior through the integration of financial services into PropTech. At the same time, PropTech ecosystems will become global. Future scientific research should establish measures to strengthen the protection of consumers of financial services within PropTech ecosystems.

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FORECASTING THE STABILITY OF THE BANKING SECTOR

A new methodological approach to forecasting stress periods in the banking sector based on the use of logistic regression is considered. The model takes into account the critical shortcomings of traditional banking stability indices, which are mainly descriptive tools and do not have the predictive potential necessary for proactive risk management. It is hypothesized that existing macroeconomic and bank performance indicators cannot adequately predict the stability of the banking sector, since they mostly reflect previous and current conditions, rather than future risks or stress periods.

Using annual changes in key bank balance sheet indicators, the proposed model provides an effective forecasting system with reliable performance indicators. A key feature of this research is its ability to identify the most significant indicators contributing to stress in the banking sector, especially under martial law. The model identified other critical factors of bank activity that significantly affect the level of stress, including capital adequacy, liquidity ratios, and the structure of assets and liabilities, which should be prioritized in the monitoring system. The forecasts of stress periods obtained using the model which demonstrates significant correlation with the indicators of the Financial Stress Index (FSI) of the National Bank of Ukraine, confirming its reliability. However, such a model goes further, offering practical conclusions that allow regulators to anticipate stress events, and not just analyze them retrospectively. In addition, the research offers a practical method for using open data provided by the NBU to conduct such forecasting researches, ensuring transparency and reproducibility.

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ПРОГНОЗУВАННЯ СТАБІЛЬНОСТІ БАНКІВСЬКОГО СЕКТОРУ

Розглянуто новий методологічний підхід до прогнозування стресових періодів у банківському секторі на основі застосування логістичної регресії. Модель враховує критичні недоліки традиційних індексів банківської стабільності, які є переважно описовими інструментами і не мають прогностичного потенціалу, необхідного для проактивного управління ризиками.

Висунуто гіпотезу, що наявні макроекономічні показники та показники діяльності банків не можуть адекватно прогнозувати стабільність банківського сектору, оскільки вони здебільшого відображають попередні та теперішні умови, а не майбутні ризики чи стресові періоди.

Використовуючи річні зміни ключових показників балансу банків, запропонована модель забезпечує ефективну систему прогнозування з надійними показниками ефективності. Ключовою особливістю цього дослідження є його здатність визначати найбільш значущі індикатори, що сприяють стресу в банківському секторі, особливо в умовах воєнного стану. Модель виявила інші критичні фактори діяльності банків, які суттєво впливають на рівень стресу, зокрема достатність капіталу, нормативи ліквідності та структура активів і пасивів, які мають бути пріоритетними в системі моніторингу. Прогнози стресових періодів, отримані за допомогою моделі, демонструють значну кореляцію з показниками Індексу фінансового стресу (ІФС) Національного банку України, що підтверджує її надійність. Однак така модель йде далі, пропонуючи практичні висновки, які дають змогу регуляторам передбачати стресові події, а не лише аналізувати їх ретроспективно. Крім того, дослідження пропонує практичний метод використання відкритих даних, наданих НБУ, для проведення подібних прогностичних досліджень.



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By integrating publicly available datasets, the study demonstrates a scalable approach that can be adapted to other contexts. The research results contribute to the field of financial stability research by bridging the gap between descriptive analysis and predictive modeling, providing regulators with a powerful tool for timely interventions and mitigating systemic risks in the Ukrainian banking sector during periods of heightened uncertainty.

Keywords: banking sector stability, banking supervision, financial stress, integral stability index.

JEL Classification: G21, G28.

забезпечуючи прозорість та відтворюваність. Інтегруючи загальнодоступні набори даних, дослідження демонструє масштабований підхід, який може бути адаптований до інших контекстів. Результати дослідження роблять внесок у сферу досліджень фінансової стабільності, долаючи розрив між описовим аналізом та прогнозним моделюванням, надаючи регуляторам потужний інструмент для здійснення своєчасних інтервенцій та пом'якшення системних ризиків у банківському секторі України в періоди підвищеної невизначеності.

Ключові слова: стабільність банківського сектору, банківський нагляд, фінансовий стрес, інтегральний індекс стабільності.

Introduction

Banking sector stability is a cornerstone of economic resilience, especially in economies facing heightened uncertainty, such as in Ukraine during martial law. However, existing banking stability indices, in particular the Financial Stress Index (FSI) of the National Bank of Ukraine (NBU, n. d.), are largely descriptive in nature. While these indices effectively reflect the historical state of the banking sector, they lack the ability to predict future periods of stress. This limitation reduces their usefulness for proactive decision-making by regulators and stakeholders.

The research aims to address these gaps by developing a methodological approach to forecasting banking sector instability. Using annual changes in key balance sheet indicators and predictive analytics, a model is presented that aims to forecast periods of stress with high accuracy and practical implications. This approach is a significant step towards creating an index that will allow regulators to take preventive measures, ensuring the stability and resilience of the banking sector in volatile conditions.

In recent years, much research has been conducted on the development of indices to measure and predict the stability of the banking and financial systems. These indices often serve as an integral part of early warning systems (EWSs), which can prevent financial crises and support the resilience of financial institutions. The researches of scholars present different methodologies and ideas for constructing and implementing these indices in different regions, each of which considers unique economic conditions and specific data limitations.

Before proceeding to the analysis, it is important to understand what the modeling results will be aimed at. First of all, there are theoretical works by national scholars that provide a detailed explanation of the concept of "stability".

In their work, Yevtukh and Shved (2016) highlight important features of a stable banking system, emphasizing the absence of bank failures, profitability, compliance with national legislation, and resilience to external

shocks. There is also a discussion of the role of state regulators in identifying and improving the banking system. The emphasis on the historical and cultural evolution of banking systems in developed countries is particularly valuable, as it illustrates how legal norms, customs, and economic policies have shaped their resilience over the centuries. However, the text does not delve into quantitative methods or specific indicators that could be used to systematically assess and measure banking stability.

Chkheailo and Kukhar (2022) have made a significant contribution to this field by developing a model for assessing the health of individual banks. Although the calculations presented in their study cannot be directly applied to the assessment of the entire banking system, the indicators they propose are very valuable for analyzing financial stability. Their research, which focuses on bank stability under martial law, highlighted that the financial stability index of a bank is insufficient for stable functioning. The authors recommend prioritizing key factors affecting financial stability, such as equity, liquid and working assets, liabilities (both short-term and long-term), and authorized capital, in order to increase overall stability.

A more complete set of indicators related to the stability of the entire banking sector is presented by Pogorelenko and Sydorenko (2011). Their work deepens the concept of "financial stability", offers a detailed analysis of its content, and summarizes modern methods of risk analysis and assessment. The authors emphasize the importance of improving the system for monitoring the stability of the banking sector as a proactive measure to prevent financial crises. This aspect is especially relevant in the context of globalization of the world economy, when monitoring systemic risks in both the financial system and the banking sector is becoming paramount. The International Monetary Fund has also made a significant contribution to this area by developing a system of financial stability indicators. This system has 12 core indicators and 28 recommended indicators covering sectors such as deposit-taking corporations (banks), other financial corporations, non-financial corporations, households, the liquidity market, and the real estate market. Pogorelenko and Sydorenko's emphasis on a systemic approach to monitoring, combined with the IMF's indicator framework, provides a solid foundation for developing effective tools to assess and ensure financial stability at the macroeconomic scale.

Cheang and Choy's (2011) paper on the Aggregate Financial Stability Index (AFSI) for Macau highlights the importance of monitoring financial stability for early intervention in times of potential crisis. The authors emphasize that an index that reflects the system-wide financial condition over time can provide insights into the emergence of financial stress, which is of practical importance to regulators. While the Macau AFSI effectively captures stressful moments in the region's financial history, limitations in the interpretation of such indices are acknowledged, suggesting that the aggregate index should be used with caution and in conjunction with other indicators.

Similarly, the research by Albulescu and Goyeau (2010) on the Romanian financial system considers the construction of the AFSI to provide a transparent and practical method for assessing systemic financial stability. This work is particularly valuable for its structured approach, which details the methodological steps required to construct the index, such as the selection of indicators and the application of weighting methods. The results of the research suggest that the AFSI not only allows for tracking the dynamics of stability, but also helps to identify periods of stability, instability and crisis. This methodology offers repeatable findings that can be adapted to different financial systems, although it is also data-dependent and the choice of indicators requires customization based on system-specific factors.

Koop and Korobilis (2014), considering a dynamic index of financial conditions for the US financial system, suggest a more flexible approach to constructing the index. By using techniques such as dynamic model selection (DMS) and dynamic model averaging (DMA), the index adapts to changing conditions in the financial sector and the economy as a whole. This approach is particularly relevant in dynamic and complex financial environments such as the United States, where variable selection and weighting must reflect current economic realities. Their emphasis on flexible methodology is a valuable achievement, although it may be difficult to apply in environments with less complete data availability.

Meanwhile, Sere-Ejembi et al. (2014) study on the Banking System Stability Index (BSSI) in Nigeria shows how stability indices can reflect the resilience of the regional banking environment to shocks. The Nigerian BSSI has successfully captured crisis episodes, including the intervention of the Central Bank of Nigeria in 2009, and has served as a signal of potential instability. However, the authors identify limitations, particularly in retrospective indicators and sample size that may affect the index's predictive accuracy. The study's recommendation for using the BSSI as a regulatory tool highlights its potential as a precautionary tool, although it also stresses the need to improve the availability and quality of data to increase the reliability of the index.

Some issues of financial stability in the context of financial policy have also been considered by scholars Chugunov (2023), Gusarevych (2023), Pasichnyi et al. (2023).

In all these studies, the advantages of stability indices are clear; their authors offer a quantitative tool for assessing financial stability and identifying vulnerabilities. However, there are also shortcomings, including data limitations, methodological adaptation to different financial environments, and the need for continuous improvement. Taken together, these findings indicate that while financial stability indices play an important role in providing early warning and assessing the health of the financial sector, they need to be complemented by other regulatory measures and qualitative analytical data to ensure a comprehensive approach to financial stability.

Several models are usually used to assess the financial stability of the banking system. The following approaches are widely used in international practice (Dzyublyuk et al., 2014):

rating systems (e.g. CAMELSO, PATROL, ORAP) provide a comprehensive assessment of financial stability, but are limited by their subjective nature and applicability only for real-time assessment;

statistical models (e.g. FIMS, SAABA) include various data sets and influencing factors in the analysis, but are often expensive to implement;

ratio analysis systems (e.g. BAKIS) effectively identify general trends in the banking sector, but require large and detailed studies to obtain meaningful conclusions;

comprehensive banking risk assessment systems (e.g. RATE, RAST) take into account various influencing factors, but, as a rule, do not make their conclusions publicly available.

One of the most famous aggregated financial stability indices is the banking Z-Score. This indicator is calculated as the sum of the bank's capital-to-asset ratio and return on assets divided by the standard deviation of return on assets. The basic principle of the Bank Z-Score is that a banking system is considered stable when the probability of losses exceeding its capital is minimized. However, its application in the Ukrainian context poses certain difficulties, primarily due to the significant delay between the calculation of this indicator by World Bank experts and its final publication. In addition, since the indicator is usually calculated on an annual basis, obtaining quarterly or monthly values requires significant additional calculations.

One of the significant shortcomings is that many existing models are based on indicators of the current state of the banking system, rather than tools for predicting future stresses. These indices often lack the methodological basis necessary to predict potential crises, which limits their usefulness in proactive risk management of banks. In order to fill this gap, we have proposed a forecasting model that allows us to solve the classification problem, in which class 1 is predicted as a stressed period, 0 as a normal one, offering clear predictive value. Such an approach not only expands the possibilities of monitoring the stability of the banking system, but also provides a reliable basis for predicting stressed periods, thus contributing to more effective decision-making and risk mitigation.

The aim of the research is to develop a model for predicting the stability of the banking sector based on the corresponding aggregated index.

The research hypothesis is that it is impossible to predict the stability of the banking sector using existing macroeconomic and bank performance indicators, as these indicators mainly reflect previous and current conditions and do not provide sufficient prediction of future risks or stressful periods.

The methodology uses logistic regression to predict banking sector stability by modeling the relationship between selected indicators and the likelihood of financial stress. Logistic regression is a statistical method that estimates the probability of a binary outcome (e.g., stress or no stress) based on predictor variables, assigning regression coefficients to each indicator to

quantify their impact and significance. Indicators with higher absolute coefficients and low p-values (less than 0.05) are identified as the most significant for predicting stress. In the results of logistic regression, the z-score shows how many standard deviations the coefficient differs from zero, providing a measure of the significance of each predictor in explaining the binary outcome. Regression outputs a probability score for each observation, classifying it as 1 (stress) or 0 (no stress) based on a predefined threshold, thus providing a reliable basis for detecting periods of instability. The class 1 prediction probability is an index.

The main part of the research consists of three sections: a general description of the methodology for building a predictive model for the basis of linear regression, a description of the input indicators and the feasibility of their use, the forecasting result, and the interpretation of the calculation results.

1. Description of the proposed forecasting model

We propose the methodology for calculating the aggregated stability index of the banking sector of Ukraine, based on the use of financial aggregated data of the banking system of Ukraine, which includes balance sheet and other indicators of bank activity. This methodology is designed to forecast financial stress in the next month by analyzing changes in these indicators in the current month. Such a dynamic approach allows us to determine an index that reflects changes in the banking sector, which can potentially serve as an early warning of its financial stress.

The calculation of the index begins with the aggregation of monthly data on balance sheets, financial ratios and a report on balance sheet balances and key indicators of the activities of Ukrainian banks. This aggregated data set forms a cumulative monthly state of the overall financial activity of the sector. Taking into account monthly changes, the goal of the model is to identify early signs of potential stress in the banking system. Significant fluctuations in key indicators, such as liquidity ratios, capital adequacy or credit risk indicators, are indicated as signals of increased risk of instability.

To determine the specific impact of each variable on the likelihood of future financial stress, regression analysis uses weighting factors. Thus, key indicators, including liquidity, capital adequacy and credit risk ratios, are prioritized according to their significance in the forecast model.

To predict whether a sector will experience stress in the next month, we use a logistic regression model in which the outcome variable (Y) indicates whether the next month is classified as "stressed" (1) or "non-stressed" (0). The classification is based on predefined financial stress thresholds calibrated to detect variations in risk intensity, in particular:

- a month is classified as stressed ($Y=1$) if the financial stress index exceeds a threshold of 0.034 under normal conditions;
- during periods of increased risk, the threshold for classifying a month as stressed increases to 0.16.

Using logistic regression and dynamic indicator analysis, the methodology improves the accuracy of financial stress forecasting, offering

stakeholders a practical tool for early detection and mitigation of risks. This approach not only improves the monitoring of banking sector stability, but also highlights the importance of adaptive thresholds to account for the unique dynamics of the Ukrainian financial system, especially during periods of heightened uncertainty

2. Description of the indicators used

The independent variables (X) in the model cover a wide range of financial indicators aggregated from the banking sector. They are the loan-to-deposit ratio, the operating income-to-operating expenses ratio, the foreign currency assets-to-foreign currency liabilities ratio, the non-performing loans-to-equity ratio, the return on assets (ROA), the return on equity (ROE), funds with the National Bank of Ukraine, government bonds, funds of non-resident non-bank financial institutions, loans to non-residents, term deposits of other non-resident banks and loans received from other non-resident banks, total assets of non-residents (excluding reserves for active operations) and reserves for active operations of banks – selected for a comprehensive assessment of the financial soundness, credit risk, liquidity, operational efficiency and external risks of the Ukrainian banking sector.

Each of these ratios serves as a basis for assessing the financial strength, liquidity, efficiency and external risks of banks, which are crucial factors in predicting the likelihood of financial stress. For example, the loan-to-deposit ratio reflects liquidity and credit risk, with higher values indicating a potentially stressed state, while the operating income-to-operating expense ratio signals operational efficiency, with a higher figure indicating better financial health and ability to manage costs. The ratio of foreign currency assets to foreign currency liabilities provides an indication of currency risk; an unbalanced currency position can lead to significant vulnerability in unstable conditions. The ratio of non-performing loans to capital measures credit risk by comparing non-performing loans to capital, where a high ratio indicates solvency problems. Return on assets and return on equity measure the profitability and efficiency of asset use, indicating a bank's ability to generate profits and maintain sustainability. Funds at the National Bank are a critical liquidity buffer that can support banks in times of stress, enhancing their stability. A sharp change in them may mean that banks require liquid funds to cover current needs, which may be especially relevant in times of stress/crisis. Government bonds serve as a stabilizing asset, especially during martial law, as they offer banks the opportunity to receive stable income in conditions of uncertainty in the lending market. Risk to non-residents through indicators such as funds of non-resident non-bank financial institutions, loans granted to non-residents and total assets of non-residents indicate foreign dependence and vulnerability to changes in international financial markets. Such dynamics are especially relevant in times of martial law, when foreign capital is more likely to react quickly to risks, which enhances its role in identifying periods of financial stress. Ultimately, reserves for active operations indicate the availability of resources to cover expected losses due to the occurrence of risks.

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Given the representativeness and significance of these indicators, the implementation of these indicators in a multifaceted model for assessing the monthly probability of financial stress allows for the early identification of vulnerabilities in the banking sector.

3. Results of modeling

The model for forecasting the stability of the banking sector is summarized in the following *Table* and *Figure 1*.

Table

Correlation calculation results of the influence of individual variables on the probability of financial stress in the banking sector of Ukraine

Indicator	Regression coefficient	Standard error	z-coefficient	p-Indicator	Confidence interval. Lower limit	Confidence interval. Upper limit
Constant	-8.3539	2.568	-3.253	0.001	-13.388	-3.32
Loan to deposit ratio	3.5496	7.82	0.454	0.65	-11.777	18.877
Operating income to operating expenses ratio	2.683	1.976	1.358	0.175	-1.19	6.556
Foreign currency assets to liabilities ratio	-50.9382	35.737	-1.425	0.154	-120.982	19.106
Non-performing loans to equity	-6.0106	5.092	-1.18	0.238	-15.99	3.969
ROA (return on assets)	-4.5957	1.525	-3.013	0.003	-7.585	-1.606
ROE (return on equity)	4.5623	1.514	3.014	0.003	1.595	7.529
Funds in the NBU	4.9227	1.632	3.017	0.003	1.725	8.121
Government bonds	10.076	5.184	1.944	0.052	-0.084	20.236
Funds of non-bank financial institutions-non-residents	0.0928	0.466	0.199	0.842	-0.821	1.007
Loans granted to non-residents	6.3848	3.731	1.711	0.087	-0.928	13.698
Term deposits of other non-resident banks and loans received from other non-resident banks	-10.0759	4.298	-2.344	0.019	-18.5	-1.652
Total assets of non-residents (not adjusted for reserves for active operations)	8.7488	3.671	2.383	0.017	1.554	15.943
Reserves for active operations of banks (including reserves for operations recorded in off-balance sheet accounts)	-24.8814	10.977	-2.267	0.023	-46.397	-3.366

Source: calculated by the author

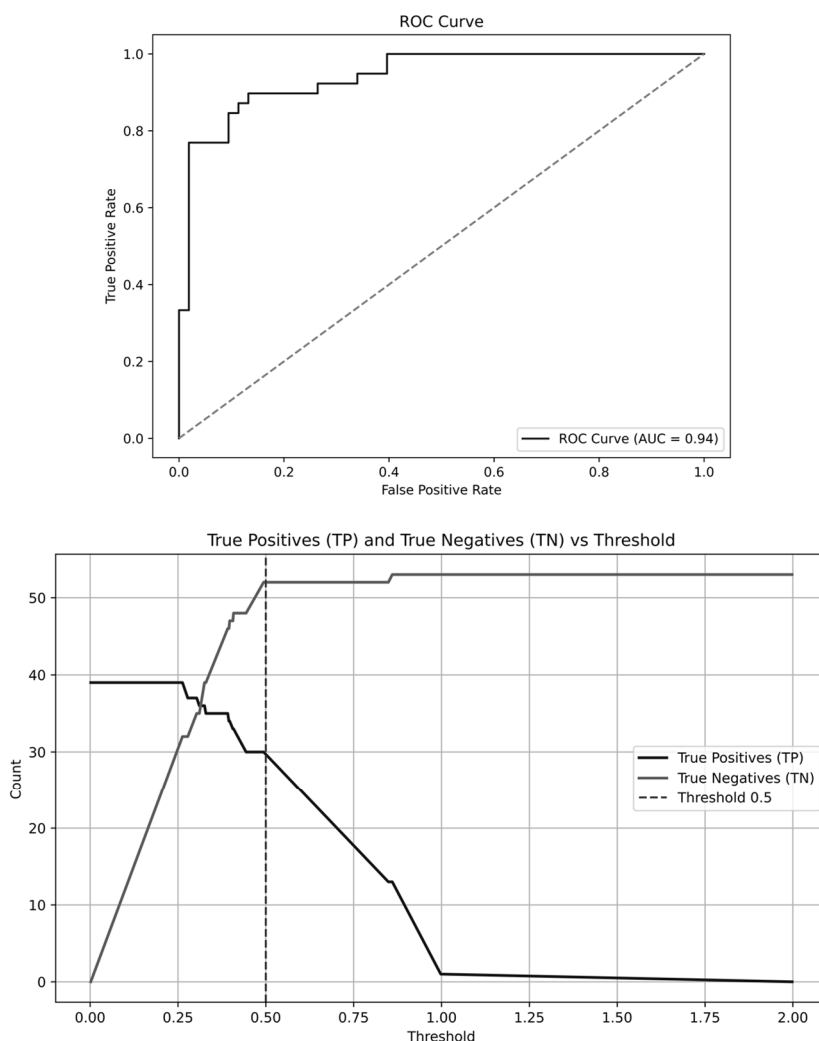


Figure 1. AUC-ROC curve and TPR, TNR indicators for logistic regression results

Source: calculated by the author.

The logistic regression model demonstrated robust performance, achieving an overall accuracy of 88.04% and an AUC (area under the receiver operating characteristic curve) of 94%, indicating a high discriminative ability to distinguish between stressful and non-stressful periods. The model accuracy is 96%, confirming its high ability to correctly identify stressful periods among predicted positive cases. The recall coefficient of 74% reflects the model's effectiveness in detecting 74% of actual stressful periods. The F1 indicator, which balances accuracy and recall, was calculated at 84%, indicating a balanced performance in predicting both positive and negative classes.

The chosen threshold of 50% was found to be the most optimal for achieving a balanced and accurate forecast. These results highlight the robustness of the model and its practical suitability for forecasting purposes, especially in scenarios requiring early detection of potential stress in the

banking sector. The high AUC and accuracy rates indicate that the model is able to minimize false predictions, while the repeatability rate ensures that a significant proportion of true stress periods are detected. Overall, the model offers a powerful tool for forecasting and effectively responding to the occurrence of stress situations, which can be used by various stakeholders.

Based on the results of the logistic regression, the importance of each indicator in predicting a stress period for the banking sector can be assessed using regression coefficients and p-values. Indicators with a smaller p-value (usually <0.05) are considered statistically significant, indicating a stronger relationship with the probability of a stress period. Below is a breakdown of which indicators appear to be more influential and which are less so.

Significant indicators (p-value < 0.05).

The constant has a significant negative coefficient (-8.3539 , $p=0.001$), indicating that without other factors there is a low baseline probability of a stress event.

Return on assets (ROA): The ROA coefficient (-4.5957 , $p=0.003$) is negative and significant, which supports the thesis that lower return on assets is associated with an increased probability of stress. In the case when banks receive lower return on assets, this may be a precursor to stress.

Return on equity (ROE): The ROE coefficient (4.5623 , $p=0.003$) is positive and significant. In this model, a higher ROE is associated with a higher probability of a stress event. After all, banks that strive primarily to achieve a higher return on equity quite often generate a high risk appetite, which makes them more vulnerable to stress.

The indicator of bank debt to the NBU: has a significant positive coefficient (4.9227 , $p=0.003$). Higher values of this indicator occur when banks rely more on central bank support, which may signal their instability.

The significant negative value of term deposits from other non-resident banks and loans received from non-resident banks (-10.0759 , $p=0.019$) suggests that higher liabilities from non-resident banks may correlate with stress, since a bank's dependence on foreign financing is usually associated with a higher level of risk.

The value of total non-resident assets is positive and significant (8.7488 , $p=0.017$). This may mean that a bank's ownership of foreign assets indicates increased dependence on external financial conditions, which is a hypothetical risk factor in periods of financial instability.

To cover potential losses, banks form reserves, which act as a "financial buffer", which allows maintaining the stability of banks during economic downturns. According to the results of the calculations, it was found that the reserve ratio for active operations is significant and has a negative value (-24.8814 , $p=0.023$). Limit indicators (p-value between 0.05 and 0.10). This provides grounds for the conclusion that the formation of a larger volume of reserves by banks to cover expected losses on active operations leads to a reduction in the risk of stress for the banking sector.

According to the results of the research, the group of limit indicators (p-value between 0.05 and 0.10) includes domestic government bonds and loans granted to non-residents.

The peculiarity of the current functioning of the banking sector of Ukraine is the excess of liquid resources, which are largely invested in domestic government bonds (domestic government bonds); Although not very significant ($p=0.052$), the positive correlation coefficient (10.076) allows us to make an assumption about a possible connection between risk and OVDP. The dependence of the Ukrainian banking sector on the yield of OVDP, especially in conditions of high risk and stress in the financial system, may indicate an insufficient development of the credit market, where banks avoid lending due to high risks of borrower default and operating costs, choosing bonds as a more reliable instrument with a predicted yield. The tendency to increase the yield on OVDP in such conditions indicates a weak diversification of bank assets and a strong dependence of the lending market on the state of the economy, while investments in bonds allow avoiding operating costs, maintaining the stability of banks' financial flows.

At the same time, as Pylypets (2023) notes, the increase in deposits in the lending sector and the decrease in demand for loans from the population and business, as well as the steady slowdown in loan growth, are explained by the high risks associated with lending to the real sector, since the banking system has high rates of non-returns and overdue loans. The seriousness of the problem of excessive liquidity due to the increase in the share of government bonds is also emphasized by Borodenko and Gorban (2024), emphasizing that banks' business models are undergoing transformational changes due to a change in the structure of profitability.

The coefficient of loans to non-residents is moderately significant (6.3848, $p=0.087$). After all, lending to non-residents may be associated with stress through the transmission of cross-border risks.

Insignificant indicators ($p\text{-value} > 0.10$).

Loan-to-deposit ratio: with a high p-value (0.650), this ratio (3.5496) is not statistically significant and therefore does not accurately predict stress. Although a higher ratio may indicate liquidity risk, in this case it does not demonstrate a strong relationship.

The value of the ratio of operating income to operating expenses (2.683) and p-value (0.175) indicate its limited predictive power, since in such a model this indicator does not allow to distinguish between stable and stressed banks.

The ratio of assets to liabilities in foreign currency with a large standard error and p-value of 0.154 (-50.9382) is also not statistically significant, despite the fact that currency mismatches on the active and passive parts of the balance sheet often generate risk. However, the proposed model does not identify it as a strong predictor.

The ratio of non-performing loans to capital is an important *indicator for ensuring the stability of the banking sector*. Although non-performing

loans are generally important for predicting stability, the p-value (0.238) indicates that they may not be as influential here, perhaps due to limited data variation or existing risk mitigation measures.

Funds of non-resident non-bank financial institutions: this coefficient (0.0928, $p=0.842$) shows little predictive power. Although dependence on foreign institutions may imply risk, it does not appear to be significant in this model.

The data in *Figure 2* largely demonstrate the correspondence between the predicted stresses based on the proposed aggregate index and the actual stress periods identified using the National Bank’s Financial Stress Index. In particular, this is the beginning of 2019, marked by the armed aggression of the Russian Federation in the Kerch Strait; the first quarter of 2020, which coincided with the beginning of the COVID-19 pandemic and the associated economic shocks due to quarantine measures; as well as the entire period after February 2022, characterized by full-scale military aggression of the Russian Federation.

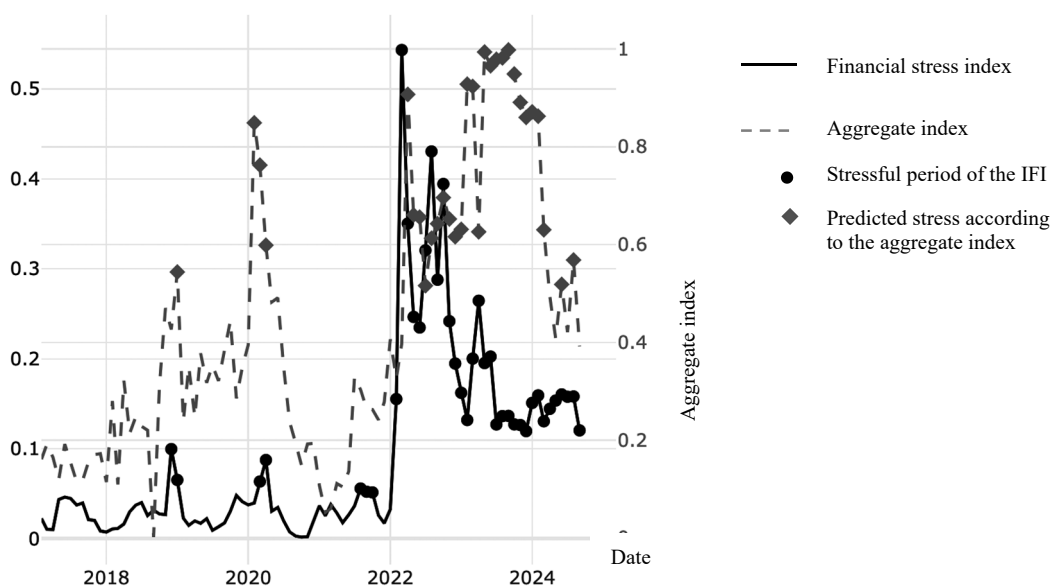


Figure 2. Dynamics of the Financial Stress Index and the forecasted aggregated banking sector stability index in Ukraine during 2018 – October 2024.

Source: calculated by the author.

Thus, the results obtained allow us to assert the high ability of the model to effectively capture significant geopolitical and economic shocks, confirming its usefulness in identifying periods of increased stress in the banking sector.

Conclusins

The initial hypothesis that it was impossible to predict the stability of the banking sector using available macroeconomic and operational data was rejected. By developing a logistic regression model, the research demonstrates that it is indeed possible to predict future stress periods in the

banking sector with sufficient forecasting accuracy. The model achieved an accuracy of 88.04%, an AUC of 94%, and an F1 score of 0.84, confirming its robustness and effectiveness. Using annual changes in key balance sheet indicators, the model provides a robust framework for proactive risk management, offering significant progress compared to traditional descriptive tools that only assess past and present conditions. These results confirm the potential of predictive methodologies in enhancing the early warning capabilities of financial regulators.

This means that the logistic function that predicts the probability of being classified as a stressed period (class 1) can serve as an aggregate index for identifying indicators that cause financial instability. Among the most important predictors are return on assets (negative relationship), which reflects a decrease in profitability during stress; return on equity (positive relationship), which captures increased volatility of profits; funds in the NBU (positive relationship), which indicates the dependence of banks on liquidity support from the central bank; total assets of non-residents (positive relationship), which illustrates the generation of risks associated with the funds of non-bank financial institutions-non-residents; reserves for active operations (negative relationship), which reflects an increase in the level of deductions to cover losses on loans during stress. These indicators are critically important for determining the financial vulnerability of Ukraine's banking sector, especially under martial law conditions, when profitability and risk reduction mechanisms are crucial to ensuring its sustainability.

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GREENWASHING IN ECO-BRANDING OF FMCG ENTERPRISES

Eco-branding is an essential tool in modern marketing that fosters consumer trust and strengthens the environmental image of brands. For FMCG companies, this entails integrating ecological values into brand positioning strategies, implemented through the use of slogans, packaging design, and other elements that symbolize a connection with nature. However, alongside the growth of eco-branding, the phenomenon of greenwashing has become increasingly prevalent – a marketing tactic that creates a false perception of a brand's environmental sustainability. It has been examined that the essence of greenwashing and substantiates its negative impact on consumers, the market, and brands, including loss of trust, a reduction in loyal customer bases, and stricter regulatory requirements in the research. A classification of greenwashing types based on communication methods, areas of influence, and levels of environmental responsibility have been proved. The research hypothesis suggests that transparent communication, supported by certification and genuine ecological initiatives can

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ГРІНВОШИНГ В ЕКОБРЕНДИНГУ FMCG-ПІДПРИЄМСТВ

Екобрендинг є важливим інструментом сучасного маркетингу, що сприяє формуванню довіри споживачів і підсилює екологічний імідж брендів. Для FMCG-підприємств це означає інтеграцію екологічних цінностей у стратегії позиціонування бренду, які реалізуються через використання слоганів, дизайну упаковки та інших елементів, що символізують зв'язок з природою. Однак разом з розвитком екобрендингу дедалі частіше спостерігається явище грінвошингу – маркетингового прийому, що створює хибне уявлення про екологічність бренду. Розглянуто сутність грінвошингу та доведено його негативний вплив на споживачів, ринок і бренди, зокрема через зниження довіри, скорочення кількості лояльних клієнтів та посилення регулювання. Проведено класифікацію видів грінвошингу за способом комунікації, сферою впливу та рівнем екологічної відповідальності. Гіпотеза дослідження полягає в тому, що прозора комунікація, підтримана сертифікацією та реальними екологічними ініціативами, здатна мінімізувати явище грінвошингу і



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minimize greenwashing and enhance brand competitiveness. The methodological basis of the research includes an analysis of contemporary scientific and applied literature, as well as a review of successful practices in the field of eco-branding. A step-by-step eco-branding strategy for FMCG companies is proposed, aimed at avoiding greenwashing, ensuring the long-term development of the brand, and strengthening consumer trust. The research emphasizes the importance of tools such as life cycle assessment, transparent reporting, and independent certification, which ensure the authenticity of a brand's environmental image and its sustainable growth.

Keywords: eco-branding, FMCG enterprises, environmental initiatives, green marketing, greenwashing, strategy, environmental responsibility.

JEL Classification: M 14, M 30.

підвищити конкурентоспроможність брендів. Методологія дослідження базується на аналізі сучасної наукової та прикладної літератури, а також на огляді успішних практик у сфері екобрендингу. Запропоновано поетапну стратегію екобрендингу для FMCG-підприємств, яка передбачає уникнення грінвошингу, забезпечення довготривалого розвитку бренду та зміцнення довіри споживачів. Наголошено на важливості застосування таких інструментів, як оцінка життєвого циклу продукту, прозорі звіти та незалежна сертифікація, що дозволяють гарантувати автентичність екологічного іміджу бренду.

Ключові слова: екобрендинг, FMCG-підприємства, екологічні ініціативи, екологічний маркетинг, грінвошинг, стратегія, екологічна відповідальність.

Introduction

Within the framework of the global transition to sustainable development, eco-branding is of crucial importance in shaping responsible environmental behavior of both producers and consumers. Environmental initiatives of business not only contribute to reducing the negative impact on the environment, but also stimulate society to make conscious choices, which in turn strengthens the role of consumers in determining corporate strategy. Such interaction accelerates the transformation of markets towards sustainable development. However, along with positive trends, the growth of eco-branding popularity contributes to the spread of negative phenomena, among which the most critical is greenwashing. This phenomenon, characterized by the manipulation of environmental claims, undermines consumer trust in brands, inhibits the development of genuine environmental innovations and distorts competitive market conditions. This is especially true for companies in the FMCG sector, operating in conditions of rapid changes in consumer preferences.

It was hypothesized that increasing the transparency of marketing communications and adhering to ethical standards in eco-branding reduce the risks of greenwashing and contribute to increasing consumer trust in environmental brands during the research.

The aim of the research is to identify the main approaches to countering greenwashing through the analysis of its manifestations, mechanisms of action and consequences for FMCG companies and consumers.

The research methodology is based on the analysis of literary sources, comparison of best practices of European and Ukrainian companies, as well as identification of the main types of greenwashing in marketing communications. A qualitative assessment of the impact of greenwashing on

consumer choice and an analysis of tools that promote market transparency were used. The article provides examples of practical cases that demonstrate effective strategies for avoiding greenwashing.

The issue of greenwashing has been actively studied by both international and Ukrainian scientists. Delmas and Burbano (2011) in their work "The Drivers of Greenwashing" analyzed the main factors contributing to the spread of greenwashing in the corporate environment. Siano et al. (2017) expanded the classification of this phenomenon after the Volkswagen scandal. Ottman (2017) focused on strategies of environmental marketing focused on sustainable development. Bowen (2014) investigated symbolic environmental initiatives of companies. In the Ukrainian context, Odynets and Konak (2022) studied in detail the mechanisms of manipulation of environmental claims, and Minkova et al. (2016) emphasized the importance of certification in preventing pseudo-environmental practices.

The structure of the research has four sections. The first and second sections consider the theoretical foundations of greenwashing and its classification. The third is devoted to the analysis of the impact of greenwashing on consumer behavior and brand competitiveness. The fourth section provides recommendations for FMCG companies, among which transparency of communications, the use of certifications and long-term investments in sustainability are important.

1. The essence and phenomenon of greenwashing as a phenomenon in the eco-branding of FMCG enterprises

The term "greenwashing" combines the words "green" and "white-washing", symbolizing the disguised reality under an environmentally appealing guise. Greenwashing is the practice of a company providing false or exaggerated information about the environmental benefits of its products or processes in order to improve its image. According to Delmas and Burbano (2011), greenwashing is "the deliberate use of pseudo-environmental claims to mislead consumers about the environmental benefits of a product". Siano et al. (2017) consider greenwashing as "a manipulative strategy aimed at creating a false impression of a company's environmental responsibility." Ottman (2011) defines greenwashing as "an attempt to conceal negative environmental impacts through unsubstantiated marketing claims." In Ukrainian practice, greenwashing is interpreted as "the use of environmental labeling without actual confirmation of the product's compliance with standards" (Minkova et al., 2016). Korotenko (2020) adds that greenwashing can also mean "creating the impression that a company is participating in environmental initiatives when such efforts are symbolic or limited". There are several different types of greenwashing, each of which has its own characteristics and ways of influencing consumers. The most common include: pseudo-ecological labeling, when a product receives the "ecological" label without proper certification; information concealment, when a company emphasizes

certain positive aspects while ignoring negative ones; manipulative advertising, which uses vague or misleading wording. More details about these and other types of greenwashing are presented in *Table 1*, which reflects their classification and examples of application in corporate practice.

Table 1

The main types of greenwashing

Type of greenwashing	Short description	Examples of application by companies
Hidden	Focusing on one environmental aspect of a product or service while ignoring other environmentally harmful characteristics	The company emphasizes the environmental friendliness of the packaging, but does not mention the high level of CO2 emissions during the production of the product
Partial	Implementing individual environmental measures that are non-systematic or have a minor impact on the overall environmental footprint	Use of biodegradable packages while maintaining harmful production processes
False environmental labeling	Using unreliable or fictitious environmental certificates and labels	The company uses symbols or statements about environmental safety without confirmation by reputable organizations

Source: compiled by the authors based on (Siano et al., 2017).

Understanding these types of greenwashing is critical for both consumers and marketers. Armed with knowledge of the mechanisms of pseudo-environmental claims, consumers can more critically evaluate marketing claims and make informed choices in favor of truly environmentally responsible brands. For marketers and companies, this signals the need for transparent communication and real actions in the field of sustainability to avoid the negative consequences of greenwashing, such as loss of trust and reputational risks. Greenwashing can lead to a decrease in brand value by 10–40% due to consumer protest, which is a significant risk factor for FMCG companies (Szabo & Webster, 2021).

In global practice there is a trend towards an increase in greenwashing cases among companies from different regions, in particular from Europe, Asia and North America. Over the past two years (2023–2024), a new peak of this phenomenon has been recorded, although for the first time in six years a decrease in the total number of greenwashing cases was noted (*Figure 1*). Despite this, the seriousness of such incidents continues to increase, which indicates larger-scale violations and manipulation of environmental claims. In 2023, about 60% of greenwashing cases concerned false claims about combating climate change, reducing greenhouse gas emissions and reducing pollution, demonstrating a growing emphasis on climate issues. In 2024, this share decreased slightly to 57%, which can be explained by new requirements for company transparency and increased consumer awareness.

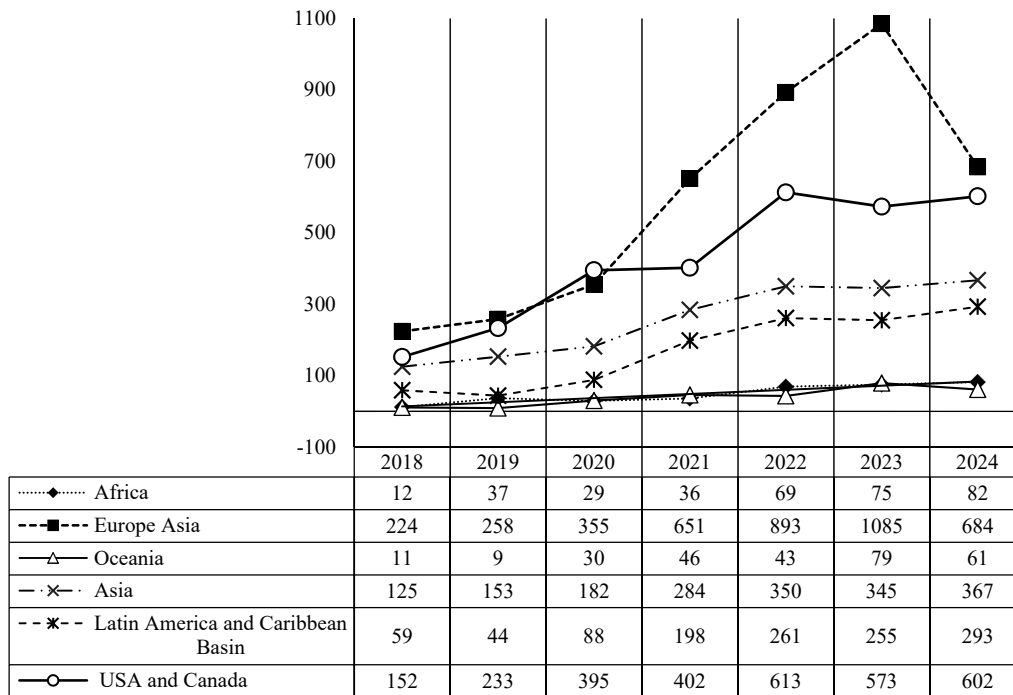


Figure 1. Number of unique companies with at least one case of greenwashing related to both environmental impact and misleading communication

Source: (RepRisk, 2023, October 17; RepRisk, 2024, March 21).

In light of increasing regulatory requirements and increased public scrutiny, companies must reconsider their approaches to eco-branding. Only the implementation of proven sustainable practices, confirmed by independent certificates and transparent reporting, can restore consumer trust and provide real competitive advantages in the market.

Greenwashing continues to cause significant skepticism among consumers, negatively affecting their behavior. According to research, 98% of consumers feel deceived by false environmental claims, which significantly undermine trust in brands' environmental promises. This leads to a decrease in interest in eco-products, loss of loyalty and a switch to alternative, less "green" products, which jeopardizes the success of eco-branding in general.

Key aspects of consumer behavior and their expectations of brand transparency in the context of environmental responsibility are presented in *Figure 2*. According to the research (NielsenIQ Insights, 2019), consumers expect brands not only to comply with environmental standards, but also to be fully transparent about the origin of raw materials, the production process and the environmental impact. The graph highlights the importance of access to clear information about the product's composition, the availability of certification and independent verification of environmental claims. According to the survey, more than 75% of consumers are ready to change their purchases in favor of brands that provide transparency and openness. This emphasizes the importance of developing a long-term eco-branding strategy that is based on real environmental initiatives, rather than manipulative marketing techniques often associated with greenwashing.

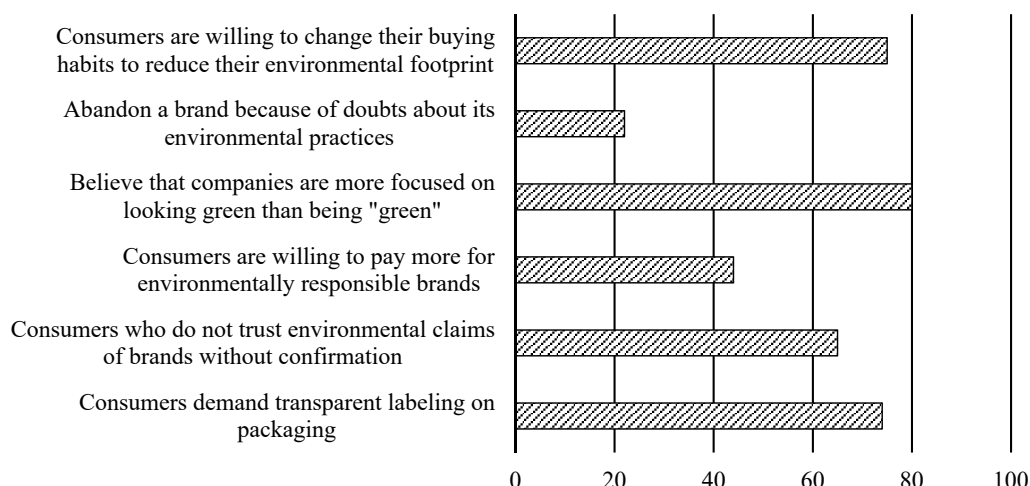


Figure 2. Key aspects of consumer behavior and expectations regarding brand transparency and environmental responsibility

Source: (NielsenIQ Insights, 2019).

Modern consumers are becoming increasingly aware and demanding of the environmental responsibility of products and services. The consequences of companies using greenwashing can have negative consequences:

undermining brand trust: the detection of false or exaggerated environmental claims weakens consumer trust in the brand. Distrust can spread not only to a single product, but also to an entire product line or even a company, which significantly complicates further communication and worsens the reputation;

increasing skepticism and changing consumer behavior: the constant use of greenwashing can cause general skepticism about environmental claims. Consumers may begin to avoid products that are positioned as environmentally friendly due to doubts about their reliability. This makes it difficult to make conscious decisions in favor of truly environmentally responsible products;

loss of loyal customers: consumers who learn about cases of greenwashing may refuse to support the brand and look for alternatives that meet their environmental beliefs. The loss of loyal customers is particularly dangerous because they often act as brand advocates, recommending them to others and promoting a positive image.

This highlights the need for companies to be transparent and accountable in their environmental claims in order to maintain and strengthen relationships with consumers.

Greenwashing also poses significant challenges to the environmental goods market, affecting its development and dynamics (Table 2).

The impact of greenwashing becomes particularly evident when large corporations find themselves at the center of scandals due to the use of false environmental claims. An analysis of several well-known cases allows us to better understand the consequences of this practice and emphasize the need for an ethical approach to eco-branding. They are summarized in Table 3.

Table 2

The impact of greenwashing on consumers, the market and brands

The areas of impact	Consequences for the company
Consumers	<i>Undermining trust:</i> the exposure of false environmental claims undermines brand trust in general and creates growing consumer skepticism about companies' environmental initiatives. <i>Changing consumer behavior:</i> constant exposure to greenwashing leads to a decrease in interest in environmental products and a shift to less environmentally friendly and cheaper alternatives. <i>Loss of loyalty:</i> consumers may shift their choices to brands that demonstrate transparency and real environmental efforts
The market	<i>Reduced profitability of environmental investments:</i> distrust of "green" products may lead to reduced investment in new environmental technologies. <i>Stricter regulatory requirements:</i> the spread of greenwashing stimulates the strengthening of legislation and standards in the field of eco-branding. <i>Negative impact on eco-branding:</i> reduced overall attractiveness of environmental products due to frequent cases of pseudo-environmental claims
Brands	<i>Reputational damage:</i> greenwashing can lead to long-term reputational damage for brands, reducing their competitiveness. <i>Market share loss:</i> consumers who have lost trust often choose alternative products, leading to reduced sales and market share. <i>Legal consequences:</i> companies found guilty of greenwashing can face lawsuits and fines

Source: compiled by authors for (Vollero, 2022).

Table 3

The use of greenwashing by well-known brands

Brand title	Case study and brief description	Company's ambitions	Consequences
Coca-Cola	Eco-friendly packaging. Claiming that all plastic bottles are fully recyclable reduces the negative impact on the environment	Integrating corporate social responsibility strategy into marketing communications, taking into account the growing interest of consumers in environmental issues	Independent studies have shown that only a small percentage of plastic bottles are actually recyclable. Most plastic waste ends up in landfills or in water supplies, leading to greenwashing. The result is a loss of consumer trust and growing skepticism about the environmental claims of large corporations
Unilever	The company promoted Persil and Surf laundry detergents as environmentally friendly products, manufactured using clean technologies that reduce their negative impact on the environment	Use the environmental trend to attract customers, increase consumer loyalty, and position the brand as eco-conscious	The actual performance of the products did not match the claimed performance, leading to accusations of greenwashing. Loss of consumer trust led to reduced loyalty and loss of market share
Nestlé	The "Pure Life" brand was positioned as environmentally friendly bottled water, obtained from sources with high environmental standards	Create an image of an environmentally responsible brand that takes into account the growing awareness of consumers about sustainability	Water sources were found to be no different from standard ones and environmental promises were exaggerated. This led to accusations of greenwashing and a negative impact on the company's reputation
Volkswagen	Dieselgate case: the company promoted diesel cars under the slogan "Clean Diesel", claiming that they had low emissions and met the highest environmental standards	Use environmental characteristics as a competitive advantage and attract consumers focused on sustainable development	The discovery of emissions-cheating software manipulation during testing led to a global scandal. The consequences included multi-billion-dollar fines, vehicle recalls, and significant reputational damage that significantly reduced brand trust

Source: compiled by authors for (Zishen Lin, 2022; Vollero, 2022; Siano et al., 2017)

Thus, the experience of these corporations is an important example for businesses about the inadmissibility of greenwashing and the need to invest in real sustainable practices. This will not only help maintain consumer trust, but also ensure the long-term competitiveness of the brand in the face of growing attention to environmental responsibility.

2. Classification of greenwashing

In the field of eco-branding of FMCG companies, it is important to understand the various forms of greenwashing, as this allows you to effectively counteract this phenomenon and develop ethical marketing strategies, especially in the context of eco-branding of FMCG companies.

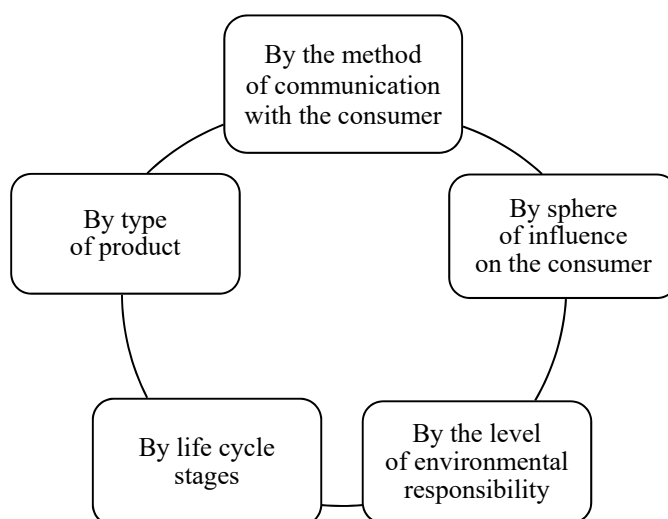


Figure 3. Classification of greenwashing by marketing features

Source: compiled by the authors according to (Laufer, 2003).

The classification of greenwashing by marketing characteristics helps to identify specific tactics and techniques that companies use to manipulate consumers' environmental perceptions (*Figure 3*). This not only increases market transparency, but also contributes to informed consumer choice.

The classification by means of communication with the consumer demonstrates how companies use a variety of channels to create a positive environmental image, often without actually changing production processes or corporate strategies. Packaging, social media, PR campaigns, partnerships with environmental organizations and event sponsorships are all tools that brands use to create the impression of environmental responsibility.

Greenwashing manifests itself in the manipulation of these channels, when companies emphasize external attributes of environmental friendliness,

such as green packaging or positive images of nature, instead of focusing on real environmental improvements. (Table 4).

Table 4

Methods of communication with the consumer

Communication method	Characteristics	Examples
Packaging	Packaging is often the first point of contact a consumer has with a product, and it is actively used to create the impression of being environmentally friendly. Companies can add elements that evoke associations with nature, such as the color green, images of trees, water or earth, which stimulates the perception of the product as environmentally friendly.	Using biodegradable labels on products that have non-organic content, or packaging with the words "organic", "natural", which is not confirmed by certificates
Advertising	Media advertising campaigns often use exaggerated or distorted claims about a company's environmental achievements. This can be either direct claims about the environmental friendliness of products or covert advertising through positive images.	Car advertising that focuses on their "environmental" characteristics (reducing CO2 emissions), ignoring other aspects that are harmful to the environment
Social media	Social media is used to promote brands' green image through short messages, nature posts, or collaborations with influencers. Consumers often have no way to verify the authenticity of such claims, leading to a superficial green image.	Campaigns where influencers post photos with "eco-friendly" products without providing additional facts about their impact on nature
PR campaigns	Companies use public events and statements to improve their image by focusing on environmental aspects that may be insignificant or one-off. Press releases can be aimed at showing the company's "green" initiatives, even if they are not systematic	Press conference dedicated to tree planting organized by large corporations with high levels of environmental pollution
Sponsorship of environmental events	Companies can sponsor environmental initiatives or events (e.g., green marathons) to create the impression of their environmental responsibility without changing their core operating processes.	A major oil company that sponsors an environmental festival but doesn't make any changes to reduce its own carbon emissions
Partnership with environmental organizations	Companies can partner with environmental NGOs or support specific environmental projects by providing financial or other assistance. This can be used to improve the brand image, even if the company's core products are not environmentally friendly.	A company that produces disposable plastic products is funding an organization that is cleaning up oceans from plastic

Source: compiled by the authors for (Delmas & Burbano, 2011).

The criterion "*by the sphere of influence on the consumer*" details how greenwashing focuses on different aspects of consumer behavior and perception, including psychological, informational, social and economic factors. This helps to clarify how marketing strategies use environmental trends to manipulate the market and create the illusion of environmental responsibility without real change. In general, this forms:

psychological influence through the use of positive association. Companies use greenwashing to create a sense of participation in environmentally responsible actions in consumers. The rhetoric that "by buying this product, you are making the world a better place" is actively used to create an emotional attachment to the brand.

Example is the products advertised as "green" due to one environmental element (for example, biodegradable packaging) create in the consumer the feeling that this purchase is a "contribution to saving the planet";

informational influence through lack of knowledge. In this case, the company relies on the fact that the consumer does not have enough information to verify the environmental claims. This creates the impression that the product is environmentally friendly, when in fact it is not.

Example: using complex terms such as "green" or "organic" without a detailed explanation of how these characteristics are achieved contributes to the manipulation of consumer perceptions;

social influence through trends and social norms. Greenwashing is mainly based on social trends in behavior and consumption. Companies use popular environmental trends to attract consumers who are eager to support environmentally conscious initiatives, but do not always check the reliability of the information.

Example: mass production of "green" products that are actively promoted through influencers or social media without properly assessing the real environmental benefits;

economic influence through price manipulation. Consumers are willing to pay more for products that they believe are environmentally friendly. Companies use this to increase the price of products labeled "green", even if these products do not have significant environmental benefits.

Example: overpricing "green" versions of a product (e.g. "organic" products), even though their production process is no different from the regular one.

Product type takes into account differences between product types, as each type of product creates unique opportunities for manipulating environmental claims (*Table 5*). Products from highly processed FMCG companies, such as food, cosmetics or textiles, often undergo complex production processes, which opens up more opportunities for distorting information about their environmental impact. At the same time, durable goods, such as cars or household appliances, offer the opportunity to manipulate data about the energy efficiency or environmental friendliness of the materials used.

Table 5

Greenwashing by product type

Type of product	Characteristic	Example of greenwashing
Food products	The food industry often uses labels such as "organic," "bio," or "natural." However, these terms can be used incorrectly or without proper certification. Food products also run the risk of being manipulated by partially using organic ingredients without disclosing other aspects of production.	The product is advertised as "organic" because it contains one organic ingredient, but most of the other ingredients are conventional
Cosmetic products	The cosmetics industry actively uses "green" claims, such as "paraben-free" or "not tested on animals," to attract consumers' attention. However, this can be misleading if the company, for example, uses other harmful substances or tests other products on animals.	A cream that is advertised as "natural" but contains synthetic preservatives or other dangerous chemicals
Household goods	Household products often use advertising that focuses on biodegradability or reduced environmental impact through the use of "green" materials. However, some products may only be partially biodegradable or use manufacturing processes that are harmful to the environment.	Plastic bags that are advertised as biodegradable but actually decompose only under specific conditions not available under normal recycling conditions
Automotive industry	In this industry, greenwashing often focuses on reducing emissions or using alternative energy sources. However, even if certain cars have reduced emissions, their production process can cause significant environmental damage.	An advertisement for a hybrid car that is supposedly "eco-friendly," but its production creates large amounts of toxic waste
Textile industry	The fashion industry also uses environmental rhetoric, claiming to use organic fabrics or environmentally friendly production processes. However, this greenwashing can be when a company focuses on only one aspect, ignoring other harmful practices, such as poor energy efficiency or excessive water use.	Clothing labeled "eco-friendly cotton" that is actually made in factories with significant water and energy consumption
Technological products	Electronics manufacturers may make claims about the energy efficiency of their devices or the use of recycled materials. However, these claims often do not reveal the full picture of the conditions under which such products are manufactured or disposed of.	Advertisement for a laptop that uses energy-saving technology but is manufactured with environmental pollution during the extraction of materials

Source: compiled by authors for (Ottman, 2011; TerraChoice Group, 2010; Delmas & Burbano, 2011).

The *product life cycle criterion* is one of the key approaches to classifying greenwashing, which allows detecting manipulations at different stages of the product life cycle – from the extraction of raw materials to their disposal. This approach is based on the understanding that each such cycle has specific opportunities for pseudo-environmental claims that can distort the real impact of the product on the environment.

Raw materials. At this stage, manipulations can concern the sources of origin of raw materials and methods of their production. Companies often exaggerate the environmental friendliness of materials, claiming the use of "renewable" or "organic" components, without providing real evidence or ignoring important details about the origin and methods of production.

Production. An important stage at which greenwashing can concern the creation of products. Typically, companies claim to reduce harmful emissions or introduce environmentally friendly technologies, although in reality such innovations may have limited or insignificant impact. Often, manipulations are made using unconfirmed data about "green production", which in fact is not true.

Transportation. Companies may exaggerate the environmental benefits of their transportation operations, for example by claiming to use "green transportation" or reduce emissions during logistics, although the actual figures often differ significantly from the declared ones.

Recycling. When claiming the recyclability of a product, companies often ignore the real difficulties or impossibility of recycling it. Products that are declared as "biodegradable" or "recyclable" may in fact have significant recycling restrictions or require special conditions for full decomposition, which are not always explained to consumers.

The *criterion of the level of environmental responsibility* allows us to classify greenwashing depending on the degree to which a company integrates environmental practices into its activities. This classification makes it possible to assess the extent to which the company's statements correspond to real environmental initiatives and efforts aimed at reducing the negative impact on the environment. Depending on the level of responsibility, several key categories can be distinguished.

Fully ecological products. This category is occupied by companies that implement environmentally responsible practices at all stages of their activities - from the use of environmentally friendly raw materials to product disposal. Companies that produce fully ecological products have real confirmation of their statements, in particular through international environmental certifications ISO 14001 or Ecolabel. In such cases, environmental statements are confirmed by specific actions and transparency of production processes.

Partially ecological products. This category includes companies that implement environmental initiatives only at certain stages of their activities, for example, using organic raw materials or energy-efficient production technologies. However, other stages of production, transportation, or disposal of products may not meet the declared environmental standards, which often lead to overstating the environmental benefits of the product, creating opportunities for greenwashing.

Products with limited environmental responsibility. This category includes companies that only partially or minimally implement environmental initiatives. For example, they may emphasize certain environmental properties of their products (such as the use of recycled materials or the reduction of harmful emissions), but the overall environmental impact of their activities remains significant. Such companies try to use the environmental image to improve their reputation, but their real responsibility is limited.

Non-environmental products with pseudo-environmental advertising. This is the lowest level of environmental responsibility, where companies practically do not implement sustainable practices, but actively use environmental rhetoric in their advertising campaigns. They may claim that their products or processes are "green", while these claims are not supported by reality or are manipulative. This is a classic example of greenwashing, where companies seek to improve their reputation through exaggerated or false environmental claims.

3. Methods of avoiding greenwashing in the process of eco-branding

In modern eco-branding of FMCG companies, transparency and reliability of information are fundamental principles that allow avoiding greenwashing and maintaining consumer trust. Compliance with these principles ensures the sustainability of the company’s environmental reputation. Let’s consider the main methods that help prevent greenwashing in the context of eco-branding.

Use of verified environmental labels.

Product certification is an effective way to avoid greenwashing. The use of internationally recognized certification standards ISO 14001, Fair Trade Certified, Rainforest Alliance, GOTS and PEFC guarantees the reliability of environmental claims (Table 6). These standards help to verify the real environmental impact of products and increase the level of trust in the brand.

Table 6

Major international certifications

Certification	Applications	Main goal
ISO 14001	Environmental management	Systematically reduce negative environmental impact
Fair Trade Certified	Ethical trade	Support socially responsible production
Rainforest Alliance	Nature protection	Conserve biodiversity and sustainable agricultural practices
GOTS	Textile production	Guarantee organic materials and compliance with social standards
PEFC	Forest certification	Support sustainable forestry and legal timber trade

Source: compiled by the authors according to (ISO, 2015; Fair Trade USA, n. d.; Rainforest Alliance, 2024; Global Organic Textile Standard, 2021; PEFC, n. d.; Minkova et al., 2016).

Transparent communication on environmental impact

Transparency in eco-branding involves detailed communication about the environmental impact of products at each stage of their life cycle (Table 7). Companies should provide consumers with accurate information about the sources of raw materials, energy efficiency of production, implementation of "green" technologies in logistics and methods of product disposal. This helps to build trust in the brand, strengthening its reputation as environmentally responsible.

Table 7

Product life cycle stages and communication

Life Cycle Stage	Description	Communication content
Raw Materials	Source and extraction methods	Use of renewable or organic materials
Production	Energy efficiency and emission reduction	Use of "green" production technologies
Transportation	Low-emission logistics	Use of environmentally friendly vehicles
Disposal	Recycling or decomposition	Compliance with biodegradability or recycling standards

Source: compiled by the authors according to (Ottman, 2011).

Such information should be clear and specific, in particular on reducing CO₂ emissions, using environmentally friendly materials or implementing innovative technologies. This allows consumers to understand the real contribution of the company to environmental protection and make informed choices in favor of eco-brands.

Providing access to additional sources of verification.

Companies can increase the credibility of their environmental claims by providing links to external sources or certificates. For example, independent environmental research reports, audit results or official certificates should be available on the company's website or in the form of QR codes on product packaging.

Clear formulation of environmental claims.

Environmental claims should be accurate and supported by facts (Table 8). Using general terms such as "environmentally friendly" or "natural" without specifying them can cause doubts among consumers. Companies should clearly indicate the specific environmental benefits of their products, such as emissions levels, amount of recycled materials, etc.

Table 8

Formulating environmental terms in brand communication

The term	Precise formulation	Example of use
"Natural"	Uses 100% organic cotton	"The shirt is made from 100% GOTS certified organic cotton"
"Eco-friendly"	Reduced carbon footprint by 50%	"The CO ₂ emissions during production have been reduced by 50% compared to 2020"

Source: compiled by authors for (ESMA, 2023).

Adhering to these methods not only prevents greenwashing, but also contributes to the long-term sustainability of FMCG companies' eco-branding. Transparency, the availability of verified eco-labels, access to independent verification sources and clear wording of environmental claims form the basis for trust and sustainable brand development.

4. Strategies to counteract greenwashing

To effectively combat greenwashing and ensure the authenticity of FMCG eco-branding, companies should use specific strategies focused on implementing environmental principles in all aspects of their activities. These strategies should be based on real actions supported by transparent and reliable data.

Strategies to combat greenwashing are a set of measures aimed at ensuring the transparency, reliability and authenticity of a company’s environmental statements, which include the development of internal policies, the implementation of ethical communication standards and the integration of environmental principles into business processes.

Strategies to combat greenwashing significantly affect the business environment, forming new standards of ethical behavior and responsibility. In particular, they change market dynamics, stimulate companies to implement real environmental practices and influence consumer behavior.

The mechanism of influence of these strategies on the business environment is to create competitive advantages for companies that adhere to the principles of transparency and authenticity in environmental statements (*Figure 4*). When companies actively combat greenwashing, they build trust with consumers and partners, which strengthen their reputation in the market.

This encourages competitors to adapt to the new conditions, increasing the overall level of environmental responsibility in the industry. Such strategies also influence consumers, increasing their level of awareness and trust in brands. When companies provide reliable and verified information about the environmental characteristics of their products, consumers can make informed decisions, supporting environmentally conscious businesses. This stimulates the growth of demand for sustainable products and contributes to the formation of an environmentally conscious consumer culture.

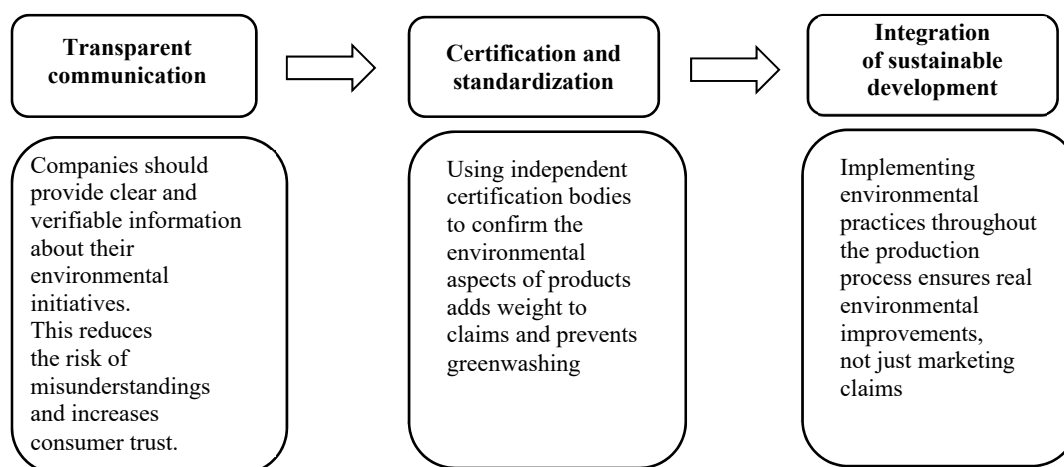


Figure 4. The mechanism of countermeasures

Source: compiled by the authors based on (ESMA, 2023; Minkova et al., 2016).

The mechanism of influence is also manifested through increased regulatory pressure. Companies that implement strategies to combat greenwashing often cooperate with regulatory authorities and non-governmental organizations, contributing to the development of stricter standards and regulations in the field of environmental responsibility. This creates a stricter legal framework, forcing all companies to improve the level of their environmental practices.

These strategies affect business partnerships through supply chains. Companies are starting to demand that their suppliers comply with environmental standards, which extend the impact to related industries and contribute to the

overall improvement of the environmental situation. This creates a network effect, where the responsibility of one company stimulates positive changes in the entire business environment.

In addition, greenwashing strategies affect innovative development. Companies invest in research into new environmentally friendly technologies and products. This not only improves their competitiveness, but also contributes to progress in the field of sustainable development.

Creating a greenwashing strategy in an FMCG company is a complex process that requires a deep understanding of the environmental aspects of the business and the integration of sustainable development principles into the corporate strategy. This process begins with the realization of the need to move from superficial environmental statements to real actions aimed at reducing the negative impact on the environment.

A step-by-step approach helps to build an effective strategy to combat greenwashing, aimed at achieving real environmental results in the FMCG sector (*Figure 5*).

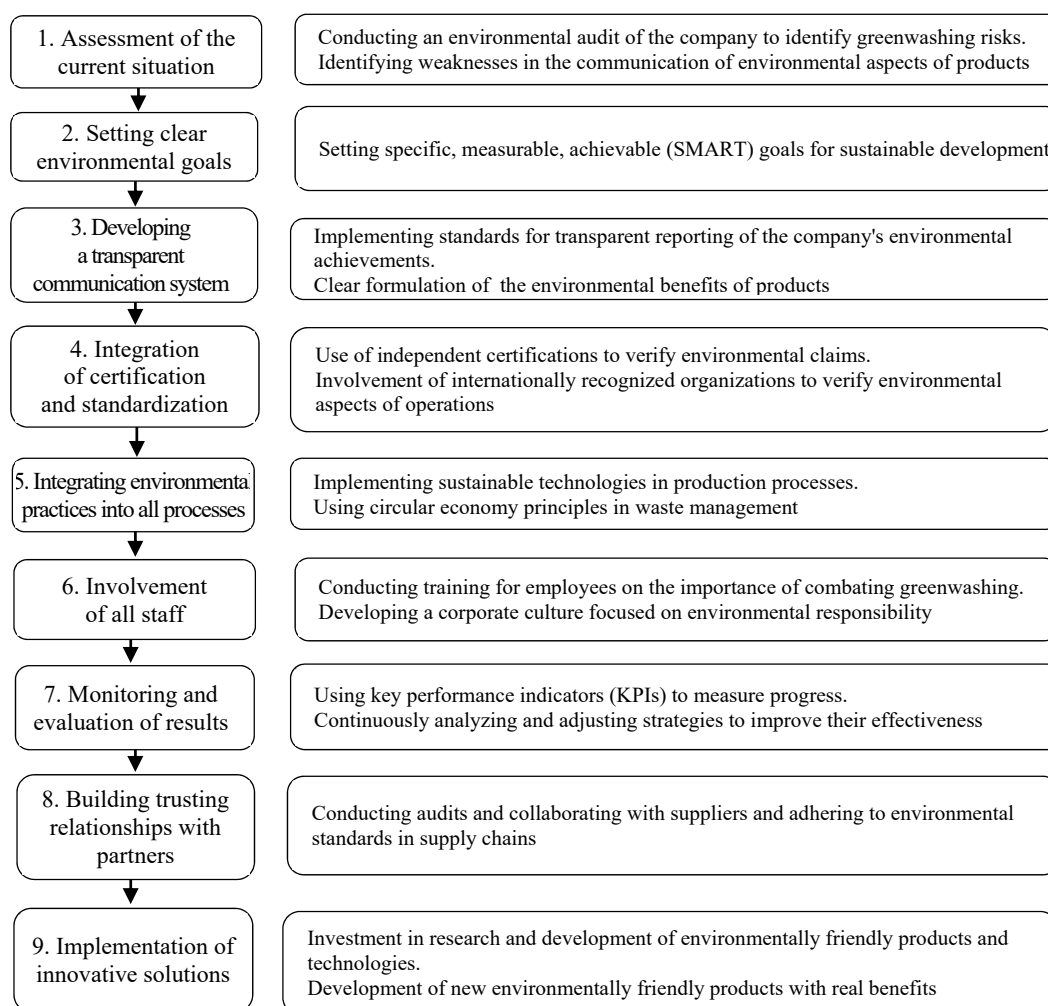


Figure 5. Stages of developing a strategy to combat greenwashing in FMCG

Source: compiled by the author according to (ESMA, 2023; Ottman, 2011).

Developing and implementing an anti-greenwashing strategy requires a collaborative effort and the involvement of different departments within the company.

Senior management is responsible for initiating the process, providing strategic vision, and allocating the necessary resources. Their support is critical for setting corporate priorities and ensuring the effectiveness of the strategies being implemented.

The marketing department integrates environmental aspects into the brand strategy and communication with consumers. They ensure the credibility of all environmental claims and their confirmation by real actions, using modern tools and channels for disseminating information.

The production department optimizes the use of resources and implements environmentally friendly practices in production processes, such as waste reduction, the use of renewable resources, and energy-efficient technologies.

The supply and logistics department ensures compliance with environmental standards in supply chains and collaborates with suppliers to implement sustainable practices. It monitors the environmental impact of logistics operations and seeks alternative environmentally friendly transport solutions.

The legal department ensures that the company's activities comply with legislative requirements and standards in the field of ecology and advertising. It advises on legal risks and helps to avoid potential violations.

The human resources department organizes training for personnel in the field of environmental responsibility and the development of an environmentally conscious corporate culture. Employees must understand their role in the implementation of environmental initiatives.

All employees: each employee participates in the implementation of the greenwashing strategy, adhering to established policies and actively supporting environmental initiatives. Staff involvement is the key to success.

The development of a greenwashing strategy is based on the scientific principles of sustainable development, environmental management and corporate social responsibility. The use of methodologies such as product life cycle assessment (LCA) allows for the quantitative assessment of the impact of products and processes on the environment. This provides an objective basis for decision-making and setting priorities. The integration of corporate environmental ethics helps to form the principles and values that guide the behavior of the company. This strengthens the long-term sustainability and reputation of the company.

Creating and implementing an anti-greenwashing strategy in an FMCG company is a complex process that requires systematic and scientific approaches. Involving different departments and levels of management ensures the effective implementation of eco-branding activities and contributes to achieving real environmental improvements.

Conclusions

The research hypothesis that transparent communication, certification and real environmental initiatives can minimize greenwashing and increase the competitiveness of brands has been confirmed.

Greenwashing remains a serious problem for FMCG companies that seek to build long-term relationships with consumers and ensure the sustainability of their business. Practice shows that superficial environmental claims without factual confirmation not only undermine consumer trust, but also cause reputational and financial losses. This emphasizes the critical need to develop scientifically based strategies to counteract greenwashing.

Integrating sustainable development into corporate strategies promotes a systemic approach to environmental responsibility, which increases business efficiency and forms a positive corporate culture. This allows you to strengthen consumer trust and employee engagement, which in turn increases brand loyalty and creates competitive advantages.

Transparent communication is the basis for strengthening trust. Open coverage of both achievements and challenges demonstrates a high level of responsibility, which helps to strengthen the brand and stand out in the market. Investments in environmental innovations and technologies not only reduce the negative impact on the environment, but also create new opportunities for business development, expanding the product range and entering new markets.

In the context of growing environmental awareness of consumers and increasing regulatory requirements, counteracting the greenwashing is becoming a strategic necessity. Scientifically based approaches and real environmental achievements provide FMCG companies not only with competitive advantages, but also help preserve the environment for future generations.

Thus, comprehensive long-term strategies to counteract greenwashing are an integral part of the success of FMCG companies' eco-branding strategies. A systematic approach, scientific validity and transparency ensure consumer trust and support the harmonious development of business in accordance with environmental standards.

The prospect of further research should be the development of integrated models for assessing the effectiveness of eco-branding, taking into account the dynamics of market changes and consumer behavior, as well as the analysis of the impact of digital technologies on the transparency of brand communications.

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BRAND MANAGEMENT INTELLIGENCE: DIGITAL TECHNOLOGIES AND TOOLS

In the context of dynamic technological changes, the intelligence of the economy is becoming particularly relevant, forming new standards of management activity, where the key resource is not only information, but also the ability to interpret and apply it to make strategic decisions. In brand management, intelligence opens up opportunities for developing unique brand strategies based on a deep analysis of consumer behavior, forecasting market trends and increasing the effectiveness of marketing campaigns. This requires rethinking traditional approaches to brand management and finding new ways to integrate digital tools to increase the consumer value of the brand. The aim of the research is to substantiate the emergence of the Branding 3.0 concept in the process of brand management intellectualization. The research is based on the hypothesis that it is the intelligence of the economy and management that has led to the emergence of the Branding 3.0 concept as a key element of modern brand management. The research methodology is based on the theoretical foundations of behavioral economics, generation theory and modern marketing approaches, as well as the use of historical and logical methods, analysis and synthesis, conceptualization, systematization and structural modeling. The research identifies the prerequisites for the

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АНАЛІТИКА БРЕНД-МЕНЕДЖМЕНТУ: ЦИФРОВІ ТЕХНОЛОГІЇ ТА ІНСТРУМЕНТИ

В умовах динамічних технологічних зрушень інтелектуалізація економіки формує нові стандарти управлінської діяльності, де ключовим ресурсом стає не лише інформація, але й здатність до її інтерпретації та застосування для прийняття стратегічних рішень. У бренд-менеджменті інтелектуалізація відкриває можливості для розроблення унікальних бренд-стратегій, які базуються на глибокому аналізі споживчої поведінки, прогнозуванні ринкових тенденцій і підвищенні ефективності маркетингових кампаній. Це вимагає переосмислення традиційних підходів до бренд-менеджменту й пошуку нових способів інтеграції цифрових інструментів для підвищення споживчої цінності бренду. Метою статті є обґрунтування становлення концепції Брендінг 3.0 у процесі інтелектуалізації бренд-менеджменту. Представлене дослідження ґрунтується на гіпотезі, що саме інтелектуалізація економіки та управління обумовила становлення концепції Брендінг 3.0 як ключового елементу сучасного бренд-менеджменту. Методологія дослідження базується на теоретичних засадах поведінкової економіки, теорії поколінь і сучасних підходах маркетингу, а також на використанні історичного й логічного методів, аналізу та синтезу, концептуалізації, систематизації і структурного моделювання. Визначено передумови



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intelligence of brand management, improves the periodization of the evolution of brand management in the process of generational transformation, which reflects the movement from simple product-oriented branding to complex data-driven strategies. The terminological apparatus of brand management is developed; conceptual changes in the formation, positioning and development of brands are characterized, as well as changes in the labor market due to new challenges to the professional development of specialists in this field. The essence of the Branding 3.0 concept is revealed and its system-forming elements are substantiated. The main stages of the brand roadmap are identified and its tools are systematized in accordance with the tasks of each sub stage. The considered advantages, disadvantages, and practical examples of the application of the latest technologies in brand management allow us to conclude that brands need to adapt to intelligence in order to ensure strategic advantages in the market.

Keywords: Branding 3.0, digital branding, behavioral economics, intelligent society, AI, digital technologies, marketing tools, brand roadmap.

JEL Classification: B20, D21, D40, M31.

Introduction

Dynamic processes of informatization and digitalization have determined the key vector of development of modern society, demonstrating the increasing importance of intellectual potential in all spheres of life.

The interest of scientists in the processes of intelligence (intellectualization) of the economy is determined by accelerated changes in the main driving forces of economic value, the emergence of new industries, business models and prospects for economic growth.

If scientific ideas about the intellectual economy, associated with the term "intellectual capital" (which was first used in 1969 by the American economist Galbraith (2007), focused on the importance of knowledge, skills and intangible assets as key resources for development, today's conceptual shift has changed the emphasis to the use of digital technologies, artificial intelligence and innovative approaches in creating added value, as can be concluded from Majure (2015), Freitas and Ofek (2024), Ziakis and Vlachopoulou (2023), Veloutsou and Guzman (2017), Zozulov and Nestorova (2008).

Ukrainian researchers devote their attention to intelligence in various spheres of the economy. Naumov (2008) defines the prerequisites for the formation of an intellectual society. Popova (2020) defines the key aspects of intellectualization and identifies the features of neo-industrialization of the economy. Bryukhovetska and Bogutska (2020) reveal the content and structure of intellectualization of the enterprise. Polyakov (2016) characterizes the impact

інтелектуалізації бренд-менеджменту, удосконалено періодизацію еволюції бренд-менеджменту у процесі перетворення поколінь, що відображає рух від простого брендингу, орієнтованого на продукт, до складних стратегій, керованих даними. Розвинуто термінологічний апарат бренд-менеджменту, охарактеризовано концептуальні зміни щодо формування, позиціонування та розвитку брендів, а також зміни на ринку праці через нові виклики професійному розвитку фахівців у цій сфері. Розкрито сутність концепції Брендінг 3.0 та обґрунтовано її системотвірні елементи. Визначено основні етапи дорожньої карти бренду та систематизовано її інструменти відповідно до завдань кожного підетапу. Розглянуті переваги, недоліки та практичні приклади застосування новітніх технологій у бренд-менеджменті дають змогу зробити висновок про необхідність адаптації брендів до інтелектуалізації задля забезпечення стратегічних переваг на ринку.

Ключові слова: Брендінг 3.0, цифровий брендинг, поведінкова економіка, інтелектуальне суспільство, AI, цифрові технології, маркетингові інструменти, дорожня карта бренду.

of intellectualization on the development of the main forms of international economic relations and provides general recommendations for improving the quality of their information support. Kolesnyk et al. (2024) investigate the issues of intellectualization of production and smart specialization of regions of Ukraine. Despite the importance of scientific developments, modern scientific literature does not pay due attention to the intellectualization of marketing and brand management, which determined the choice of the research direction.

Intelligence in brand management reflects the reorientation of brand management processes towards a more strategic, data-driven and technologically integrated approach. In today's world, a brand ceases to be just a marketing tool, but becomes part of the consumer's cultural, social and even existential identity, as comprehensively highlighted by Ilaw (2014) and Amaral & Torelli (2018).

A key condition for such changes, in particular, can be considered intellectualization, which literally opens up new horizons for brand management. Traditional brand management methods, which relied heavily on intuition and experience, are being replaced by intellectual approaches based on large volumes of consumer data and complex algorithms. Brand management itself is increasingly shifting to the digital environment, leaving traditional tools a secondary role and thereby forming a new direction of marketing activity – digital branding (Kolosok, 2023; Taylor & Pentina, 2017; Ustik et al., 2023; Iankovets, 2024). This shift represents a fundamental transformation in the processes of creating, maintaining, and optimizing brands. Research in this area is essential for organizing the effective use of the latest technologies for brand management.

In addition, consumer behavior is becoming increasingly volatile under the influence of rapid technological changes, cultural shifts, and global events (Davydova et al., 2018; Yevtushevska, 2016; Zhaldak & Yatsenko, 2021). Therefore, the intellectualization of brand management provides brands with the tools to quickly adapt to these changes by constantly analyzing consumer data and adjusting strategies in real time.

However, insufficient theoretical development and practical testing of the concept of intellectualization of brand management, in particular the integration of artificial intelligence, big data and automated systems into brand management, complicate the adaptation of companies to the challenges of digital transformation, changing consumer expectations and increasing the role of socio-ethical aspects of branding. This necessitates both the theoretical justification of intellectualized brand management and the analysis of practical challenges that brands face in the process of intellectualization.

The aim of the research is to substantiate the formation of the concept of Branding 3.0 in the process of intellectualization of brand management.

To achieve the aim, the following tasks are envisaged such as:

- to determine the prerequisites for the intellectualization of brand management and to clarify the periodization of its evolution;

- to reveal the content of the intellectualization of brand management and its features;
- to develop the theoretical and methodological support of modern brand management.

The hypothesis is that the intelligence of the economy and management has led to the emergence of the Branding 3.0 concept as a key element of modern brand management. This updates approaches to the formation, positioning and development of brands, and also radically changes the labor market.

The hypothesis was tested on the basis of theoretical provisions of behavioral economics, generation theory, marketing theory, and the results of scientific research on brand management, set forth in the works of domestic and foreign scientists. In the process of work, theoretical research methods and general methods were used, in particular, historical and logical, analysis and synthesis – for periodization of the stages of brand management development, substantiation of the terminological apparatus of brand management, formation of a brand management roadmap; conceptualization and structural modeling – for substantiation of the conceptual provisions and components of Branding 3.0; systematization – for brand management tools at its various stages, as well as graphical and tabular methods.

The main part of the research consists of two subsections divided into paragraphs. The first subsection is devoted to research of the features of the evolution of brand management under the influence of technological development and changes in consumer behavior. The second part reveals the content of the Branding 3.0 concept and the process of brand management in the context of the intellectualization of society.

1. The evolution of brand management through the prism of behavioral economics

1.1. Prerequisites for intellectualizing brand management

The evolution of brand management is traced in the transformation of its concepts under the influence of market oversaturation with product groups and brands, information overload of society and the decline of traditional marketing. Changes in consumer activity of the population, the transformation of physical satisfaction from purchase to emotional satisfaction, awareness of social, economic and civil position over time changed the classical concept of brand management, adding strategic features to it.

Attempts by scholars to detail the evolutionary milestones of brand management have led to various periodization options, presented in Kasych and Rafalska (2021); Plysenko (2016); Golovashchenko (2014); Veloutsou and Guzman (2017); Yahelska and Koshel (2022) and other works. The most common and generalized approach is to distinguish three stages: pre-industrial, industrial and informational (Kasych & Rafalska, 2021), which demonstrate changes in the understanding of the brand, its goals, object of

influence and in the methods of formation. The last stage is characterized by the formation of an information society, the diverse needs of which the brand tries to satisfy in various ways.

According to various sources, the modern stage began in the 1980s (Kasych & Rafalska, 2021) or 1990s (Plysenko, 2016) and continues today and is characterized by brand equity management. The brand itself is considered as a strategic tool for generating company profits. According to various sources, the modern stage began in the 1980s (Kasych & Rafalska, 2021) or 1990s (Plysenko, 2016) and continues today and is characterized by brand equity management. The brand itself is considered as a strategic tool for generating company profits.

The fact that the evolution of brand management is conditioned by scientific and technological progress and the development of society, which changes its vision and values, allows us to talk about the beginning of a new stage in the development of brand management. In our opinion, it is time to talk about intelligence in brand management, which has become the driver of the transformation of the knowledge society into an intellectual society (for details, see Naumov, 2008; Stashkevych, 2023).

Just as the industrial stage of brand management evolution was shaped by the emergence and growth of industry, the transition from simple access and exchange of information to intelligent processing, application and creation of new knowledge based on the intelligent integration of technologies may mark a new stage in the evolution of brand management. The increasing role of artificial intelligence in management processes does not bypass brand management, which is also becoming increasingly automated with centralized platforms that are easily scalable in accordance with brand changes, iterations and expectations. Today, there is a trend towards the formation of brand authenticity based on the analysis and prediction of future consumer behavior and market changes by artificial intelligence, the use of artificial intelligence tools to improve brand identity elements, support hyper-personalization, adaptive learning, automated management of marketing campaigns, optimization of business processes using neural networks for business, etc. Artificial intelligence tools are already challenging a number of professions in demand in brand management, for example, graphic designers. In recent years, more and more multifunctional digital agencies have appeared on the market, performing various orders: from analytics and generating advertising with a neural network to launching and supporting the development of brands. The labor market is changing, consumers are changing, and brand management is changing too. These changes may indicate the adaptation of brand management to new consumers of the second stage of the post-industrial society – the intellectual one.

So, since the consumer remains the key link in the brand management system at all stages of its development, we tried to look at the evolution of brand

management from the point of view of behavioral economics, because it is the consumer's behavior and psychology that play a significant role in shaping the brand concept, its identity, positioning and development strategies. As shown by the research of Peredalo et al. (2019), today influence techniques are actively used by modern organizations in many countries of the world. Consumer decision-making regarding brand choice can occur in different ways due to changes in expectations and values during the renewal of generations. Comparing the characteristics of consumers and their behavior in accordance with the theory of generations with changing features of brand management allowed us to distinguish six periods of its evolution (*Table 1*).

Table 1

The evolution of brand management in the process of generational transformation

Period	Consumer attitudes towards brands by generation	Characteristics
Fundamental era 1930–1950	The Silent Generation (born 1928–1945) valued stability, trust, and consistency in brands. Consumers embraced simple, one-size-fits-all advertising that often reflected traditional values	Early brand management was based on classical economics, focusing on rational consumer behavior and the functional benefits of products. Brand strategies were simple, emphasizing product features and reliability
The era of Emotional Connection 1950–1980	Baby Boomers (born 1946–1964) and Generation X (born 1965–1980) sought brands that represented personal identity, status, and lifestyle. Brands like Coca-Cola and Nike became cultural icons by tapping into these emotional and psychological triggers	Brands have begun to recognize the importance of emotional appeals, cognitive biases, and irrational aspects of consumer decision-making. Emotional branding and storytelling have become central
The era of social brand management 1980–1990	Millennials (born 1981–1996), who value experiences over possessions and expect brands to engage with them on social media, offer personalized experiences, and align with their social values. This generation's brand loyalty is shaped by shared experiences and community involvement	The focus of brand management has shifted to the overall consumer experience, with brands leveraging social proof, peer influence, and the desire for social belonging. Behavioral incentives and choice architecture have begun to influence brand strategies
The era of Ethical Brand Management 1990–2010	The stage is associated with Generation Z (born 1997–2012), which is very skeptical of traditional advertising and demands authenticity, ethical behavior, and social responsibility from brands. They are influenced by brands that align with their values and contribute to the positive development of society	As consumers have begun to prioritize ethical considerations, sustainability, and corporate social responsibility in their purchasing decisions, brands have responded by emphasizing purpose, transparency, and ethical principles
The era of digital technologies and artificial intelligence 2010 – present	The stage is aimed at the future Alpha generation (born since 2013), which is growing up in a completely digital world. Interested in hyper-personalization	Brands must anticipate their preferences through AI-powered personalization, seamless digital experiences, and the integration of virtual and augmented reality into brand interactions

Source: compiled by the author based on (Strauss & Howe, 1991; Verlinden, 2022).

This approach demonstrates how brand management has evolved in response to changes in consumer psychology, expectations, and values across different generational cohorts. The evolution reflects a movement from simple product-centric branding to complex data-driven strategies that require a deep understanding of human behavior and the unique characteristics of each generation. The periodization also highlights the end of the previous evolutionary period, "1980–2010", and the beginning of a new one, "2010–present", as it was in business that the application of artificial intelligence began to gain momentum in the 2010s. The integration of artificial intelligence into consumer products, such as Apple's Siri (released in 2011), Google Now (2012), and Amazon's Alexa (2014), can be said to have ushered in the mainstream of artificial intelligence. These applications introduced the public to artificial intelligence and demonstrated its potential for business applications. The rise of cloud computing in the 2010s allowed companies of all sizes to access AI tools and services without the need for a large upfront investment in hardware. AI has increasingly been used to make more strategic business decisions, including market analysis, customer segmentation, and personalized marketing. What we see now in the brand-consumer relationship is no longer the brand management of forty years ago. The intelligent society has fundamentally changed it.

1.2. Development of brand management terminology

The widespread use of information and computer technologies, the transition to a knowledge economy, as well as changes in consumer behavior have led to the intellectualization of management processes, in particular, brand management. The term "intellectualization" itself has become the starting point and served as the basis for such concepts as "intellectual capital", "intellectual assets", "intellectual resources", "intellectual systems" and others, which emphasize a higher level, qualitative changes in the context of new requirements associated with the growth of intellectual activity. In general, intellectualization means the acquisition of new qualities by an economic system through the intensive use of knowledge, generation (or acquisition) of knowledge and information exchange. Generation is possible if there is the necessary potential (research, information and technological, human, material and technical, etc.), the formation and development of which also become part of the intellectualization of the economy (Polyakov, 2016).

The study of intellectualization has allowed us to distinguish two approaches to its content (Bryukhovetska & Bogutska, 2020):

- on the one hand, the result of intellectualization is an increase in the intellectual level of society, economy, enterprise, production, etc. by increasing the share of mental labor in their structure;
- on the other hand, an increase in the intellectual level occurs due to an increase in the share of artificial intelligence in social and economic processes.

Based on the above and the content of the concepts of "intellectualization of the economy", "intellectualization of the enterprise", "intellectualization" (in marketing) (Polyakov, 2016; Popova, 2020; Telnov & Karaulna, 2022; Qualtrics.com, n. d.), *intelligence of brand management can be defined as the process of increasing the share of intelligence in brand management by integrating advanced cognitive and analytical methods of creating, supporting and developing a brand.* This process goes beyond traditional brand management, combining knowledge from marketing, economics, psychology, sociology, and cultural studies, and involves a simultaneous increase in the share of mental labor and the share of artificial intelligence in the process of analytical, generative and managerial activities, ensuring the adaptation of the brand to complex market dynamics. Brand management is increasingly using artificial intelligence to optimize processes, and branding, as its key component, is used to develop and grow a brand, in particular, to create text, visual, and video creatives.

It is fair to say that intelligence has led to a number of conceptual changes in brand management. *First*, it requires a high level of data analysis and interpretation to predict market trends, consumer behavior, and make data-driven decisions that improve brand strategy. This requires skills in statistical analysis, machine learning, and data visualization. In this regard, brand management is beginning to operate with the CDP concept. These are software systems that centralize and manage customer data from various sources. In brand management, CDPs are used to create a single customer profile that helps brands provide a more personalized and consistent experience across channels (Martech.org, 2024).

Second, artificial intelligence and machine learning are central to the intellectualization of brand management. These technologies allow you to automate brand management tasks, create personalized consumer experiences, and optimize marketing strategies in real time. However, even as the field becomes more intellectualized, creativity still remains the basis of branding, so it is the ability to integrate technological capabilities with human creativity and intuition that guarantees the effectiveness of brand management. In this regard, the NLP concept is introduced into brand management, a branch of artificial intelligence that deals with the interaction between computers and people using natural language. Directly in brand management, NLP is used for sentiment analysis, customer service chatbots, and content creation, which allows brands to better understand and respond to consumer emotions and preferences (Sison, 2024).

We have to summarize that the intelligence of brand management lays the foundation for Branding 3.0, where artificial intelligence not only assists but also drives key brand decisions. This new era of brand management represents a symbiotic relationship between human creativity and artificial intelligence, implementing new tools in brand management.

2. Branding 3.0

2.1. System-forming characteristics of the Branding 3.0 concept

If traditional branding focused on static elements such as logos, slogans and advertising, and Branding 2.0 focused on real-time interaction with consumers through digital platforms, then it can be argued that the delegation of part of the brand manager's powers to artificial intelligence and the prospects for the latter's further collaboration with the Internet of Things fully indicate the emergence of Branding 3.0 (*Figure 1*).

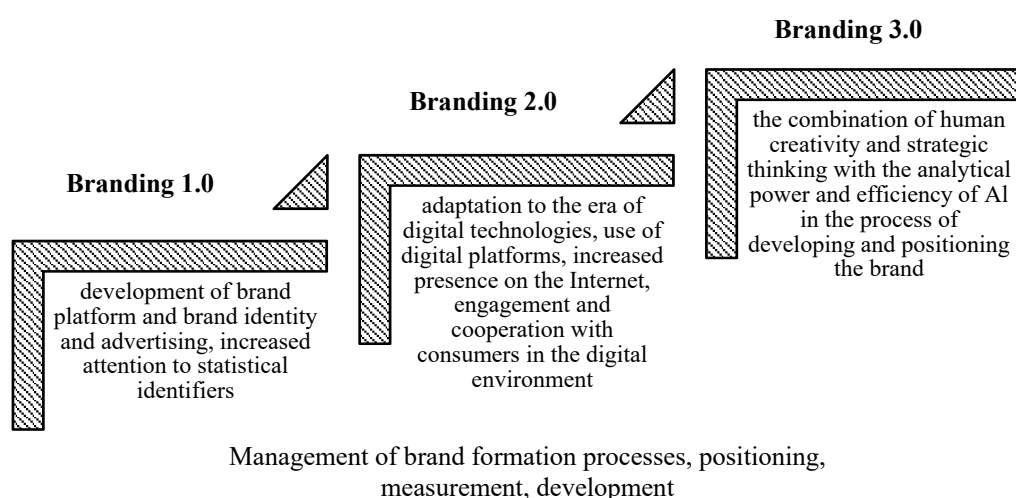


Figure 1. The evolution of branding as part of brand management

Source: compiled by the authors.

Adapting traditional branding strategies to the digital age through the mandatory presence on the Internet and the involvement of users and social networks is no longer enough. The competitive struggle has simply changed its arena, and the blue ocean has gone beyond the shores of the traditional environment. Instead, Branding 3.0 demonstrates the battle of intellects: who will analyze data sets better and faster, more accurately predict consumer behavior, create unique highly personalized experiences, develop more flexible and more efficient strategies, etc. Intellectualization of brand management with the help of artificial intelligence is literally changing every aspect of branding and updating its structure (*Figure 2*).

The Data Analytics building block involves making decisions based on analyzing vast amounts of data from multiple sources (social media, customer behavior, market trends), and using AI to predict future consumer behavior and market changes, allowing brands to anticipate needs and stay ahead of their competitors.

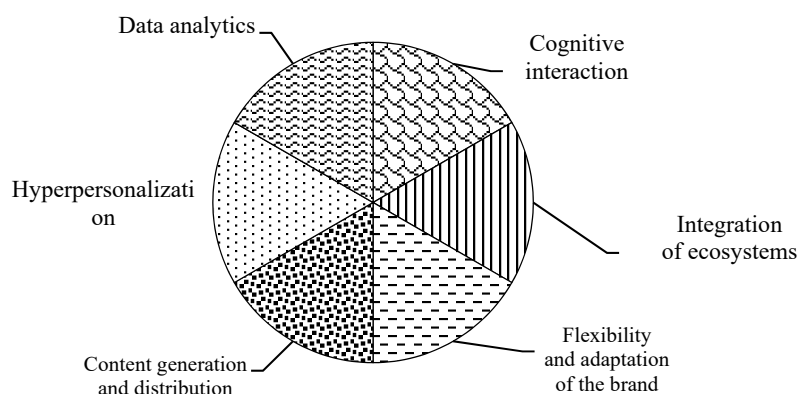


Figure 2. Structural components of Branding 3.0

Source: compiled by the authors.

Hyper-personalization means customizing brand interactions at an individual level using AI. This includes personalized marketing messages, product recommendations, and user interactions tailored to specific consumer profiles. AI’s ability to dynamically adjust brand messages and experiences in response to real-time data ensures they are relevant.

Automated content creation and distribution unlocks the power of AI tools to create and control content, including social media posts, blogs, ads, and visual assets, ensuring consistency and scalability across platforms.

The use of chatbots, virtual assistants, and other AI tools to engage with customers, providing personalized responses and contextual support, and conversational interfaces that allow brands to engage in meaningful human conversations with consumers, improving user experience, all reveal the meaning of the Branding 3.0 building block – "Cognitive Brand Engagement".

An equally important component is the integration of brand technologies across multiple digital platforms, supported by AI, to create a unified brand and improve brand strategies.

The ability of brands to quickly adapt to changing market conditions, consumer preferences and technological advances through artificial intelligence allows for changing brand strategies and rapid innovation, while the continuous learning of artificial intelligence systems allows brands to improve their brand strategies over time to improve performance and consumer satisfaction. Branding 3.0 therefore ensures the intelligent use of technology and ensuring that it is aligned with brand values and consumer expectations.

2.2. Road map of intellectualized brand management

The process of intelligent brand management, which includes Branding 3.0, is a complex and dynamic approach that combines human expertise with

AI-driven technologies to create a more adaptive, personalized, and effective brand experience. This process includes several interconnected stages, each of which uses AI capabilities to improve the decision-making process, brand creation, and development. To better understand the structuring of brand management processes and the selection of appropriate tools for each stage, we consider it advisable to form a detailed brand roadmap, where you can indicate the path of its development, key milestones, tools, and results, as well as how they align with the business strategy and budget. A brand roadmap is a strategic plan that outlines the vision, goals, and actions of a brand for a specific period of time. Such a map can describe the brand’s tactics, channels, and resources, as well as how they optimize brand reach and engagement. This helps align the brand’s identity, values, and promises with its target audience, market, and competitors (FasterCapital.com, n. d.). The main stages of a brand roadmap can be summarized in a few steps (*Figure 3*).

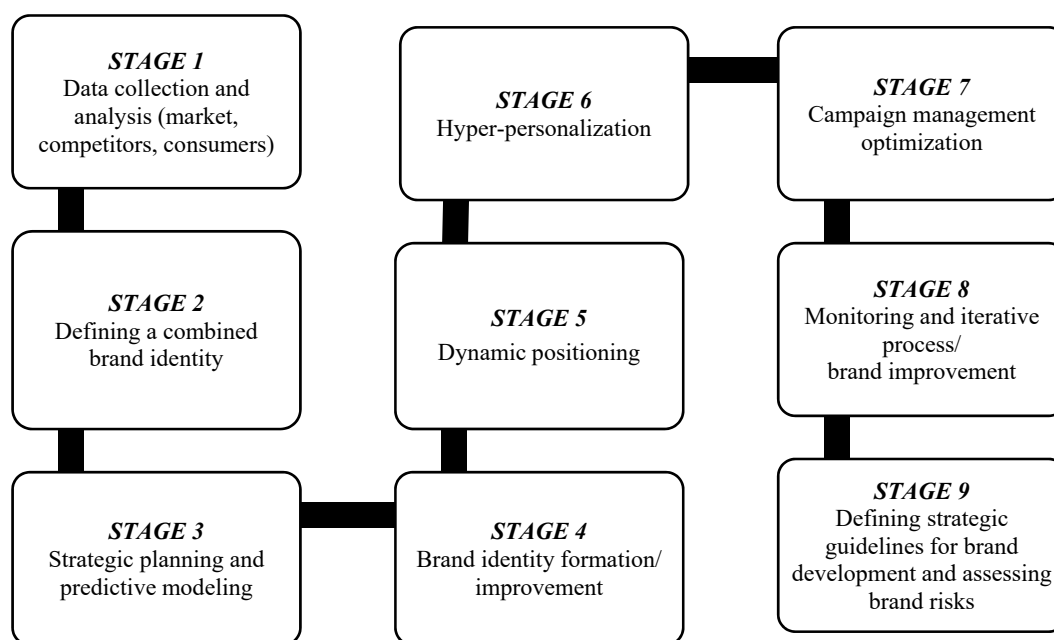


Figure 3. Brand management roadmap diagram

Source: compiled by the authors.

Depending on the aims and initial parameters of a particular brand, in particular, the stage of its life cycle, the roadmap is detailed with tasks, time periods, and responsible parties. It is expected that in addition to ready-made roadmap templates provided by various online services, artificial intelligence can help in its development. If necessary, the roadmap can be supplemented with tools necessary for solving tasks at different stages (*Table 2*), which seems appropriate when at first glance the tools are interchangeable, but the result may not fully solve a specific marketing problem.

Table 2

Brand roadmap stages and tools

Key intermediate steps in brand roadmap	Means of implementing sub-stage tasks
<i>Stage 1</i>	
Sub stages	Tools
1	2
Comprehensive data collection from various sources, including market monitoring, customer interaction, surveys, social media, etc.	<i>Market Monitoring Tools:</i> Google Trends, Statista, Mintel, Similar Web, Serpstat, Ahrefs, Google Cloud AI, DataLab, Julius AI, TensorFlow; <i>Customer Interaction Tools:</i> HubSpot, Salesforce, Zendesk; <i>Survey Tools:</i> Google Forms, SurveyMonkey, Qualtrics, Typeform; <i>Social Media Monitoring Tools:</i> Hootsuite, Amplitude, Sprout Social, Brandwatch; <i>Web Analytics Tools:</i> Google Analytics, Adobe Analytics, Hotjar; <i>Big Data and AI Tools:</i> Tableau, IBM Watson, Google Cloud BigQuery; <i>Customer Data Platforms:</i> Segment, Tealium, Treasure Data; <i>Feature and Attribute Analysis Tools:</i> Qualtrics, SpyFu; <i>Strengths and Weaknesses Analysis Tools:</i> SWOT Analysis Tools (e.g., Creately, Lucidchart), Socialbakers, etc.
Analysis of market trends, competing brands, formation of a competitive profile of brands in the industry, identification of their features, strengths and weaknesses	
Segmentation and selection of the optimal number of segments; analysis of psychology and behavior of key consumer segments; formation of a consumer portrait, empathy maps, CJM	CDP, Salesforce Customer 360, Tealium AudienceStream, Xtensio, Marketo, etc.
<i>Stage 2</i>	
Constructing a connected brand identity by selecting DNA and brand code elements that match the consumer’s identity elements	Clarabridge, Crimson Hexagon, Adobe Sensei, Frontify, Personify XP, CDP, Salesforce Customer 360, Tealium AudienceStream, etc.
Brand platform outline	Canva, Jira kanban boards, Confluence whiteboards, Loom, Atlas, Visme
<i>Stage 3</i>	
Developing strategic plans that align with the brand's goals, values, and market opportunities	Miro, Trello, Asana, Notion, Aha!, ProductPlan, Strategic Planner by Cascade, etc.
Predictive analytics to model the outcomes of different strategic options	Salesforce Einstein, IBM Watson
<i>Stage 4</i>	
Developing/refining brand identity elements, including logos, slogans, mascot, Tone of Voice, visual aesthetics, guarantees, etc., that resonate with the target audience and reflect the brand’s core values	Renderforest, OpenArt AI, Midjourney, Copilot, Leonardo, Designstripe, Inkscape, Sketch, Businessnamegenerator, Shopify, Grammarly Business, CoSchedule Headline Analyzer, BuzzSumo, Adobe Illustrator, Krita, Sai paint tool, Genlogo, Logomaster, Google Cloud Vision, AAA logo Synthesia, Elevenlabels, Leonardo, Krea AI, Runway, Sora, etc.
<i>Stage 5</i>	
Tracking changes in the market, consumer behavior and perception, adjusting the positioning strategy	Amazon SageMaker, Google Trends and the rest of the tools from Stage 1
<i>Stage 6</i>	
Selecting marketing communications that best align with the consumer’s identity at different stages of CJM / tailoring brand messaging, product recommendations, and experiences for individual consumers based on their preferences, behaviors, and past interactions	Dynamic Yield, Optimizely, Monetate, IBM Watson, OpenAI GPT, Sprinklr, etc.
Automatically create content and deploy it across channels, ensuring consistency and engagement with consumers	Copy.ai / Jasper, Canva / Adobe Creative Cloud, Salesforce, HubSpot CRM, Zoho CRM, Buffer, Sprinklr, Brandwatch etc.

End of Table 2

Key intermediate steps in brand roadmap	Means of implementing sub-stage tasks
1	2
Creating chatbots / mini-landing editing / and virtual assistants based on artificial intelligence to provide personalized support and real-time interaction	Dialogflow, Amazon Lex, OpenAI GPT, etc.
<i>Stage 7</i>	
Run marketing campaigns across multiple platforms using AI, optimizing reach, engagement, and conversion in real time	Marketo, Mailchimp, Pardot, Zapier, Mulesoft, etc.
Adaptive learning; ethical review of AI applications and their performance	IBM Watson, Amazon SageMaker OneTrust, IBM AI Fairness 360, Amazon SageMaker, etc.
<i>Stage 8</i>	
Real-time AI tracking of brand health metrics, providing continuous feedback on the effectiveness of branding and consumer engagement strategies	Brandwatch Consumer Research, Sprinklr, Talkwalker, Medallia, Qualtrics XM, SurveyMonkey CX, Reputation.com, Meltwater, NetBase Quid, Hotjar, Google Analytics 4, Mixpanel, Zoho CRM, Clarabridge, Yext, etc.
Improving brand policies, strategies and programs based on monitoring results	Salesforce Einstein, Microsoft Azure AI, H2O.ai, etc.
<i>Stage 9</i>	
Defining strategic directions for brand development	Salesforce Einstein, Microsoft Azure AI, H2O.ai, and tools from previous stages.
Brand risk assessment and management	Crisp Thinking, Signal AI, Onclusive, Resolver, LogicManager, RiskWatch, MetricStream, NAVEX Global, Diligent, Darktrace, Riskified etc.

Source: compiled by the authors.

For example, images of an avatar (virtual face of a brand) or product for social networks generated by Midjourney look more realistic, like photographs, while Dall-e looks more like a drawing.

The choice of option or its refinement will depend on the task, the style of communication or advertising appeal, etc.

The variability and breadth of functionality of modern tools allows it to be applied at different substages. For example, Marketo is a marketing automation tool that simplifies and optimizes marketing campaigns, can use AI for personalization, or can simply serve as a source of templates.

Although such tools and brand management automation significantly free up specialists' time to solve more important tasks, human control is still important. First of all, this is due to frequent cases of AI hallucinations and communication failures. For example, the scandal of the press service of the Verkhovna Rada of Ukraine due to the published article about the tragic shelling of Dnipro, where a photo of a child generated using artificial intelligence was used, which was condemned by society. "Novyi Kanal" used ChatGPT to prepare educational content about Oles Honchar for its own social networks, without taking into account the fact that this tool can very much resemble the truth and weave outright fakes among real facts (Msdetector.media, 2023a). Sometimes artificial intelligence does not quite correctly understand the query, so the result must be checked before distributing.

However, despite the possibility of failure and the need to master the process of communicating with artificial intelligence, which requires a certain level of specialist training, the benefits of such technologies are much greater. For example, previously an SMM specialist would spend half a day writing a content plan, but with the involvement of technology, the same work can be done in 15 minutes. In addition, ChatGPT, for example, makes mistakes only in 10% of cases (Msdetector.media, 2023b). In this regard, artificial intelligence is currently mostly used for routine processes: writing SEO articles, describing characteristics, analyzing files, auto-filling contracts, scraping tenders and their analysis, describing products, creating tables, writing niche descriptions of characteristics, verifying contracts, etc.

There are plenty of practical examples that demonstrate that creating ads with AI can significantly save resources. For example, RedBalloon, a company that sells gifts and experiences online, was spending USD 45000 a month on advertising agencies alone to run digital advertising for its brand. At the time, it was paying more than USD 50 to acquire a single customer. But Albert, an AI tool that analyzes ad campaigns, then manages targeting, testing, and budgets, tested 6500 variations of Google's text ads in just one day. The tool eventually proved so effective at learning from data to improve performance that it dramatically increased RedBalloon's return on advertising investment. At one point, the company was getting a whopping 3000% return on advertising investment (they made a profit of USD 30 for every USD 1 spent on ads.). They also reduced marketing costs by 25% due to increased efficiency (Kaputon, 2024).

Successful examples of the use of new technologies in brand management are Tesco and IKEA. For example, Tesco has installed facial scanning technology in its petrol stations to personalise advertising for individual customers (Theguardian.com, n. d.). This technology determines the gender and approximate age of the customer to show them individualised ads. IKEA has introduced an augmented reality app that allows customers to visualise 3D versions of furniture in their homes, making the shopping experience more immersive and convenient (Ikea.com, 2017). Similarly, L'Oréal has launched the "Makeup Genius" app, which uses augmented reality to allow users to virtually try on beauty products and purchase them directly through the app or in online stores (Lorealparisusa.com, n.d.). Another interesting example is the integration of digital into product design to engage consumers. So, Heineken has created interactive beer bottles equipped with LEDs and motion sensors that light up during a night out and sync with music to get the cool factor of club culture (Digitalsynopsis.com, n. d.).

In general, modern technologies can significantly simplify work in the field of brand management: even without having professional knowledge and skills of a designer, marketers and brand managers successfully generate images that correspond to the brand identity. These can be products from mascots and POS materials (*Figure 4*) to video advertising (LLLLITL, 2024, November 16).



Figure 4. Generated images of a conditional poster and a mascot

Source: compiled by the authors with Copilot (n. d).

Therefore, modern brand management actively uses intelligent technologies and tools. Such technologies are broad basic concepts (for example, artificial intelligence, big data, NLP), which provide various functions. Tools are special applications and platforms created on the basis of these technologies, designed to perform certain tasks within the framework of the broader brand management process. The formation of interactive roadmaps ensures compliance with all intermediate stages, the selection of optimal techniques, visualization of tasks and procedures, brainstorming, thereby improving the brand management process.

Conclusions

Artificial intelligence is becoming a driving force behind the transformation in brand management, the application of which encompasses personalization, trend forecasting and automation of processes from content generation to customer experience management and creation of individual marketing strategies.

The hypothesis put forward is confirmed by the certain evolution of branding: from a focus on the functional value of products, when the goal was to inform consumers and create recognition (Branding 1.0) – to emotional attachment with an emphasis on consumer experience and creating long-term relationships. Currently, it can be observed that Branding 3.0 is a significant evolutionary step after the era of digital platforms, based on the intellectualization of branding strategies through the integration of artificial intelligence. As brands have moved from traditional approaches (Branding 1.0) to more interactive and digitally-focused strategies (Branding 2.0), Branding 3.0 is characterized by the sophisticated use of artificial intelligence to improve and automate branding processes, making them more efficient, personalized, and adaptive. In practical circles, people gradually start talking about Branding 5.0, but the driver of this concept still remains intellectualization.

Therefore, the intelligence of brand management is not just a trend, but a fundamental stage of evolution that will determine which brands will survive and which will disappear in the world of global competition and

digital transformation. At the same time, the implementation of intellectualization is accompanied by a number of challenges, such as ethical dilemmas of using consumer data, the need to rethink traditional approaches to branding, the need for new competencies of brand managers that should integrate creativity and technological expertise. Accordingly, in view of these challenges, the prospects for further research are seen in the ways and mechanisms of integrating artificial intelligence, machine learning and big data analytics in the creation, development and support of brands.

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**THE EMPLOYER'S BRAND
FOR GENERATION Z**

Building an employer's brand is a strategic objective for modern companies, as it allows them to attract talented employees who are motivated to achieve the company's goals. This helps to improve corporate culture and enhance the company's business reputation. In a world where competition for qualified personnel is growing and job requirements are evolving, a strong employer's brand is becoming a key competitive advantage. The research is based on the use of methods such as theoretical generalization, comparison and ranking, and statistical analysis. The content of the employer's brand value proposition for Generation Z is determined. The components of the employer's brand value proposition among the representatives of generation Z are ranked. The components of the value proposition of the employer's brand of the researched enterprises in the retail sector are ranked in terms of their degree of development. The degree of compliance of the components of the employer's brand value proposition with the expectations of the representatives of generation Z at the researched enterprises is determined. Proposals aimed at shaping the development of the employer's brand for the researched enterprises are developed. The hypotheses about the expediency of ranking the components of the employer's brand value proposition to determine their importance for representatives of generation Z are formulated and empirically tested; ranking the components of the employer's brand value

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**БРЕНД РОБОТОДАВЦЯ
ДЛЯ ПОКОЛІННЯ Z**

Формування бренду роботодавця належить до стратегічного завдання сучасних компаній, оскільки дає змогу залучати талановитих працівників, здатних вмотивовано реалізовувати цілі підприємства. Це дозволяє покращувати корпоративну культуру та підвищувати ділову репутацію компанії. У світі, де конкуренція за кваліфіковані кадри зростає, а вимоги до робочих місць еволюціонують, сильний бренд роботодавця стає ключовою конкурентною перевагою. Дослідження ґрунтується на використанні сукупності методів: теоретичного узагальнення, порівняння та ранжирування, статистичного аналізу. Визначено зміст ціннісної пропозиції бренду роботодавця для покоління Z. Проведено ранжирування складових ціннісної пропозиції бренду роботодавця серед представників покоління Z. Здійснено ранжирування складових ціннісної пропозиції бренду роботодавця досліджуваних підприємств у сфері ритейл з погляду ступеня їх розвитку. Окреслено ступінь відповідності складових ціннісної пропозиції бренду роботодавця очікуванням представників покоління Z на досліджуваних підприємствах. Розроблено пропозиції, спрямовані на формування та розвиток бренду роботодавця для досліджуваних підприємств. Сформульовано та емпірично перевірено гіпотези щодо доцільності ранжирування складових ціннісної пропозиції бренду роботодавця для визначення їх значущості для представників покоління Z; ранжирування



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proposition in terms of the level of their development in the researched enterprises; Spearman's rank correlation coefficient allows to determine the level of compliance of the employer's brand of the researched enterprises with the requirements of the representatives of generation Z and to propose proposals for its further development.

Keywords: value proposition, brand, employer brand, brand assessment, generation Z, employment.

складових ціннісної пропозиції бренду роботодавця з погляду рівня їх розвитку на досліджуваних підприємствах; того, що коефіцієнт рангової кореляції Спірмена дозволяє визначити рівень відповідності бренду роботодавця досліджуваних підприємств вимогам до нього представників покоління Z і запропонувати пропозиції його подальшого розвитку.

Ключові слова: ціннісна пропозиція, бренд, бренд роботодавця, оцінка бренду, покоління Z, працевлаштування.

JEL Classification: M51, M54, M31.

Introduction

The level of the Ukrainian economy development in wartime is characterized by factors that cause competition in the labor market for young and talented specialists: a decline in GDP, inflationary processes in the economy, demographic changes determined by migration and the involvement of a significant number of men in the ranks of the Armed Forces of Ukraine.

Deloitte, as a scientist, noted in his research that 32% of the modern population is representatives of Generation Z (Deloitte, 2021). According to a study by Dell Technologies (2020), the share of representatives of Generation Z in the total number of employees is 20%. It is, firstly, the largest among the working-age population, and secondly, the most productive and important for the development of the Ukrainian economy. Therefore, for employers to form an effective employer's brand (EB) and increase its competitiveness in the labor market, it is important to identify the factors of attractiveness from the side of representatives of generation Z.

Competition for highly qualified specialists is growing in the labor market, so companies are interested in standing out among competitors in order to attract the best specialists, and a strong EB helps them in these processes. The content and level of EB development is determined by the value proposition (VP), which identifies the perception of the company as a prestigious place to work according to certain characteristics.

The value proposition is usually considered a set of associations and tangible and intangible offers that a company employee receives (Pawar & Charak, 2015).

For the most part, the VP is aimed at retaining talents in the company and their further development (Pawar, 2016). Employees have complete and clear information about their future employer, while employers, for their part, must meet the expectations of potential employees and maintain a competitive position (Jha S. & Jha Sh., 2015).

The EB components of the value proposition directly affect the level of employee productivity, loyalty to the employer, increase the value of the

company from the perspective of employees and determine further communication in the company (Nagpal A. & Nagpal G., 2019). The employer's brand value proposition is also focused on internal customers are employees. Employees themselves have an impact on the formation of company values. Satisfaction feedback is obtained through the following tools: anonymous audience surveys, exit interviews with dismissed employees and analysis of labor market trends (Staniec & Kalińska-Kula, 2021). High-quality interaction between the employer and employee is the consistency between the desired and actual level of VP employer brand.

Daniel et al. (2020) classified employee needs according to employer attractiveness factors using the ERG (Existence, Relatedness, and Growth) theory established by Alderfer (1969), which is a further development of Maslow's hierarchy of needs theory. According to this theory, a person has three basic needs that they strive to satisfy: material existence needs interpersonal relationships with other people, and the search for opportunities for personal development.

HR consulting company Sibson Consulting proposed its own model for forming an employer's brand "Reward of Work" (ROW) (Seemiler & Grace, 2017). According to this model, which lists the best elements and processes for creating an attractive workplace, the employer's VP is determined by the following parameters:

compensation is material remuneration, which includes salary and additional payments;

benefits are cash payments for health insurance, pension provision, and the possibility of leaving the company at the employee's request;

work tasks are the level of satisfaction and involvement of the employee in fulfilling the tasks and goals set;

career is opportunities for professional development and career growth in the company;

involvement is the level of involvement of the employee in the corporate culture and the formation of a favorable atmosphere in the company (Seemiler & Grace, 2017).

The possibility of career development, the realization of personal values, corporate culture, material rewards, social responsibility and workspace are functional factors that form the employer's value proposition (Huang et al., 2012).

During online recruitment, there is also an impact of the components of the VP employer's brand on its attractiveness to potential candidates. However, the study of the EB competitiveness during online recruitment requires attention (Liu, 2020).

In the context of the informatization of society, the reputation of a company is determined by the completeness and content of career pages and pages of search sites, which, in turn, increases the competitiveness of the EB value proposition (Liu et al., 2018).

Despite the significant level of attention to determining the essence, evaluation and formation of the employer brand, further research is required to find tools to substantiate the substantive content of the EB value proposition from the perspective of generation Z.

The aim of the research is to substantiate a methodological approach to evaluating and improving the employer's brand value proposition based on the expectations of generation Z.

In the process of research, several hypotheses were put forward:

the *first* is the choice of companies for employment by representatives of generation Z is influenced by the EB value proposition, which is formed by each employer and broadcast on the labor market during personnel selection. To do this, it is necessary to assess the level of significance of the components of the VP employer's brand for representatives of generation Z;

the *second* is retail enterprises form their own EB to attract the younger generation and evaluate it in terms of the level of development of the VP components;

the *third* is to determine how much the current state of the employer's brand corresponds to the desired views of generation Z on it; it is advisable to determine the level of compliance of the BR with the requirements of representatives of generation Z with the justification of proposals for its further development.

The following methods were used in writing the article: theoretical generalization is to determine the components of the VP of the EB for generation Z; comparison and ranking are to determine the priorities of the components of the CP for generation Z and to determine their level of development at enterprises in the retail sector; graphical methods – to illustrate the results of the analysis; statistical analysis – to determine the EB compliance of the studied enterprises with the requirements of generation Z.

The materials for the research were the results of a survey of 1341 students on determining the VP priority of the EB. The audience of respondents includes 776 students without work experience and 565 students or graduates with work experience from 1 to 5 years.

The main part of the article considers the following issues: the first section is devoted to the professional and behavioral characteristics of generations X, Y, and Z, and also indicates the VP essence of the EB for generation Z; in the second, based on the results of a survey of students, the significance of the VP components of EB for generation Z is determined; the third section formulates methodological approaches to justify the directions for creating a desired employer's brand for generation Z.

1. The employer's brand value proposition from the perspective of generation Z

The Employer's brand Value Proposition (EVP) has a set of elements that create a unique and valuable offer for employees, helping to attract, motivate and retain talent. For graduates of educational institutions, it should be aimed at developing the professional and leadership qualities of future

candidates and the opportunity to grow in the company. Due to the specifics of generation Z, careful attention is required in the choice of communication methods at different stages of recruitment: brand awareness, initial assessment, interview, job offer and adaptation period (Jouany, 2024). *Table 1* shows the main characteristics of each of the three generations present in the labor market that are important for the formation and EB development.

Table 1

Comparative characteristics of generations X, Y and Z

Characteristic	Generation X	Generation Y (Millennials)	Generation Z
Year of birth	1965–1980	1981–1996	1997–2012
Technological literacy	Witnessed the advent of computers and the Internet	Grew up with the development of the Internet	Digital generation
Education	Importance of education, but more practical approach	Great emphasis on higher education	the Desire for Practical Knowledge
Social awareness	Growing attention to social issues	Highly involved in social issues	Inclusion and social justice
Flexibility	Balance between stability and adaptability	Adapt easily to change	Expecting flexibility in work
Work-Life Balance	Striving for stability and security	Highly value work-life balance	Desire for stability and well-being
Work Benefits	Stability, work ethic, career growth	Flexible schedule, development, feedback	Modern technologies, career opportunities

Source: compiled by (Daniel et al., 2020; Dzhulai et al.; 2022; Джогола, 2023; Jouany, 2024; Löffler & Giebe, 2021; Blu Ivy Group, 2021; Gomez et al., 2021; Jones, 2020; Anwar & Salo; 2024, Jana et al., 2023; Grgurić et al., 2023; Chen et al., 2022).

According to Table 1, it is possible to identify common and distinctive features of generations Y and Z, which will be useful when developing HR strategies, marketing campaigns or when studying consumer behavior patterns.

For generation Z, EB is a set of characteristics and activities aimed at creating a positive image of the company among users, taking into account the behavioral, psychological, economic and social views of their employees.

Generation Z replaces generation Y (Millennials), which today makes up the largest share of the world's population. As generation Z enters the labor market, the impact of their entry is predicted to be rapid and profound, extending to the workplace, consumption, technology, politics and culture. This generation is radically different from Millennials and has a unique perspective on careers and how to define success in life and work (Gomez et al., 2021).

In *Table 2* the main professional and behavioral characteristics of generations X, Y, and Z and the trends in the global economy are provided in which they were formed.

Table 2

Professional, behavioral characteristics of generations X, Y and Z and the trends of the global economy in which they were formed

Characteristics	Generation X	Generation Y (Millennials)	Generation Z
Professional	Stability, work ethic, career growth	Flexible schedule, development, feedback	Modern technology, career opportunities, multitasking, rapid learning
Behavioral	Loyalty to employer, independence and entrepreneurship	Strive for development, social awareness, multitasking	Social awareness, inclusivity, short attention span, digital socialization
Global economic trends	Stability orientation, traditional business	Startup growth, digital transformation	Globalization, rapid technological progress, development of the digital economy

Source: compiled by (Daniel et al., 2020; Dzhulai et al.; 2022; Джогола, 2023; Jouany, 2024; Löffler & Giebe, 2021; Blu Ivy Group, 2021; Gomez et al., 2021; Jones, 2020; Anwar & Salo; 2024, Jana et al., 2023; Grgurić et al., 2023; Chen et al., 2022).

The generalization of opinions reflected in *Tables 1–2* allows us to identify the main characteristics of representatives of generation Z in the labor market. Their age is up to 30 years. Professional indicators are: involvement in digital technologies, high technological awareness and ability to use new technologies, preference for choosing a remote or hybrid work mode, desire for rapid career growth and development, ability to quickly master new skills and knowledge, preference for working in a startup or small agencies, preference for an individual rather than a collective work format, priority for financial well-being, ability to work on several tasks simultaneously. Behavioral indicators include: interest in social justice and environmental issues, appreciation of diversity and inclusion in society and at work, preference for online communication over face-to-face meetings, preference for quick information retrieval, which affects attention span, tendency to choose opinion leaders among famous people on social networks, use of social media for communication and interaction with others, preference for acquiring new skills and knowledge through online learning, tendency to online shopping, volunteering and community activities, fast pace of life. Among the main trends in the global economy that have influenced the formation of the generation Z mentality are: the growth of a globally integrated economy, the modern development of digital technologies, the increasing importance of intellectual work and information technologies, the rapid development of new technologies such as artificial intelligence, blockchain, etc., lack of experience of life under communism, the growing importance of health and well-being at work and in life in general, the russian-ukrainian war, the leading positions of the USA and China in the global economy.

The current employer value proposition for graduates needs to be revised, taking into account the specifics of the Gen Z mentality and new approaches to HR management (Liu, 2020). In our opinion, the employer value proposition for Gen Z is a system of support, recognition, and corporate

values aimed at achieving the highest level of professional development of employees and candidates, taking into account their professional, behavioral, economic, and social needs.

2. The importance of employer’s brand value proposition components for generation Z

To determine the priority of the components of the value proposition for representatives of generation Z, an assessment of their level of significance was carried out. The student audience is young people born in 1995–2005 and, accordingly, is generation Z. A survey of students of Ukrainian universities and student organizations was conducted in the Telegram channels and Instagram pages of student councils. Each of the 1,341 surveyed students determined the priority of the employer’s brand value proposition for their own place of employment. The survey proposed to evaluate the components of the employer’s brand value proposition using a 4-point rating system. *Figure 1* shows the results of the survey.

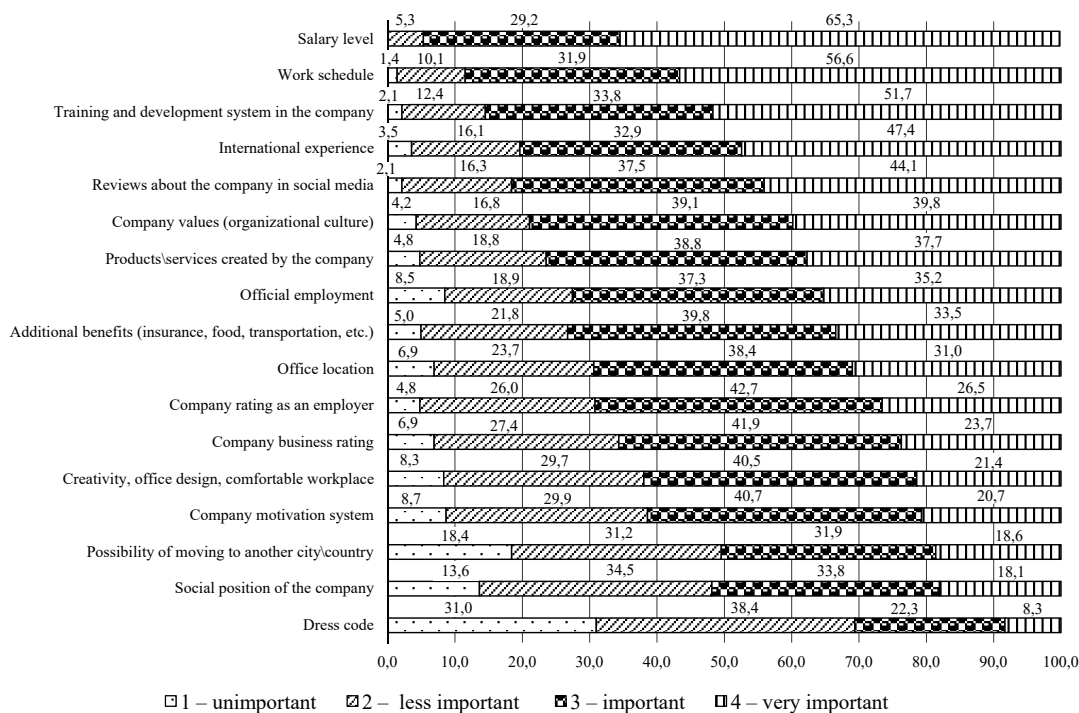


Figure 1. Survey results on the importance of employer’s brand value proposition components for generation Z

Source: compiled by the authors based on the results of an expert survey.

The average score (AS) was determined as a weighted average score according to the formula:

$$AS = 1 \cdot b_1 + 2 \cdot b_2 + 3 \cdot b_3 + 4 \cdot b_4, \tag{1}$$

where: b_1, b_2, b_3, b_4 are the proportion of respondents who scored 1, 2, 3 and 4 points, respectively.

The results of the calculations are shown in *Figure 2*.

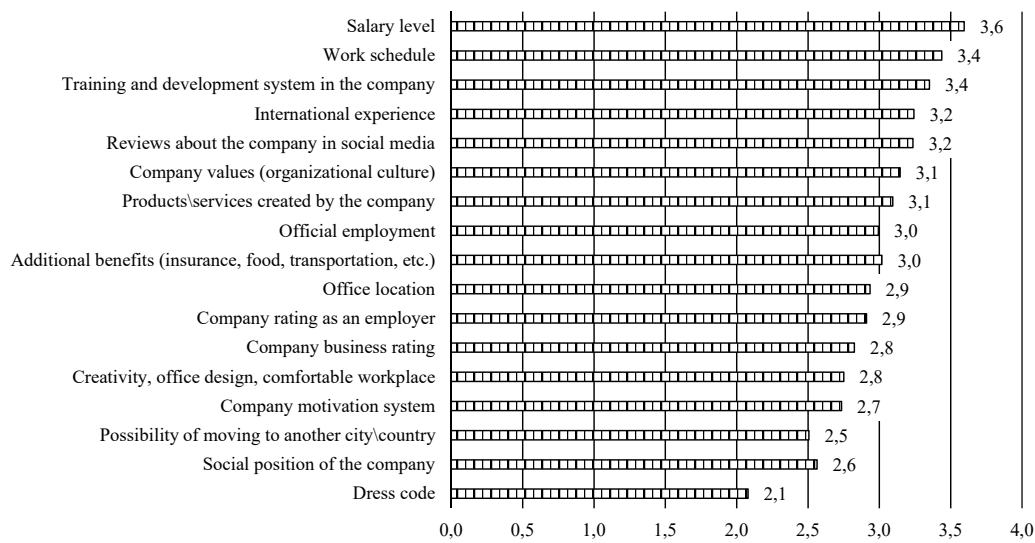


Figure 2. The average score of the results of assessing the importance of the components of the employer's brand value proposition for generation Z

Source: compiled by the authors based on the results of an expert survey.

For generation Z, the top 5 most significant VP components of the EB include: salary level, work schedule, training and development system in the company, international experience, reviews about the company in social media; accordingly, the least significant were determined to be: dress code, social position of the company, the possibility of moving to another location, the motivation system in the company and creativity/office design and a comfortable workplace.

If we compare the survey results with the general trends in the formation of generation Z (Table 2), we can note that such a behavioral characteristic as social awareness among Ukrainian youth does not have a high level of significance in the overall VP rating of the EB components. This to some extent reflects the level of development of society. Many young Ukrainians face economic uncertainty, which forces them to concentrate on the material aspects of work that guarantee a stable income and the opportunity for development. In addition, in the early stages of their careers, young people may prioritize their own development, training and career prospects, considering them more important than the company's social responsibility. Flexible working hours and the ability to combine work with personal interests and training are important to young people, which can push social responsibility issues to the background. Due to cases of companies not meeting their stated standards of responsibility, young people may be skeptical of such initiatives and prefer more practical aspects of work. Also, corporate social responsibility may not be sufficiently covered or promoted among young people, so other aspects of work may be more meaningful to them.

3. Creating a desirable employer’s brand image for generation Z

The rating of the components of the employer’s brand in this research was carried out in terms of their development at the enterprise. The level of development of these components reflects how effectively the company forms and maintains its image as an attractive employer for employees using certain characteristics.

These components were previously defined and assessed for each company studied in the retail sector. The categories of assessments of the components of the employer’s brand were previously defined, according to which the characteristics of the best and worst message about their condition were described. The assessment of the level of development of the components of the employer’s brand was carried out by leading specialists of the studied enterprises.

Figure 3 shows the result of determining the rank of value propositions by the state of their development at the studied enterprises. For identical values (rank of connections or number of duplicates), a rank was assigned that corresponds to the average value of their positions in ascending order.

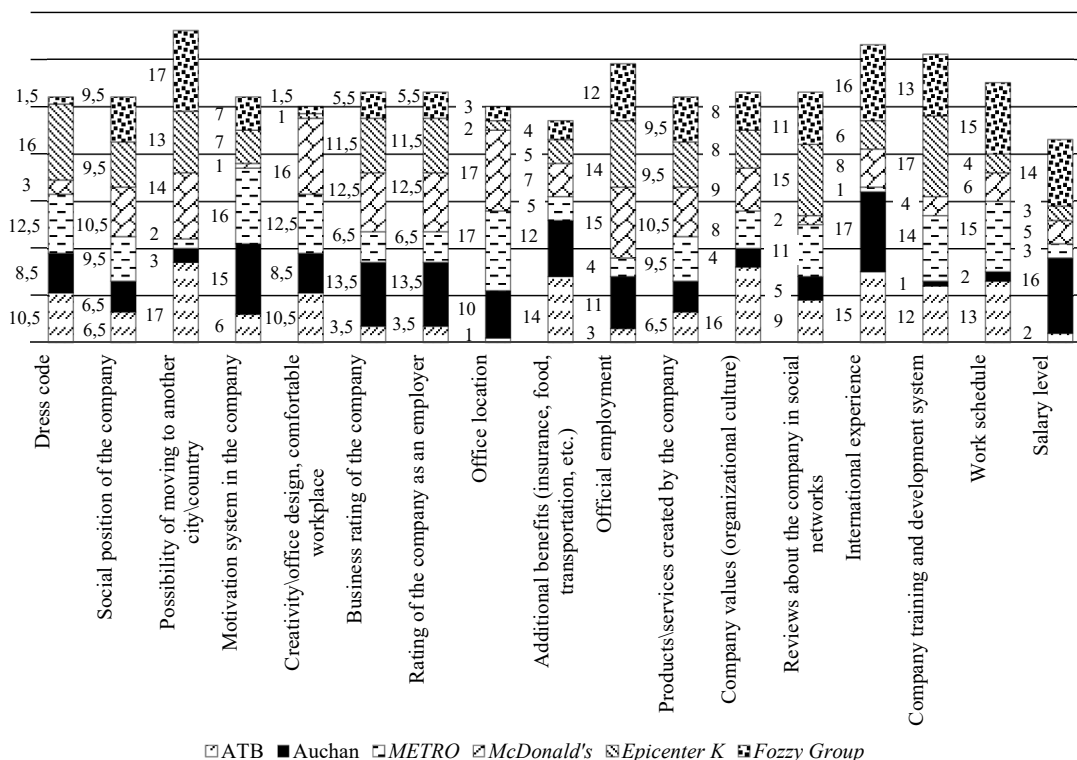


Figure 3. Ranks of components of the employer’s brand value proposition by the state of their development at enterprises

Source: compiled by the authors based on the results of expert assessment.

The results of this analysis allow companies to see the problematic issues of employer’s brand development that need to be resolved in order to attract representatives of generation Z to work.

To assess how much the level of development of the employer’s brand value propositions of the studied enterprises meets the expectations of representatives of generation Z, it is worth analyzing the degree of correspondence between the ratings of enterprises and the expectations of young people.

To determine the level of similarity, it is advisable to calculate the sum of the deviation modules of the ranks and the Spearman rank correlation coefficient.

The sum of the deviation modules between the desired and actual ranks of the components of the BR CP is calculated by the formula:

$$R_m = \sum_{i=1}^n |E_i - F_i|, \tag{2}$$

where: E_i is the desired ranks of the i -th component of the value proposition; F_i is the actual ranks of the i -th component of the value proposition; and i is the index of the component of the value proposition.

Spearman’s rank correlation coefficient (R_s) reflects the closeness of the relationship between two ranked variables, its value should be within $[-1;1]$:

$$R_s = \frac{\sum_{i=1}^n (E_i - E_{cep})(F_i - F_{cep})}{\sqrt{\sum_{i=1}^n (E_i - E_{cep})^2 \sum_{i=1}^n (F_i - F_{cep})^2}}, \tag{3}$$

where: n is the number of indicators that reflect the criterion; E_i is the desired ranks of the i th component of the value proposition; F_i is the actual ranks of the i th component of the value proposition; E_{ser} is the average value of E , F_{ser} is the average value of F , and i is the index of the component of the value proposition.

Spearman’s rank correlation coefficient is a nonparametric measure of the statistical dependence between the ranks of two independent statistical series. Thus, it allows us to assess the degree of connection between the ranks of value propositions identified by students as desirable and those that are actually present in the enterprise according to the results of the analysis. *Table 3* shows the results of the analysis of the connection between the ranks of the EB in terms of their development in the studied enterprises and their significance for generation Z.

Table 3

Assessment of the relevance of employer’s brand rankings of the studied enterprises to their importance for generation Z

Components of the BR CPU	ATB	Auchan	METRO	McDonald’s	Epicenter K	Fozzy Group
Sum of the deviation modulus from the desired estimate of generation Z (R_m)	73	83	94	75	101	96
Sum of squares of rank deviations	533.5	828.5	929.5	493	980	1072.5
Spearman’s rank correlation coefficient (R_s)	0.43106	-0.02486	-0.09944	0.46663	-0.14419	-0.31491

Source: compiled by the authors based on the results of an expert survey.

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The Spearman rank correlation coefficient estimate (see *Table 3*) indicates a positive average relationship between the ranks of the generation Z CEOs and the ATB and McDonald's enterprises. Thus, the expectations of generation Z regarding the EB CEOs are most consistent with the actual state of these enterprises. At other enterprises, the Spearman correlation coefficient is not statistically significant, which indicates a discrepancy between the EB CEOs and the desired image of a potential employer among representatives of generation Z. An important component of brand management is the formation of a desired employer image. To determine the deviation between the existing ranking of value propositions for each enterprise and the desired one from the point of view of representatives of generation Z, it is necessary to compare the actual ranks with the ideal or desired ones. The deviation can be calculated as the difference between these ranks for each CEO at the enterprise. If these differences are summed up, the overall level of discrepancy can be estimated. But it is also important to analyze which components of the EB CEOs require special attention. In *Table 4* it is represented these deviations for the studied enterprises for individual VP components of the EB.

Table 4

Deviations between the ranks of the development level of the value proposition components of the studied enterprises and their significance for generation Z

VP components of the EB	ATB	Auchan	METRO	McDonald's	Epicenter K	Fozzy Group
Salary level	0	14	1	3	1	12
Work schedule	10	-1	12	3	1	12
Training and development system in the company	11	0	13	3	16	12
International experience	3	5	-11	-4	-6	4
Motivation system in the company	2.5	-1.5	4.5	-4.5	8.5	4.5
Company values (organizational culture)	7	-5	-1	0	-1	-1
Products/services created by the company	-5.5	-5.5	-2.5	-1.5	-2.5	-2.5
Official employment	-1	7	0	11	10	8
Additional benefits (insurance, meals, transportation, etc.)	0	-2	-9	-7	-9	-10
Office location	-9	0	7	7	-8	-7
Company rating as an employer	-3	7	0	6	5	-1
Company reviews on social media	-3	7	0	6	5	-1
Creativity/office design, comfortable workplace	-6.5	-8.5	-4.5	-1	-16	-15.5
Company business rating	-0.5	8.5	9.5	-5.5	0.5	0.5
Possibility of moving to another city/country	1	-13	-14	-2	-3	1
Company Social Position	-8.5	-8.5	-5.5	-4.5	-5.5	-5.5
Dress Code	-1.5	-3.5	0.5	-9	4	-10.5

Source: compiled by the authors based on the results of an expert survey.

A high positive deviation indicates the need to develop and improve the value proposition in order to bring it into line with the expectations of young people. In the research, we propose to consider value propositions whose deviations from the desired level exceed 5 as requiring revision and development. A negative deviation indicates that the rank of development of this employer's brand value proposition at the enterprise exceeds the expectations of representatives of generation Z. This approach makes it possible to identify problems in the formation of the employer's brand for generation Z and is the basis for analyzing the current state of the employer's brand value proposition.

Therefore, ATB management should pay the most attention to the company's values, the training and development system, as well as the work schedule. As for Auchan, the important positions are the company's business rating, the company's rating as an employer, reviews on various portals, official employment, international experience and salary level. For METRO, it is important to focus on the company's business rating, office location, training and development system, and salary level. McDonald's should pay attention to improving reviews about the company on various platforms, the company's employer rating, office location, and formal employment. Epicenter K needs to improve the value propositions regarding formal employment, the company's image as an employer, and the training and development system. For Fozzy Group, the key elements are formal employment, training and development system, work schedule, and salary level. Although changes in the office location are not mandatory, improving some of these components can help attract young people and increase the attractiveness of the company as an employer.

In view of this, it is advisable to conduct a detailed analysis of what is effective and valuable for employees, what needs to be changed, as well as to identify problems and opportunities for developing the employer brand. At this stage, it is important to thoroughly approach the analysis of value propositions. A report on the main reasons for dismissals indicated by employees and the potential value proposition of the employer can be useful for this. After collecting responses from office employees, insights are sought that will allow identifying unexpected aspects of EB from the perspective of employees and assessing their impact on the entire network.

Based on an analysis of the dynamics of the effectiveness of indicators characterizing EB effectiveness, a report is generated identifying the needs for changes.

Conclusions

Employer branding should be considered in light of the demands of potential job seekers on the labor market. Generation Z as potential employees, attract employers who expect creativity, energy, and the ability to learn and develop with the company. However, to do this, companies need to create specific value propositions that meet the needs of this target audience.

According to the results of the survey, the following value propositions are of the highest importance for generation Z when choosing a place of work and internship: salary level, work schedule, and opportunities for training in the company. The least important are the dress code, the social position of the company, and the possibility of moving to another city or country. This indicates a balance between tangible (salary) and intangible (training opportunities) VPs when choosing an employer.

On the one hand, potential employees need to understand and evaluate the prospects for future employment; on the other hand, employers seek to reduce the cost of time and money to search for the necessary personnel. The openness, flexibility, and dynamism of generation Z make the value proposition of moving to another city or country unimportant for them. The lack of authority also affects the low priority of business rating and company reputation.

To create the desired employer's brand image, the deviations between the existing ranking of value propositions for each enterprise and the desired one from the point of view of representatives of generation Z were determined. This made it possible to identify for each studied enterprise the shortcomings in the development of specific value propositions that are important for generation Z. Understanding these shortcomings and problems in the EB development allows us to substantiate the directions of employer's brand development that are important for potential job seekers among young people. The main directions of future research include: development of the process of forming an employer brand; determination of the impact of the employer's brand on the company's performance.

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INVESTING IN NICHE MARKETPLACES: VALUE FOR LEADING COMPANIES

The role of strategic investors in the evolution of niche marketplaces, particularly in Ukraine, has been analyzed in the research. Automation and digitalization have become the key factors for efficiency in modern business. An important element of this process is a marketplace. They force traditional markets to adapt to new conditions. It is hypothesized that strategic investments in niche marketplaces contribute to long-term market development, leading to sustainable economic growth. The research was carried out through the analysis of literary sources, comparative analysis and the case study method. The fact that venture capital funds usually invest in marketplaces targeting high future returns was shown as a result of our investigation. However, strategic investors have a different approach. They direct their investments not only towards making a profit but also towards market development, creating long-term value, implementing innovations, advancing industry growth, building communication channels with customers, and obtaining valuable data for a better understanding of customer needs and market trends, as well as attracting organic traffic to meet specific market demands. Niche platforms among all variations of marketplaces deserve special attention, as they often represent unique opportunities. Such companies as EpicentrK.ua and Cropwise Operations are among examples of strategic investments in these marketplaces. They demonstrate how technological solutions can boost efficiency and productivity, ultimately leading to sustainable economic growth and development. These examples demonstrate that strategic investors prioritize developing market structures and creating high value for consumers.

Keywords: market, marketplace, niche marketplace, strategic investor, venture fund.

JEL Classification: G24, L22, O31.



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ІНВЕСТИЦІЇ У НІШЕВІ МАРКЕТПЛЕЙСИ: ЦІННІСТЬ ДЛЯ ПРОВІДНИХ КОМПАНІЙ

Досліджено роль стратегічних інвесторів у розвитку нішевих маркетплейсів, зокрема в Україні. У сучасному бізнесі автоматизація та цифровізація стали ключовими факторами ефективності, і маркетплейси як елемент цього процесу змушують традиційні ринки адаптуватися до нових умов. Висунуто гіпотезу, що стратегічні інвестиції у нішеві маркетплейси сприяють довгостроковому розвитку ринку, що веде до сталого економічного зростання. Дослідження базується на аналізі літературних джерел, порівняльному аналізі та методі кейс-стаді. Результати дослідження показують, що венчурні інвестори вкладають кошти в маркетплейси з надією на високі прибутки у майбутньому. Водночас стратегічні інвестори спрямовують свої інвестиції не лише на отримання прибутку, а й на розвиток ринку, створення довгострокової цінності, впровадження інновацій, розвиток галузі, побудови каналів комунікації та отримання даних для кращого розуміння потреб клієнтів і ринкових тенденцій, приваблення органічного трафіку. Особливої уваги серед усіх варіацій маркетплейсів заслуговують нішеві, оскільки вони пропонують унікальні можливості. Прикладами успішного стратегічного інвестування є EpicentrK.ua та Cropwise Operations. Вони ілюструють, як інвестиції в технології підвищують ефективність і продуктивність різних секторів, сприяючи стійкому економічному зростанню та розвитку. Ці приклади підтверджують, що стратегічні інвестори орієнтовані на розвиток ринкових структур і створення високої цінності для споживачів.

Ключові слова: ринок, маркетплейс, нішевий маркетплейс, стратегічний інвестор, венчурний фонд.

Introduction

Modern business management is only possible with the automation and digitalization of numerous processes. That is why the phenomenon known as the "marketplace" has become an integral part of the modern economy, promoting business development across different economic eras (Timmers, 1999) and becoming a strategic solution for many companies (Brehmer & Johansson, 2001). Brunn et al. (2002) define the concept of a "marketplace" as an interactive business community where multiple companies can engage in e-commerce. At the same time, Wibawa et al. (2023) view it as a third-party website that connects buyers and sellers. It is worth noting that all marketplaces are characterized by significant investment and operational costs, which are recouped only if a substantial market share is captured, and even then, not always. Therefore, not all created marketplaces can be successful, as becoming one of the major market players is quite a challenging task (Brunn et al., 2002).

Niche marketplaces, which cater to specific, often conservative market segments, are particularly sensitive to these risks. However, they attract strategic investors who are interested not only in profit but also in achieving strategic leadership to develop the industry or their brand. This allows them to influence the organization of market structures, determining the organizational relationships between business entities and shaping the overall market structure (Cardona & Sánchez-Losada, 2015; Mousa et al., 2021). They contribute to the growth and resilience of these markets, creating conditions for the successful functioning of specialized products and services.

This research is the initial stage in achieving our ambitious aim and it is exploratory and descriptive one. Its relevance is determined by modern trends in digital business transformation, the importance of niche marketplaces, and the role of strategic investors in ensuring the sustainable development of this type of market structure. Therefore, this research aims to analyze the role of strategic market players in the evolution of niche marketplaces, particularly in Ukraine. It is aimed to identify how strategic players contribute to creating high value for consumers and ensuring sustainable growth in niche markets. The key tasks are determined the main characteristics of strategic investments in niche marketplaces, assessed their impact on market development, and analyzed successful cases. The results of the research will lay the foundation for further research and development in this area, fostering a deeper understanding and effective resolution of the tasks at hand.

The research hypothesis is that strategic investments in niche marketplaces contribute to the long-term development of the market and the formation of sustainable business models, which ensures sustainable economic growth in the conditions of digitization and automation. A comprehensive methodology is used to confirm this hypothesis, including market analysis and comparing the results of companies that receive strategic

investments with those that attract venture capital. The main scientific methods of the research include literature analysis to study different concepts of "marketplaces" and investment models, a case study method for detailed consideration of specific examples, as well as comparative analysis that emphasizes the importance of strategic investments in creating long-term value and sustainable development of market structures.

The scientific novelty of the research consists of revealing the features of strategic investments, emphasizing successful examples of such investments in Ukrainian marketplaces. In addition, the importance of the development of niche marketplaces as a separate market segment, which has significant advantages compared to universal platforms, is emphasized. Moreover, niche marketplaces offer investors unique opportunities, thanks to a deeper understanding of the specific needs of consumers and the ability to better adapt to these needs.

The content structure of the main part of the research consists of two parts. The first chapter examines the main concepts and classifications of marketplaces and their role in the market. In the second there is a comparison of venture capital and strategic investment with their influence on the development of the market and niche platforms is carried out. In addition, this part provides specific examples of strategic investment in Ukrainian marketplaces, which gives a real idea of the possibilities of market development in conditions of digitalization and investment strategies at the local level.

1. Digital platforms: redefining traditional markets. The strategic importance of marketplaces

Markets play a key role in supporting economic activity by ensuring and stimulating economic growth. They contribute to increasing income and savings, which leads to market development and enhances economic efficiency. Internal competition stimulates growth by introducing technologies important for the efficient functioning of economies (Aghion et al., 1999). Achieving market equilibrium amid economic growth is complex and requires the influence of various factors, such as macroeconomic proportions, market competition, stimulation of aggregate demand through consumption, savings, investment, government regulation, and availability of resources (Vidobora, 2022).

Today, digital platforms have become the defining organizational forms of the digital age (Gawer, 2021), transforming traditional markets and forcing them to adapt to new conditions (Bogers et al., 2019). The implementation of digital technologies has changed how new products, services, and business models are developed, integrating these technologies into products to make them more functional and efficient (Berente et al., 2014).

One of the most common types of digital platforms are marketplaces, which play a crucial role in the strategic development of companies by

MARKETING

providing tools to strengthen market positions, increase value, and achieve competitive advantages. Traditionally, well-known marketplaces are categorized (*Table 1*) by participant type, theme, target audience, communication methods with customers, and monetization strategies (Nikolaienko & Ivanova, 2021; Hlinenko & Dainovsky, 2024; Tran et al., 2020).

Table 1

Types of marketplaces

Type	Characteristics (examples)
<i>by participant type</i>	
B2B	Business sells to business, with parties being equal (alibaba.com, thomas.net)
B2C	The business sells directly to consumers, with parties being unequal (amazon.com, walmart.com, rozetka.com.ua, prom.ua)
C2C або P2P	Consumer sells to consumer, parties are equal (etsy.com, ebay.com, olx.ua, blablacar.com)
<i>by theme</i>	
Product	These platforms allow the sale of various products (ebay.com, rozetka.com.ua)
Service	These platforms facilitate the sale of services (uber.com, airbnb.com)
Information	These platforms enable users to view and share content (youtube.com, tripadvisor.com)
Investment/ Crowdfunding	These platforms are designed for investment and fundraising activities (binance.com, kickstarter.com, welfare.com)
<i>by target audience</i>	
Universal	Mass-market format (amazon.com, rozetka.com.ua, prom.ua)
Niche	Specialized (allo.ua, tabletki.ua, epicentrk.ua)
Service-Based	Sells services (uber.com, kabanchik.com)
<i>by target audience</i>	
Online to offline	The buyer sees the product or service online but receives it offline (rozetka.com.ua, prom.ua)
Online commerce	Search, purchase, and use happen online (netflix.com, megogo.net)
<i>by the method of monetization of own resources</i>	
Monetization through the Sale of Goods and Services	
Monetization through Traffic	
Monetization through Actions Performed by the Buyer or Seller	
Monetization through Advertising	
Monetization through Additional Services	
<i>by coverage indicator</i>	
Global	No Restrictions on Niches and Categories (amazon.com)
Horizontal	Operate in One Direction but Across Multiple Niches (rozetka.com.ua, prom.ua)
Vertical	Offer Products from Different Manufacturers but Within One Category (etsy.com, allo.ua, tabletki.ua, epicentrk.ua)
<i>hybrid integration</i>	
Marketplace In	A Platform for Selling Goods or Services from Other Retail Sellers
Marketplace Out	Selling Products or Services on Other Platforms
<i>"new types" of marketplaces</i>	
on-demand	On-Demand Marketplaces (airbnb.com, uber.com, domslugba.com)
passion economy marketplaces	Unique Content for Niche Audiences (substack.com, twitch. tv, udemy.com)
Managed	Value Creation Platforms (uber.com, lyft.com)
community-driven	Value Marketplaces with Community Building (abebooks.com)
SaaS-enabled	Marketplaces with SaaS Support that can be B2B, B2C, or C2C (agrostar.in, docplanner.com, udemy.com, opentable.com)
Decentralized	Direct Connection Marketplaces (openbazaar.org, oceanprotocol.com, openminded.com)
API as marketplace	No standard interface, transactions occur at the infrastructure level (allthingsdev.co, velexa.com)

Source: based on research data by (Nikolaienko & Ivanova, 2021; Hlinenko & Daynovskyy, 2024; Tran et al., 2020; Dave, 2024; Lee, 2022).

At the same time, Tran et al. (2020) identified several "new types" of marketplaces, such as "on-demand", "passion economy marketplaces", "managed", "community-driven", "SaaS-enabled", "decentralized", and "API as a marketplace". Dave (2024) also introduces marketplaces classified by coverage and hybrid integration. Interestingly, as Lee (2022) notes, universal marketplaces have expanded horizontally to such an extent that they could not adequately address the diverse needs of their customers and thus, unintentionally, gave rise to a vertical type of trading platform. Focusing on creating a marketplace allows companies to meet customer needs and build loyalty, leading to competitive advantages and sustainable success (Appiah-Nimo & Chovancová, 2020).

For example, the marketplace Etsy allows small producers to find their audience and expand their market reach easily (Luckman, 2013). Conversely, Amazon uses machine learning algorithms to personalize product recommendations, increasing sales and customer satisfaction (Lai et al., 2017). Meanwhile, Flaga Entertainment Corporation demonstrates how digital platforms can create new revenue streams and enhance the customer experience (Katsamakos & Saharia, 2019).

Such online marketplaces help brands build strong customer relationships, highlighting their importance for brand development and increasing brand presence (Hind & Aomari, 2016). In addition, they play a crucial role in optimizing supply chains and logistics. Implementing cross-docking facilities reduces inventory and improves service quality, optimizing distribution and reducing costs (Sheikh & Rana, 2014). Cost reduction, inventory minimization, and quick responses to market demands are key to success, while outsourcing and effective supplier relationships enhance flexibility (Golini & Kalchschmid, 2011). A prime example of such a strategy is the marketplace Alibaba, which enables businesses to quickly find suppliers and make profitable deals (Romagnoli & Garbelli, 2017). At the same time, creating ecosystems and communities around marketplaces provides significant value, contributing to competitive advantages, sustainable business practices, and overall well-being. Joo and Shin (2018) note that such ecosystems ensure efficiency, value co-creation, faster operations with lower costs, and risk distribution.

2. Strategic and venture investments. Case examples

The importance of business sustainability and its role in developing various industries and markets, as well as investing in marketplaces at different stages of their development, remains intriguing. Investing in marketplaces, like other startups, depends on the investor's goals: profit generation (venture capital investment) or achieving strategic objectives (strategic investment) (Hellmann, 2002). Specifically, venture investments focus on high-risk projects with potentially high returns and actively

MARKETING

diversify to reduce risks. They help startups and young companies secure the necessary funding for research and development, thus fostering growth and innovation (Christofidis & Debande, 2001). Interestingly, more attention is given to the quality of the management team than to the company's past performance or products (Timmons & Bygrave, 1986). Venture investments aim for quick profits and diverse exit strategies, such as IPOs, acquisitions, secondary sales, buyouts, and liquidations (Hellmann & Puri, 1999). Whether financing a universal or niche marketplace, the same principles apply.

Examples of venture investments in marketplaces, such as Airbnb and Uber (*Table 2*), demonstrate how early-stage funding contributed to their rapid growth and market leadership (Greenwood et al., 2022).

Table 2

Marketplaces driven by venture capital investment in their early stages

Indicator	Airbnb	Uber
	2008	2009
Initial funding, USD million	7.2	1.6
Total funding, USD billion	6.4	25.2
Current valuation, USD billion	113	72
Year of IPO	2020	2019

Source: based on research data by Greenwood et al. (2022).

Note: The IPO (Initial Public Offering) year refers to the year when a company first went public by issuing its shares on the stock market (Yi J.-H., 2001).

At the same time, venture investing can also occur when a company is already quite mature. This is exemplified by the online hypermarket ROZETKA, which received investment from the venture fund Horizon Capital while it was already a leader in the sales of electronics and household appliances (Vlasenko & Yurasov, 2015). Similarly, this fund has invested in other Ukrainian niche marketplaces, such as Makeup.ua and Liki24 (Horizon Capital, Portfolio, 2024).

Conversely, strategic investors focus on creating long-term value, integrating with businesses, and impacting the market. They provide additional resources and positioning strategies that help increase the market value of the companies in which they invest (Huang, 2019). Such investments develop a stable and sustainable business environment that facilitates the commercialization of innovative products and enhances competitive advantages (Park & Steensma, 2013).

Funding for niche marketplaces provides not only capital but also access to resources and expertise, which contributes to the growth and success of these startups (Hellmann, 2002). Their activities focus on specific types of goods or categories or certain target audiences. Niche marketplaces can compete with universal platforms due to their carefully curated selection of products, deeper understanding of customer needs, and more convenient

user experience. The main goal is not just to sell a product or service but to gain market leadership, which is closely intertwined with the investor's passion and experience (Khmelovskiy, 2024; Lee, 2022).

Strategic investors actively employ methodological approaches and analytical techniques to evaluate startups and their potential, allowing them to reduce risks and maximize profits. For example, platforms for startups and investors that utilize deep learning algorithms can identify promising startups and predict potential investment returns (Auti et al., 2023). Thus, strategic investments in niche marketplace startups offer significant advantages through access to new technologies, expertise, and market opportunities, fostering innovation and company growth.

A prime instance of such funding is Siemens, which acquired and invested in the MindSphere platform. This platform enables companies to connect their industrial machines to a cloud system for data analysis and optimization of manufacturing processes. As a result, Siemens strengthened its market position in industrial solutions and expanded opportunities for integration and big data processing (Petrik & Herzwurm, 2019).

Similarly, Amazon invested in AWS Marketplace, which allows customers to find, purchase, and use software and services running on Amazon Web Services. This investment expanded Amazon's presence in the cloud business, created new revenue opportunities, and increased customer value through a wide range of software solutions (Yuan, 2023).

Another example is Alibaba, which created Alibaba Cloud and invested in startups working in cloud computing and digital technologies. This expansion allowed them to offer new solutions for businesses and individual users in international markets, strengthening their competitiveness (Zhang & Ravishankar, 2018; Li, 2022).

A successful illustration of securing funding in the Ukrainian market is the development of the niche marketplace epicentrk.ua. Launched in 2020 based on the online store of the construction hypermarket chain LLC "Epicenter-K", this project exemplifies strategic investing. The business founders invested UAH 2 billion in its development, and by 2024, the platform became self-sufficient, no longer requiring additional investments. This success is due not only to financial investments but also to a personalized approach for each entrepreneur. Currently, the marketplace serves 7 000 entrepreneurs, offering individual terms of cooperation. An important aspect is that the volume of a company's production does not affect the possibility of collaboration, as the company adheres to a principle of personalized engagement with each merchant. New partners can expect a preferential period of operation in the marketplace, facilitating the start and providing support during the initial stages of cooperation (Brovinska, 2024; Hlinenko & Dainovsky, 2024). This success story confirms the importance of strategic investing and a flexible approach to business development, allowing for high achievement and promoting entrepreneurship in Ukraine.

At the same time, despite not being directly connected to marketplaces, it is worthwhile to consider an example of investment in a technological product that demonstrates how a strategic business can develop a market, gather data, and create communication channels with users. One example of a Ukrainian startup that received strategic investments is the IT company Cropio, now known as Cropwise Operations (Syngenta Ukraine, 2021, March 30). This satellite field management system allows farmers to map growth stages and crop conditions in real-time, identify problem areas, and obtain accurate weather forecasts (Apucăloaie et al., 2022). The system also offers tools for yield planning, cost and efficiency analysis, resource management, and optimization of farming activities (Kwanmuang et al., 2020). In 2019, this company was acquired by Syngenta Group, a major player in the agrotechnology sector, and incorporated into a new business structure called Syngenta Digital. It is worth noting that the Syngenta Group was established based on one of the world's leading seed and agricultural chemical suppliers, Syngenta, which was acquired by the Chinese corporation ChemChina in 2015 (Łopacińska, 2021).

This example demonstrates how investing in technological solutions can lead to significant improvements across various industries. Innovations like Cropwise Operations enable the agricultural sector to greatly enhance its efficiency and productivity. Investments in such technologies not only support businesses but also contribute to the industry's overall development, increasing competitiveness and promoting sustainable growth.

Conclusions

Automation and digitalization have become integral to modern business, ensuring efficiency, growth, and competitiveness. Digital platforms, such as marketplaces, open new horizons for businesses and customers, but several key aspects should be considered.

Marketplaces are not always profitable from the beginning. They often require significant investment and time to achieve self-sufficiency. Initially, marketplaces undergo a phase of substantial expenses and uncertainty, during which their viability is in question. This period demands innovation and strategic thinking.

Venture investors invest with the hope of high future returns. They usually focus on rapid growth and entering new markets, risking large amounts of capital for potential rewards. Their decisions are often based on aggressive business plans and promises of quick returns on investment.

Strategic investors invest not only for profit but also for market development and long-term value creation. Their approach is based on a deep understanding of market structures and needs, allowing them to make investments aimed at sustainable development.

They invest in order to:

Develop the industry: to support innovations and enhance business models that contribute to the overall growth of the market.

Build communication channels with customers: to create and maintain effective ways of interacting with end consumers.

Research the market and its consumers: to obtain valuable data and insights to better understand customer needs and market trends.

Attract organic traffic: to increase the natural influx of customers through high-quality products and services that meet specific market needs.

Among all the variations of marketplaces, niche platforms deserve special attention. Their primary philosophy focuses more on market development than on profit generation. This is where strategic investors become key players, supporting and enhancing business models that offer unique products and services to meet specific customer needs.

Thus, the conducted research lays the foundation for further studies of niche marketplaces and their financing by strategic investors. Special attention will be paid to analyzing their marketing strategies, impact on market structures, and methods of attracting and retaining customers in specific market segments. This research will provide a deeper understanding of how strategic investments can contribute to sustainable development and innovation in various sectors of the economy, opening new prospects for businesses and society as a whole.

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THE CONCEPT OF METAMARKETING IN THE EXPERIENCE ECONOMY

The new conditions of the digital environment and the formation of the impression economy have caused the transformation of marketing, which involves the introduction of innovative strategies, methods and tools of digital marketing into the activities of enterprises to form a positive immersive experience for customers on the basis of impressions created by enterprises. The aim of the article is to substantiate the concept of metamarketing, which is based on the offer of impressions in the modern conditions of the digital environment. The hypothesis is formulated: the formation of the impression economy in the digital environment has led to the transformation of marketing, which includes digital marketing and impression marketing. The convergence of these types of marketing forms its new concept, in particular metamarketing, which involves the application of digital marketing methods and tools to create and provide impressions in physical and digital space. General scientific and special methods were used: analysis and synthesis, systematic, comparison, logical generalization. The research carried out: substantiation of the importance of impressions for producers and buyers; systematization of strategic directions for ensuring customer impressions; highlighting key elements and principles of the impression economy and formulating the author's definition of the "impression economy in the digital environment"; systematization of the conditions of application, management decisions, limitations and risks of marketing concepts in evolutionary development; substantiation of the concept and formulation of the definition of metamarketing for forming impressions of enterprise customers in the digital environment.

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КОНЦЕПЦІЯ МЕТАМАРКЕТИНГУ В ЕКОНОМІЦІ ВРАЖЕНЬ

Нові умови цифрового середовища та становлення економіки вражень обумовили трансформацію маркетингу, що передбачає впровадження у діяльність підприємств інноваційних стратегій, методів та інструментів цифрового маркетингу для формування позитивного імерсійного досвіду клієнтів на основі створюваних підприємствами вражень. Метою статті є обґрунтування концепції метамаркетингу, що базується на пропозиції вражень у сучасних умовах цифрового середовища. Сформульовано гіпотезу: становлення економіки вражень у цифровому середовищі призвело до трансформації маркетингу, який включає цифровий маркетинг і маркетинг вражень. Конвергенція цих видів маркетингу формує його нову концепцію, зокрема метамаркетинг, що передбачає застосування методів та інструментів цифрового маркетингу для створення та надання вражень у фізичному й цифровому просторі. Використано загальнонаукові та спеціальні методи: аналізу та синтезу, системний, порівняння, логічного узагальнення. У ході дослідження здійснено: обґрунтування значення вражень для виробників та покупців; систематизація стратегічних напрямів забезпечення вражень клієнтів; виділення ключових елементів та принципів економіки вражень і формулювання авторського визначення дефініції "економіка вражень у цифровому середовищі"; систематизація умов застосування, управлінських рішень, обмежень і ризиків концепції маркетингу в еволюційному розвитку; обґрунтування концепції та формулювання визначення метамаркетингу для формування вражень клієнтів підприємств у цифровому середовищі.



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Keywords: impressions, impression economy, digital marketing, impression marketing, customer centricity, design, branding, personalization, digital technologies, metamarketing, immersive customer experience.

Ключові слова: враження, економіка вражень, цифровий маркетинг, маркетинг вражень, клієнтоцентричність, дизайн, брендинг, персоналізація, цифрові технології, метамаркетинг, імерсійний досвід клієнтів.

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Introduction

Changing consumer behavior in the context of globalization, urbanization, and the rapid spread of digital technologies requires companies to adapt existing and create new business models, taking into account new patterns of behavior on the consumer's digital journey and high customer expectations of companies' value propositions. The new conditions of the digital environment and the emergence of the impression economy have led to a transformation of marketing, which involves the introduction of innovative digital marketing (DM) strategies, methods, and tools into the activities of companies to create a positive immersive customer experience based on customer impressions created by companies.

The concept of an impression economy focused on consumer feelings was pioneered by Pine II and Gilmore (2021/1999), who in their fundamental work "The Experience Economy" identified the evolution of consumer value from the supply of raw materials, goods, and services to the supply of experiences. Continuing to explore the factors influencing the future of the experience economy, Pine II (2023) identified the active transition of consumers to the digital environment due to COVID-19, which has shaped a new individual consumer experience, to ensure which, by preserving the unique time spent with the company and increasing its value, he emphasizes strategies and innovations in creating value through experiences.

The research of modern scholars is based mainly on the work of B. Joseph Pine II and James H. Gilmore "The Experience Economy". Thus, the work of Boiarska (2016) demonstrates the beginning of the study of the economy of impressions by a scientist, while the author focuses on the essence of the concept of "economy of impressions" and notes, following Pine II and Gilmore, that this is a type of economy in which human feelings and experiences become central to the economic activity of an enterprise. In addition, the author emphasizes that impressions can be both a final product and a tool for promoting traditional goods. The same division in identifying impressions is followed by Zaitseva and Fursov (2019a). Agreeing with the conclusions in the authors' works, we note that changing consumer behavior towards individualization and digitalization of consumption involves the formation of customer experience by enterprises through providing

impressions at every point of contact with consumers, both online and offline, which will ensure the integrity of the experience and sustainable positive associations with the product, brand, and company.

Chubukova and Yarenko (2016) define the experience economy as a new type of economy based on the psychological need of society for emotions and new impressions of consumers. Boiko and Gudzenko (2019) consider the experience economy as emotional capitalism in a socio-cultural context. The empirical results of the study confirm the actualization of the human need for emotional pleasure and impressions from goods and services. That is, the desire to receive emotional pleasure and impressions is a natural need of people, but today consumers have clearly formed expectations regarding the satisfaction of this need precisely from goods and services for which they are willing to pay a higher price. Sadchenko and Robul (2020) in their study of the essence of the experience economy focused on the economic and ecological component of creating a marketing space of the experience economy, which makes it possible to form a higher price for goods and services, in particular due to original services of impressions from a product or service.

A thorough approach to the study of the impression economy was taken by Yastremska (2024). Exploring the theoretical and methodological basis of the phenomenon of the impression economy, she emphasizes that modern consumers of goods and services need not only emotions, but also experiences that they will remember and in the long term will be willing to repeat.

In general, the analyzed studies repeat the conclusion about the paradigm shift, the consideration of impressions as a source of added value, the connection of impressions with innovations, descriptions of the proposed theoretical models, etc. are provided. However, there is a lack of applied marketing approaches and methods for creating and providing impressions to consumers, which is due to the diversity of approaches and, accordingly, the lack of a holistic marketing concept that includes both DM and impression marketing and is based on impressions in the digital environment.

The purpose of the article is to substantiate the concept of metamarketing, which is based on the offer of impressions in the modern conditions of the digital environment. To achieve this goal, it is necessary to identify strategic directions for ensuring the impressions of enterprise customers; to highlight the key elements and principles of the impression economy; to investigate the evolution of basic concepts of marketing management from the end of the 19th century to the present; to substantiate the concept of metamarketing in the modern conditions of the digital environment for ensuring the impressions of enterprise customers.

To achieve this goal, the hypothesis is formulated that the emergence of the impression economy in the digital environment has led to the

transformation of marketing into a composite function that includes DM and impression marketing. The convergence of these types of marketing forms its new concept, namely metamarketing, which involves the use of DM methods and tools to create and provide impressions to consumers in the digital environment, which includes physical and digital space.

To test the hypothesis, the following general scientific and special research methods were used: analysis and synthesis, system, comparison (to identify strategic directions for ensuring the impressions of enterprise customers; to systematize the conditions of application, management decisions, limitations and risks of marketing concepts in evolutionary development; to substantiate the concept of metamarketing in the economy of impressions); logical generalization (to formulate conclusions regarding the conducted research).

In the main part of the article, based on the identified strategic directions for ensuring impressions, key elements and principles of the impression economy, and researched marketing concepts, the concept of metamarketing for forming impressions of enterprise customers in the digital environment is substantiated.

1. Strategic directions for ensuring consumer experiences

Rapid changes in people's values and behaviour, as well as the rapid development of digital technologies in society, digital transformation in business and marketing indicate that in 2019–2020 an institutional revolution took place, associated with the development of digital ecosystems, the catalyst for which was the COVID-19 pandemic. "Changes in the institutional environment shape new conditions for economic activity" (Umantsiv, 2021, p. 274). The current stage of socio-economic development is characterized by the following factors: the development of the information society and the knowledge economy; the development of digital technologies and the formation of the digital economy; the recognition in economic theory of human irrationality in the decision-making process under conditions of choice and the formation of behavioural economics; a change in consumer value for people and the formation of the impression economy. The process of formation of the listed concepts occurs almost simultaneously, and all of them have an impact on each other and on the socio-economic development of society, while historically the formation of the impression economy is a logical result of the development and interpenetration of the knowledge economy, digital and behavioural economies. Digital technologies expand the possibilities of interaction between enterprises and consumers by creating impressions and forming a holistic immersive experience for customers. And just like behavioural economics, impression economics is based on people's

psychology and emotions. However, the evolution of value, for which people are willing to pay a higher price, is fundamental to the experience economy.

The peculiarity of experiences is that they can be both a separate product (amusement parks, immersive theatre, 7-D cinemas, various shows, etc.), and a way of forming demand and selling goods and services in any field of activity. Planning experiences as an economic offer with the aim of forming demand belongs to the marketing function of the enterprise. Since the experience economy involves a conceptual change in economic relations between sellers and buyers based on changes in consumer behaviour and economic offer, this requires new approaches to the interaction and promotion of goods and services in all areas of human activity. The newest type of economy involves the transformation of business models and, accordingly, the concept of marketing, which in the digital environment is transformed into digital and further, taking into account the creation and promotion of experiences, is transformed into metamarketing (Kotler et al., 2021).

A feature of impressions, associated with the peculiarity of human brain activity, is their memorability. Over time, a person may forget the details of certain impressions, but the feelings from their own experience remain forever, even if at this moment in time the person does not remember it. Therefore, marketing uses various psychological triggers that can return a person to impressions and emotional experiences through reminders. In addition, according to Dan Ariely, people's irrationality is predictable, that is, one that can be influenced through feelings and lead them to actions planned by the enterprise (Ariely, 2008). For this purpose, DM and branding tools are actively used today.

The results of the analysis of the above scientific sources allow us to highlight and supplement the meaning of impressions for sellers and buyers. So, *impressions* are:

for sellers (manufacturers): an economic offer, a source of added value, a source of competitive advantages, attracting consumers to create value, the possibility of increasing the price of the product, effective promotion through the sales funnel, the formation of a positive customer experience, increasing consumer loyalty;

for buyers: emotions, feelings, experiences; the formation of life experience; co-creation in creating value for oneself; satisfaction of needs; accumulation of customer experience; participation in the processes of accumulating information in social memory.

This division made it possible to determine the strategic directions of providing impressions on the part of the company for consumers: client-centricity as a corporate culture; design of (product, website, mobile site and application, content, etc.); branding; personalization of the offer; experience design at every point of contact on the consumer's journey; marketing strategies; digital technologies; digital marketing methods and tools.

Client-centricity. The experience economy, like the knowledge economy, digital and behavioural economies, is customer-oriented, but unlike the customer-oriented nature of the digital and behavioural economies, the experience economy is customer-centric. In scientific research, customer orientation and customer centricity are often equated (Khalina & Vasylieva, 2018; Komandrovskaya et al., 2019; Rynkevych, 2020; Kalycheva et al., 2022). These concepts are similar, but there is a fine line between them. Customer orientation is based on identifying and satisfying needs, managing consumer loyalty based on customer databases, using CRM systems, segmenting the target audience, creating personalized offers, improving products and services, etc. (Trushkina, 2020; Obruch et al., 2021; Zavadskaya, 2022). Therefore, customer orientation can be explained more by technical aspects of the company's work with consumers as separate segments, according to the relevant rules and procedures. Customer centricity is a continuation of the concept of customer orientation (Savytska, 2020; Marchenko, 2021; Riepina & Potiienko, 2023) and additionally includes the establishment and development of partnership and friendly relations with customers, that is, it is a concept of humanity and emotional response. Customer centricity allows you to focus on mutual understanding and cooperation between the company and customers based on trust, economic ethics and common human values, which the company should embed in its corporate culture. With a customer-centric approach in a company, the customer becomes the center of all business processes – from product development to marketing strategies. This involves the primary planning of impressions based on the identified motives, needs, and interests of consumers, at ensuring of which the marketing as a key function of entrepreneurial activity and DM is aimed in the digital environment. This gives grounds to conclude that the impression economy is an evolutionary form of socio-economic development of society. Thus, the digital economy is based on revolutionary digital technologies that have formed a new (fifth) technological order, in which behavioral economics and impression economics developed at the beginning of the 21st century. The spread of information and communication and other digital technologies has led to the individualization of production and consumption, the possibility of targeted interaction between companies and consumers and the provision of personalized offers. The emergence of the buyer's market in the fifth technological era has contributed to the evolutionary development of interaction between companies and consumers, taking into account their emotions and feelings. Thanks to this, it is possible to plan in advance impressions that are a manifestation of emotions, and increase the efficiency of management based on the principles of humanity and partnership.

Design. The product, around which marketing and branding are based as a marketing technology, is of fundamental importance in providing impressions and satisfying consumer needs. Schifferstein and Hekkert (2008) paid attention to the fact that in modern conditions there has been a transformation in the perception of the product by consumers. The use of a product involves interaction with it and depends not only on the method of such interaction, which is technologically and functionally embedded in the product itself, but also on the use of the senses, motor system and knowledge of consumers, which allows them to process the information they perceive during the interaction and experience one or more emotions. This allows a person to form an affective assessment of the product during interaction with it. At the same time, the effect of emotions, feelings and experiences is characterized by intensity and brevity, physiological manifestations, which are manifested in a subconscious rapid reaction to the current situation (Berent et al., 2020, September 23). Regarding the product, this means that the consumer's first and preferably subsequent interaction with it should be accompanied by both emotional and physical experiences, which is manifested in admiration and the desire to own it.

The founder of Ajax Systems, O. Konotopsky, identified five features of a successful product: quality, design, price, functionality, and compliance with standards. He noted that companies that are engaged in design have higher capitalization than companies that are not engaged in design. It is design that makes people love the product at the start (even with imperfect quality, functionality, etc., which requires refinement). At the same time, design is important, but only if the other components of a successful product listed above are present (Forbes Ukraine, 2023). In general, design should be manifested not only in the product, but also in everything that the client interacts with on the consumer journey: website, mobile application, content, communication channels, points of contact and interaction, etc.

Simon (1996) once emphasized the focus of design on developing options for actions that are aimed at changing existing situations to better ones with given properties. Therefore, design is important in creating impressions, a detailed study of which the further research of the author will be devoted to.

Branding. Branding allows you to create an emotional frame around the product (Barden, 2013). As a marketing technology, branding involves the process of creating, promoting and developing a brand in order to achieve the strategic goals of the business entity, increase its profitability and development efficiency. We note the importance of a strategic approach to the development of a business entity, which in market conditions is based on building relationships with consumers in the long term through the use of a brand. A brand is a system of identification symbols for a product/service, provided that it is of good quality and meets the expectations of consumers, which allow them to form value in the minds of the latter and, thanks to the

user experience, positive associations and impressions, which provides additional value for the manufacturer and higher profitability than the market average, due to the willingness of consumers to pay a higher price (Iankovets & Levytska, 2024, p. 61). Currently, in the science and practice of branding, there are a large number of models of brand building, in which, using different names, there are common components: brand essence, physical data, benefits and values, individuality. The cultural direction of brand identity formation in the socio-cultural aspect, important in the economy of impressions, is used in the models of J.-N. Kapferer, D. Aaker, T. Ged (Iankovets & Palicheva, 2018, p. 55).

To create impressions, it is advisable to use sensory branding, the model of which was proposed in 2005 by Lindstrom (2010). The peculiarity of sensory branding is to involve all five human senses in order to awaken an emotional response in building a relationship between the consumer and the brand, which directly affects the impressions that a person receives from such interaction. This, in turn, forms a unique and individual experience of the consumer as the basis for his further interaction with the product, brand, company.

Offer personalization. Individualization of production and consumption in the digital environment is a consequence of the spread of *BigData* digital technologies, artificial intelligence, machine learning, which provides the opportunity to provide personalized offers to each unique user, taking into account the consumer's experience and the history of interaction with the brand, the company. Such a personalized approach, taking into account the principle of client-centricity, makes it possible to create an immersive experience for each client of a brand or company. The company's systematic work on the formation of a positive experience (by maintaining the brand's reputation and fulfilling the brand's promises) will contribute to the client's desire to share impressions in social networks (in particular, using UGC content), which will spread through the network according to the principle of "word of mouth", which will allow expanding the target audience, attracting new customers, build long-term relationships with existing customers, etc. and thus improve the results and efficiency of business activities.

Experience design. Experience design, as a new marketing promotion method, involves the process of organizing elements of an experience to provide participants with the opportunity to maintain and develop interaction, leading to the results intended by the designer and expected by the participants (Rosman & Duren, 2019).

Digital technologies. Digital technologies are considered by the author as a structural component of the digital economy on the way to becoming an experience economy. The use of digital technologies allows businesses to create and provide experiences based on collected information about consumer behaviour in the digital environment. This opens up the opportunity for businesses to use Data Analytics to predict consumer actions, engage them in interaction through social media, and provide an immersive

customer experience based on providing personalized offers and prices. In addition to BigData technology and complex data analytics algorithms, new information technology as a general term includes the following technologies (Bukht & Heeks, 2017, August 3; Williams, 2021; Ministry of Digital Transformation & Diia, 2021): Internet of Things (IoT), smart sensors, additive technologies (3D printing), social media, multimedia, identification technologies, machine learning, multi-level customer interaction and profiling of him, streaming video, augmented reality, cloud computing, mobile technologies, fraud detection and authentication, robotics and cyber systems, artificial intelligence, virtual/augmented reality and metaverse, "friendly" user interface, geolocation, blockchain, quantum technologies, etc. The spread of these technologies has contributed to the emergence of new segments of users who are not programming professionals, but who actively participate in the information process in the digital environment and are consumers with new needs that shape markets for new digital products.

Marketing strategies. In general, a marketing strategy is a long-term plan of actions (measures) aimed at forming, maintaining and expanding demand for a product (products, services, works) of an enterprise. Like any strategy, a marketing strategy includes goals, indicators, measures, resources and monitoring (Iankovets, 2019, p. 94). In the digital environment, the overall marketing strategy of a company/brand has a digital marketing strategy, which is defined as a systematic program of actions (measures) using innovative digital technologies, channels, methods, tools to achieve the goals of the DM. A detailed description of the digital marketing strategy by stages of formation is given in the author's article (Iankovets, 2022). By the way, digital marketing strategies are divided into conversion, image and reputation strategies, which are designed to ensure the implementation of the financial and non-financial strategic goals of the company/brand. That is, the company must simultaneously implement all three types of strategies, the synergy of which ensures positive impressions and forms a holistic immersive customer experience, taking into account the stages of the consumer's journey in the digital environment.

Digital marketing methods and tools are designed to implement a company's/brand's DM strategy and involve both online and offline interaction between the company and consumers at every stage of the consumer journey.

Service. As a value proposition, experiences are based on goods and services, since their provision requires material means and services to provide experiences. Hence, service is strategically important in providing positive emotions during the preparation for receiving experiences, during receiving experiences, and after receiving them. At the moment when a person experiences the received impressions, it is important not to lose contact with him in order to build long-term partnerships and attract him as a regular customer and later – to transform him into an advocate and promoter

of the brand. Service involves both technological solutions and support, and the participation of company employees in the process of creating and providing experiences, as well as support after receiving experiences. In addition, considering service as a relationship between people, it is important to maintain it at a high level both in relation to external customers and internal customers (company employees), as well as in relation to other stakeholders. High-level service involves human relations aimed at mutual positive emotions. Therefore, service as a strategic direction should be built in the company on the basis of a customer-centric approach (both in relation to external and internal customers), which is the basis of corporate culture in the impression economy, which will contribute to improving business reputation, brand loyalty and, as a result, will ensure an increase in the strength and capital of the brand, improving financial results, operational efficiency and business profitability.

Taking into account the above, *Figure 1* presents the key elements and principles of the impression economy, which allow us to formulate the author's interpretation of the definition of the "experience economy in the digital environment".

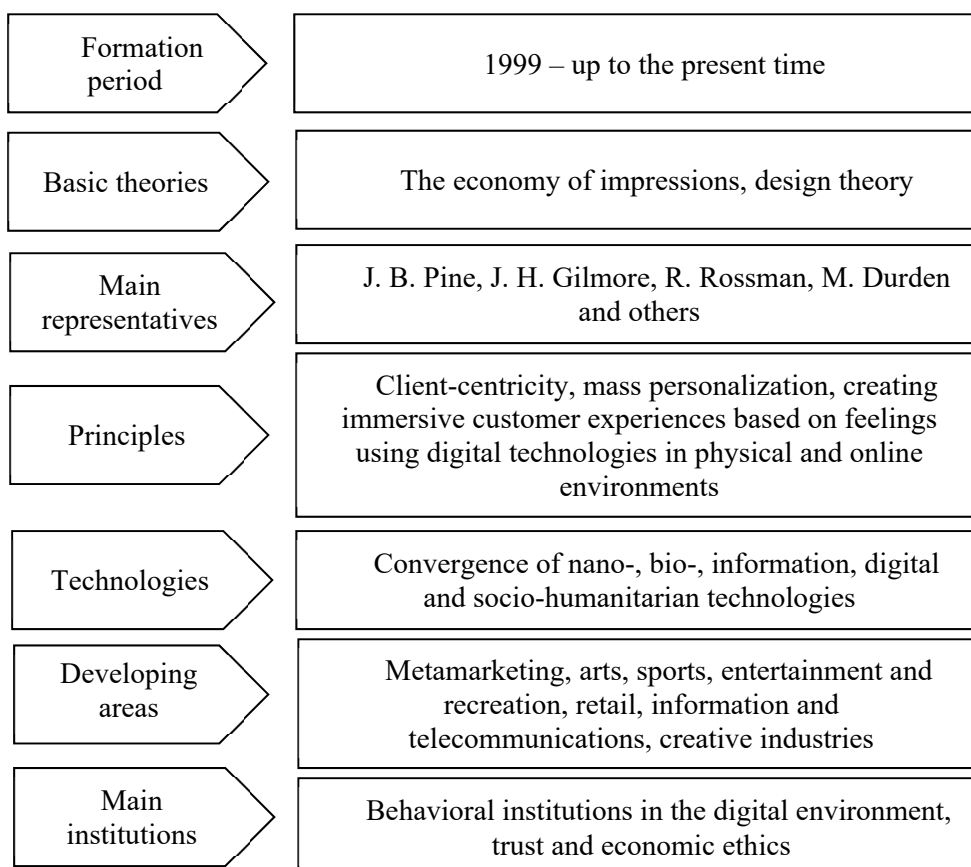


Figure 1. Key elements and principles of the experience economy

Source: compiled by the author.

The experience economy in the digital environment is a type of modern economy based on: the economic offer of experiences using a customer-centric approach and digital technologies in a digital environment that includes physical and digital space; involving customers in co-creation to create value for themselves, which contributes to the formation of a holistic immersive customer experience, positive sustainable associations; the desire to interact with the product, company and brand in the long term based on partnership and friendship. This definition does not emphasize efficiency for enterprises, but this is implied, since any economic activity of business entities is aimed at achieving economic and social results, and entrepreneurial activity, in addition, is aimed at making a profit and increasing profitability (Economic Code of Ukraine, 2024/2003). A feature of the definition, unlike existing ones, is the central place of the client as an active subject in interaction with the company to create value for himself, which turns him into a partner involved in the company's business processes.

Engaging customers, following the strategic directions of providing impressions and creating a unique customer experience described above, allows you to build relationships and become a *Lovemark* company / brand, that is, one that people not only respect, but also love, that is a manifestation of impressions and creates a strong emotional connection of people with the company/brand. The *Lovemark* concept was proposed by Kevin Roberts, CEO of the British advertising and communication agency *Saatchi & Saatchi*. According to him, "this is a brand that managed to find its place not only in the market, but also in the hearts of consumers" (KMBS, 2024, May 7).

A strong emotional connection, which is formed taking into account strategic directions for providing impressions, as well as brand marketing tools, influences the subconscious choice of a product, company, brand, which consists of a set of discrete choices throughout the consumer's life journey, which forms his holistic customer experience and stable positive associations with the product and brand.

2. The emergence of the concept of metamarketing in the digital environment

The almost simultaneous emergence of the knowledge economy, the digital economy, the behavioral economy, and the experience economy has influenced the transformation of the modern concept of marketing. *Table 1* systematizes the basic concepts of marketing management in evolutionary development from the late 19th to the early 21st centuries.

Table 1
The evolution of basic concepts of marketing management from the late XIX to the early XXI century.

Marketing concept	Periodization	Characteristic	Terms of use	Management decisions	Limitations and risks of use
Production improvement	The end of the XIX century – the middle of the 20s of the XX century	Consumers prefer common and affordable products	Demand for goods or services exceeds supply; the need to reduce the cost price	Increasing the volume of production of goods or provision of services; increasing labour productivity	Not consumer-oriented, may be unprofitable for one product and unprofitable for another
Product improvement	Mid-20s – late 30s of the XX century	Consumers prefer the highest quality products	Consumers are aware of the product and are willing to pay a high price for quality	Continuous product improvement	The emergence of new ways to meet consumer needs on the market
Sales (intensification of commercial efforts)	Late 30s – mid 50s of the XX century	Product sales need stimulation	Availability of potential buyers with high income levels	Improving the way to find potential buyers and "hard sales" methods	Market saturation with goods or services, buyer fatigue from aggressive sales
Marketing	Mid-50s – late 70s of the XX century	Based on identifying consumer needs and satisfying them in a better way than competitors	Customer-oriented approach, high standard of living, activation of innovative activities	Focusing marketing efforts on generating demand based on identified needs	Lack of strategic guidelines and effective marketing strategies, ignoring the socio-ethical needs of society
Socio-ethical marketing	Early 80s – mid-90s of the XX century	Incorporating sustainable development principles into marketing activities	Aggravation of socio-economic and environmental problems of society, unfair competition	Introduction of social responsibility norms and rules into marketing activities	Compliance with socio-ethical rules and ethical behavior of marketers
Relationship (or interaction)	Mid-90s of the 20th century – early XXI century	Building long-term relationships with the company's stakeholders	Strengthening globalization processes, development of consumerism, development of "green marketing"	Formation of corporate culture based on the principles of respect, trust, and strengthening of individual relationships	The importance of maintaining business reputation, delivering on brand promises, focusing on key customers and stakeholders
Holistic marketing	Early XXI century – up to the present time	Synergy of marketing types: internal, integrated, socially responsible, relationship	The focus of all employees of the company on achieving a common goal	Implementation of the concept of internal corporate governance, strategic approach	Presence and increase of competitiveness at the level of ideas and relationships

Source: formed and supplemented by the author based on (Kotler, 1984; Lavrova, 2012; Bondarenko, 2023; Fisun, & Marchuk, 2023; Mylko, & Fedorchuk, 2024).

Investigating changes in marketing associated with digitalization and changes in consumer behavior at the beginning of the 21st century, Kotler et al. proposed marketing concepts from "Marketing 1.0" to the latest, published concept "Marketing 6.0", which are described in a series of books with the corresponding titles (Kotler et al., 2010; 2021; 2023). Kotler and co-authors established periods of development of these marketing concepts, starting from the 1950s, which is associated with the emergence of the traditional concept of marketing management (*Table 1*). At the same time, an analysis of the names and essence of these concepts allows us to compare the first three of them with the basic concepts of marketing management:

marketing 1.0: product-oriented; corresponds to the basic concepts of product improvement, intensification of commercial efforts (sales);

marketing 2.0: consumer-oriented; corresponds to the basic concept of marketing;

marketing 3.0: is focused on people, common human values in the company and customers, culture, spirituality, creativity, that is, it is human-centric; corresponds to the basic concepts of socio-ethical marketing, relationship marketing and holistic marketing.

The following marketing concepts are innovative and relevant today:

marketing 4.0: the approach of Kotler et al. is compared with the theory of Schwab regarding industrial revolutions and their impact on the development of technologies (Schwab, 2019), which, in turn, affect consumer behaviour and marketing. Thus, "Marketing 4.0" correlates with the fourth industrial (digital) revolution "Industry 4.0" and, accordingly, is digital, focused on promotion on the Internet. The key characteristics of "Marketing 4.0" are the growing role of the mobile Internet, social networks and e-commerce, which contributed to the change in the consumer's path and, accordingly, the spread of the principle of omnichannel in the promotion of goods and services, as well as in sales (Kotler et al., 2016);

marketing 5.0: remains digital, while the types and capabilities of digital technologies in various areas of people's lives are expanding in order to improve their quality. Such technologies include artificial intelligence (AI), natural language processing (NLP), sensor technologies, robotics, augmented and virtual reality (AR/VR), the Internet of Things (IoT) and blockchain (Kotler et al., 2021). These technologies began to be used earlier, but as prototypes that required testing and trial by the market. They became widespread with the completion of the fifth technological order, the intensification of innovative activities of enterprises, and the active spread of digital technologies in various areas of social production, which led to the formation of a new (sixth) technological order. An additional powerful stimulus for the development of digital technologies was COVID-19 and the corresponding institutional changes in society. The goal of "Marketing 5.0" is to identify those points of interaction on the consumer's journey where technologies can add and increase value. Hence, this concept is based

primarily on the connectivity of technologies and people, as well as building an ecosystem of large amounts of data, which allows: to find patterns in consumer behavior and, accordingly, to predict it; to provide personalized experience and enable customers to customize it, which more involves them in co-creation and creating value for themselves; to calculate the results of marketing strategies and marketing campaigns; to implement contextual digital customer experiences in the physical world based on the principle of omnichannel; transfer some of the routine simple functions to technologies that replace humans (AI and NLP in chatbots to handle a large number of requests and provide quick answers, virtual and augmented reality to engage customers in the experience of interacting with the product, which creates an impression and frees up the company's human resources for valuable interaction with customers when it is necessary), etc. "Marketing 5.0" approaches experience marketing as it has both human-centric "Marketing 3.0" and digital "Marketing 4.0". The key technology in "Marketing 5.0" is defined as artificial intelligence, designed to reproduce human abilities in solving problems and making decisions for the benefit of humanity;

marketing 6.0: focused on exciting interactive interactions between customers and brands using both digital and physical elements. Kotler, et al., attributes this to the fact that Generation Z and α people have grown up, who were born and have grown up in the Internet age and have had an active digital experience since childhood. Kotler and co-authors began to use the theory of generations proposed by Strauss and Howe (1992; 1997) earlier, describing the concept of "Marketing 5.0", noting the simultaneous residence of five generations with different motives, needs, behaviours, digital experiences, etc., forming different consumer segments in the digital world. The growth of interactivity and immersion in the digital world today is manifested in: the spread of short videos on social networks, which captivate the audience and, through "infinite" scrolling, increasingly immerse them in viewing; innovative e-commerce models in interaction with consumers through chats and live broadcasts; the use of multi-sensory technologies, augmented, virtual and extended (XR) reality technologies to improve the customer experience in physical spaces, etc. The latter reflects the need to supplement physical spaces with digital technologies for generations Z and α , for whom a metaspaces is being formed today – a digital space in which the sensations of the real world are experienced and which can become a virtual immersive version of social networks for young people (Kotler et al., 2023). XR and metaspaces are blurring the lines between the physical and digital worlds, creating a full immersion effect that creates a need to provide an immersive experience through marketing, turning it into metamarketing. The concept of metamarketing is based on an omnichannel approach, but goes further by providing an immersive experience to the delivery of the customer experience by providing a digital experience in a physical space or a real experience in a digital environment, ultimately bringing the physical and

digital realms closer together. With such immersion, potential customers, spending their time, are more and more "involved" in interaction with the brand, which increases the probability of making a purchase based on their own immersive experience and, in the future, brand advocacy. The key technologies in "Marketing 6.0" remain the Internet of Things (IoT), artificial intelligence (AI), augmented and virtual reality (AR/VR), and blockchain, to which is added spatial computing technology that facilitates digital interaction in physical space (for example, "smart" fitting rooms in a clothing store). (Kotler et al., 2023).

In view of the above, *Figure 2* presents the author's interpretation of the transformation of modern marketing concepts based on the scientific views of Kotler et al., taking into account the evolution of modern economies described above.

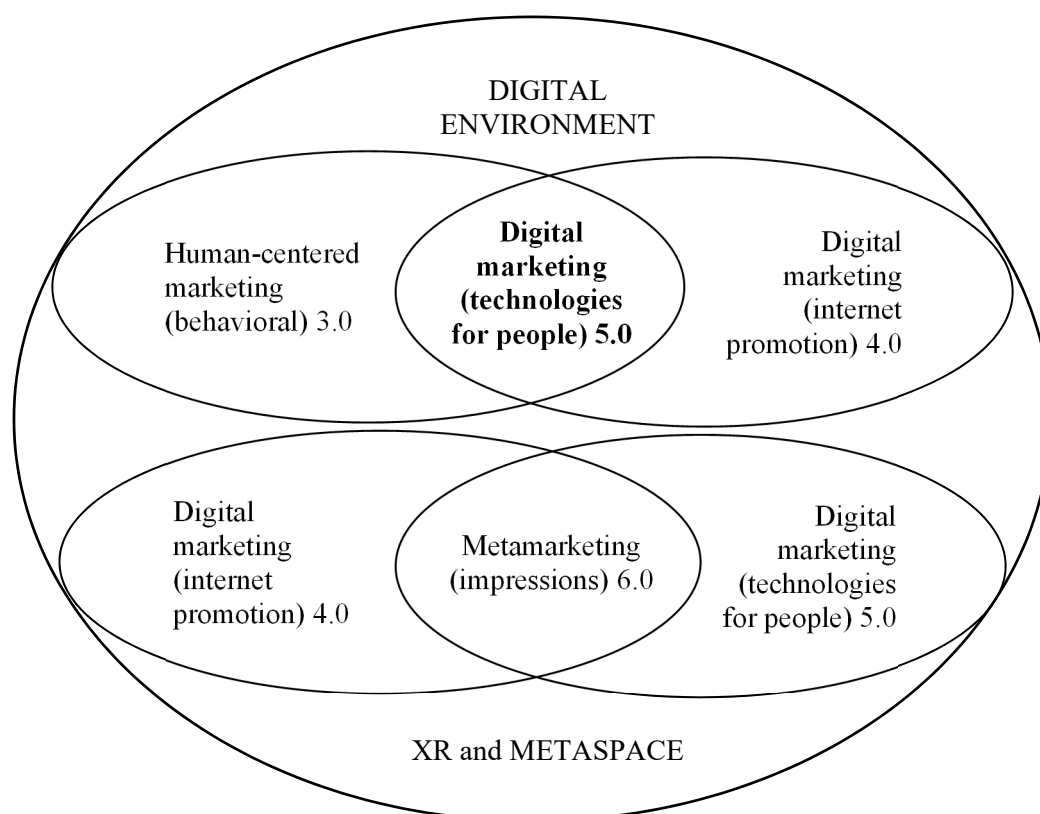


Figure 2. Transformation of modern marketing concepts

Source: proposed by the author based on (Kotler et al., 2010; 2016; 2021; 2023).

Figure 2 shows two main types of marketing in the conditions of the emergence of the impression economy: digital marketing and impression marketing. Under DM, the author defined the marketing activity of the enterprise using digital technologies, channels, methods, tools, which allows, thanks to the presence in both online and offline environments and interactive interaction with consumers, to develop targeted offers to achieve marketing,

branding and business goals, in particular: increasing sales, profit, business profitability, as well as increasing the strength, capital and value of the brand (Iankovets, 2019, p. 92).

The concept of "experience marketing" is identified by scientists with the concepts of "emotional marketing" (Bolotna, 2013; Chubukova, Yarenko, 2016), "marketing of emotions" (Radkevych, 2019), "atmospheric marketing" (Chubukova, Yarenko, 2016), "customer experience marketing" (Schmitt, 2003; Lenderman, 2009; Batat, 2019; Leahy et al., 2022), "empirical marketing" (Lialiuk, 2021), etc. In contrast to the identification, Radkevych (2019) justifies the difference between these concepts, defining "emotional marketing" and "experience marketing" as tools for creating emotions and impressions, respectively, as a product, and considers "emotional marketing" as a branding tool based on emotions.

The same division in understanding the concept of "marketing" is generally applied by Dainovsky (2024), clarifying problematic issues of marketing classifications. He distinguishes two options in interpreting the concept of "marketing" with the use of an additional word in relation to any type: clarification of the means and/or goals of marketing or the areas of distribution (what marketing: emotional, atmospheric, etc.); clarification of the object of marketing (marketing of what: marketing of emotions, marketing of impressions, etc.).

Kryveshko (2020) defines the place of experience marketing among event marketing and show marketing, referring it to a communication tool for building an emotional connection between the consumer and the brand. Zaitseva and Fursov (2019b) also characterize experience marketing, complementing it with the feature of innovation. Using the example of a hotel, scientists distinguish different levels of a hotel product as a commodity and describe the impressions at each level. Such a practical approach allows you to create a positive customer experience that forms brand associations and consumer loyalty.

Sadchenko and Robul (2020) emphasize the financial component in the concept of "impression marketing" as a way of creating impressions.

In general, for today there are few thorough studies in the field of experience marketing, presented in the form of scientific articles by domestic scientists. There are more abstracts of scientific conferences on the topic of experience marketing, which can be explained by the beginning of its formation and development in the context of the emergence of the experience economy in the country. This requires additional discussion, scientific hypotheses, their confirmation or refutation by empirical research, which takes time. Instead, a significant number of English-language works in this area have been identified among foreign authors, which can be explained by the gap in socio-economic development between countries and, accordingly, the difference in value for consumers, and therefore the value proposition from companies.

The study does not emphasize the differences in the listed concepts, since they all reflect the emotional component of marketing in different ways and entered scientific circulation during the period of the emergence of the impression economy. In addition, the authors of the above works, focusing on the psychological aspect, do not specify the specifics of marketing tools used in providing impressions in the digital environment. Therefore, in the future, we will combine the concepts of "impression marketing" and "digital marketing" into the concept of "metamarketing", which involves the use of DM methods and tools to create and promote impressions in physical and digital space. *Metamarketing* is defined as *marketing activities aimed at generating demand for a company's product (goods, services, or experiences) as a value proposition in metaspace using digital technologies to engage customers in interactive interaction, which provides a holistic immersive customer experience, creates positive, sustainable associations with the company and brand, and allows for building long-term partnerships and friendly relationships, which ensures the achievement of strategic marketing goals and the company's activities as a whole.* The definition specifies the directions of creation and promotion of impressions, which expands the possibilities of their identification and application: impressions as a product and impressions as a way of promotion.

Conclusions

The emergence of the experience economy in the digital environment, which includes physical and digital space, the emergence of new consumer segments with new needs, changing patterns of behavior on the digital consumer journey, the emergence of new markets for digital products and services, and high customer expectations of brand value propositions have led to the need to introduce new approaches to interaction with consumers into the business activities of enterprises. A key requirement for such approaches is to ensure an immersive customer experience based on impressions, which forms sustainable positive associations with the product, brand, and company and provides opportunities for sustainable development in the long term. The strategic areas for ensuring the customer experience of enterprises include: customer centricity; product design; branding; offer personalization; experience design; marketing strategies; digital technologies; digital marketing methods and tools.

Identification of impressions for enterprises (producers) and consumers (buyers), substantiation of strategic directions for ensuring impressions allowed to formulate the principles of the impression economy, to highlight key technologies, developing areas, and institutions, to formulate the definition of the "*experience economy in the digital environment*" proposed by the author.

The study of the evolution of marketing management concepts from the late 19th to the early 21st centuries has revealed changes in marketing

associated with digitalization and changes in consumer behavior. Based on a comparison of basic concepts with modern ones, taking into account the scientific views of Kotler et al., two main types of marketing in the context of the emergence of the impression economy have been identified: digital marketing and impression marketing.

For businesses focused on long-term existence on the market and development, improving customer experience in the digital environment is a strategic goal. To do this, it is recommended to use the latest concept of metamarketing, which involves physical and digital convergence, providing a more interactive and exciting customer experience in physical and digital space.

The author's further research will be devoted to systematizing methods for creating and promoting impressions for metamarketing purposes.

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ETHICS OF PROFESSIONAL ACCOUNTANTS IN THE EU

The relevance of this research stems from the increased attention to ethical standards in the EU's professional accounting field, especially regarding anti-corruption, conflict of interest prevention, and the implementation of transparent reporting practices. Ukraine, on the other hand, faces limitations in its regulatory framework and practical tools for ensuring ethical conduct among accountants. Applying European experience amid growing risks and conflicts of interest allows for an assessment of methods that can strengthen ethical standards in Ukraine. The main challenge lies in adapting and implementing European ethical standards in Ukraine, where institutional structures and a culture of high ethical standards for accountants remain underdeveloped. The question is how

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ЕТИКА ПРОФЕСІЙНИХ БУХГАЛТЕРІВ В ЄС

Актуальність теми зумовлена підвищеною увагою до етичних стандартів у професійній бухгалтерській сфері ЄС, особливо в контексті боротьби з корупцією, уникнення конфліктів інтересів і впровадження прозорих практик звітності. Україна, зі свого боку, має обмежену нормативну базу та практичні інструменти для забезпечення етичної поведінки бухгалтерів. Використання європейського досвіду в умовах зростання ризиків і конфліктів інтересів дає змогу оцінити, які методи можуть стати основою для посилення етичних стандартів в Україні. Основною проблемою є адаптація та впровадження європейських етичних норм в Україні, де інституційна база залишається недостатньо розвинутою, а культура дотримання високих етичних



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best to integrate the EU's practices into the Ukrainian system, given regulatory constraints, existing risks, conflicts of interest, and insufficient whistleblower protections. The adaptation of European ethical standards for professional accountants, together with a suitable regulatory framework and the development of transparency institutions, can significantly reduce corruption risks and minimize conflicts of interest in Ukraine's accounting field. This would foster greater trust in the profession and contribute to economic stability, providing a solid foundation for business growth and investment. Measures are proposed for integrating European experience in professional accounting ethics in Ukraine. A hypothesis is proposed that the implementation of EU experience in ensuring high standards of professional ethics for accountants will enhance transparency, accountability, and independence in the accounting profession in Ukraine, supporting its integration into the European framework. The research methodology includes a systematic approach, content analysis, synthesis, heuristic methods, deduction, and comparison. Based on the research findings, measures have been proposed for adopting European practices to ensure professional ethics among accountants in Ukraine. Recommendations include adapting ethical standards to crisis conditions based on the International Code of Ethics for Professional Accountants, establishing an independent oversight body, developing mechanisms for preventing, detecting, and disclosing conflicts of interest, and implementing anti-corruption initiatives and anti-money laundering measures. Additionally, integrating Ukrainian professional organizations into the European community, supporting ethics through training and certification, enhancing corporate social responsibility, and creating a rating system for ethical violations are also recommended.

Keywords: ethics; professional ethics; accountant; ethics of accountants; compliance with ethics; ethical principles; conflict of interest; sanctions; European Union; the International Code of Ethics for Professional Accountants.

JEL Classification: M14, M41, D78, G34.

Introduction

The relevance of studying the ethics of professional accountants in the EU and its significance for Ukraine is increasing in the face of global challenges. By 2050, the world's population is expected to reach 9 billion, and climate change will exacerbate all existing problems (Johnson, 2020).

стандартів бухгалтерів – слабо сформована. Висвітлено питання, як імплементувати найкращі практики ЄС в українській системі, враховуючи обмеження у сфері регулювання, наявні ризики й конфлікти інтересів та недостатній захист викривачів. Адаптація європейських етичних стандартів для професійних бухгалтерів, разом із належною нормативною базою та розвитком інститутів прозорості, дасть змогу істотно знизити корупційні ризики та мінімізувати конфлікти інтересів у бухгалтерській сфері України. Це сприятиме зростанню довіри до професії та зміцненню економічної стабільності, забезпечуючи надійну основу для розвитку бізнесу й інвестицій. Висунуто гіпотезу, що впровадження досвіду ЄС щодо забезпечення високих стандартів професійної етики бухгалтерів сприятиме підвищенню прозорості, підзвітності та незалежності бухгалтерської професії в Україні, підтримуючи її інтеграцію до європейського простору. Методикою дослідження є системний підхід, контент-аналіз, синтез, евристичний підхід, методи дедукції та порівняння. Запропоновано заходи для впровадження європейського досвіду у забезпечення етики професійних бухгалтерів в Україні. Зокрема це адаптація етичних стандартів відповідно до кризових умов на основі Міжнародного кодексу етики, створення незалежного органу з етичного нагляду, розвиток механізмів для запобігання, виявлення та розкриття конфліктів інтересів, реалізація антикорупційних ініціатив та заходів проти відмивання грошей. Окрім цього, пропонується інтеграція українських професійних організацій до європейського простору, підтримка етики через навчання та сертифікацію, а також розвиток корпоративної соціальної відповідальності та формування рейтингу порушників етичних норм.

Ключові слова: етика; професійна етика; бухгалтер; етика бухгалтерів; дотримання етики; етичні принципи; конфлікт інтересів; санкції; Європейський Союз; Міжнародний кодекс етики професійних бухгалтерів.

Professional accountants are expected to contribute to achieving at least 8 of the 17 Sustainable Development Goals (SDGs), including quality education, gender equality, decent work and economic growth, reduced inequalities, responsible consumption and production, climate action, peace, justice and strong institutions, and partnerships for the goals (United Nations, n. d.). The European experience in adapting ethical standards in accounting can serve as an essential benchmark for Ukraine, helping to reduce corruption risks and conflicts of interest, while fostering a transparent and responsible environment that supports sustainable development. Strengthening these objectives can contribute to a resilient economy and significantly advance global development.

Given that the accounting profession generates over USD 550 billion for the global economy, studies link robust accounting practices with higher GDP per capita and improved Human Development Index (HDI) metrics (Johnson, 2020).

The military aggression by the Russian Federation against Ukraine has impacted the ethics of professional accountants in Europe, compelling them to adapt to new demands and responsibilities related to ensuring financial transparency, business accountability, and compliance with sanctions. In the accounting sector, European countries have intensified their oversight of compliance with sanctions imposed on Russia and associated entities. This involves not only the responsibility to block illegal financial flows but also active participation in ensuring the accountability of companies they work with to avoid cooperation with sanctioned organizations and individuals. This has become a new moral obligation, crucial for regional security and the preservation of European values.

The war's impact has also highlighted the importance of social responsibility among European accountants. Europe is currently rethinking the role of businesses in upholding international justice, peace, and the rule of law, while countering military aggression and terrorism. Accountants, as key professionals in finance, are part of a broader initiative to ensure the ethical conduct of companies striving to avoid working with suspicious or unethical partners. This includes stricter approaches to due diligence, maintaining transparency in reporting, and ensuring compliance with legal regulations. Thus, the European accounting community bears responsibility for fostering an ethical culture that defends democratic principles and counters the financing of aggression.

Moreover, the ethical impact of the war has prompted European accountants to pay increased attention to and exercise greater diligence in addressing ethical issues in the fields of cybersecurity and information protection. As the war unfolds not only on the battlefield but also in cyberspace, amid growing hybrid threats, protecting financial data and business systems from cyberattacks potentially linked to aggressors has become a critical ethical imperative. Accountants bear responsibility not only

to their companies but also to their countries, society, and the international community at large, safeguarding confidential data from potential threats.

In general, Russia's military aggression and the rising risks and conflicts have compelled European accountants to deepen their ethical responsibilities and uphold principles of transparency, accountability, and security that extend beyond national interests, reinforcing global values and peace.

A review of academic sources highlights the increasing relevance of this research. Scholars are delving into issues related to the impact of risks and conflicts of interest on the professional ethics of accountants, analyzing educational strategies, and examining the influence of technology on ethical considerations in this field. For example, "Assessing the Impact of the Giving Voice to Values Program in Accounting Ethics Education" by Shawver & Miller (2022), published in the *Journal of Business Ethics Education*, investigates how the "Giving Voice to Values (GVV) framework" helps accounting students develop moral courage and the ability to address unethical practices, aiming to make ethics education more action-oriented and impactful.

The accounting profession places significant emphasis on the ethical integrity of individuals, underscoring the importance of high-quality ethics education. In his work "Accounting Ethics Education", Mintz (2021) examines the development of accountants' education and ethics, noting that while fundamental objectives have long been established, ongoing research and refinement of teaching methods remain necessary and relevant in both academic and professional training. This is also emphasized by authors such as Oriekhova (2020), Golov et al. (2022), who highlight the importance of fostering moral accountability.

The use of artificial intelligence (AI) significantly expands opportunities but simultaneously introduces additional risks in adhering to ethical principles (Romashko & Korol, 2024). Therefore, it remains a subject of ongoing debate and is insufficiently explored in academic literature. "Ethics, Technology, and the Professional Accountant in the Digital Age" by IFAC (International Federation of Accountants) (IFAC, 2021, April 1) examines the ethical implications of emerging technologies, such as AI and blockchain, on accounting practices. The report questions how well current ethical codes align with these advances and calls for new guidance to address digital challenges.

Ethical behavior among accountants forms the foundation of professional activity and influences the level of trust in industry specialists. At the same time, debates arise regarding the impact of globalization and cultural differences: different countries may have varying ethical standards, creating challenges for accountants working in an international environment and across industries (Kostyuchenko et al., 2021). This raises the question of the need to unify ethical norms (Dewa et al., 2024) to ensure consistent

standards of accountability and transparency on a global scale (Bardash & Kraevsky, 2023). In the book chapter "Building Moral Courage Through a Wisdom-Focused Accounting Ethics Course," Shaub (2020) highlights the importance of fostering "practical wisdom" and moral courage in accounting students. He argues for ethics courses that integrate case studies and practical exercises, helping future professionals maintain ethical integrity in complex situations. Professional organizations play a significant role in establishing ethical standards for accountants and auditors in Europe, making the adoption of European experience particularly valuable for Ukraine (Kytaichuk, 2024).

Research on ethics in accounting focuses on developing ethical knowledge and educational practices within the profession (Golofit, 2018), promoting applied ethical research in the field of preventing and countering corruption (Mazaraki & Melnyk, 2023), implementing innovative solutions (Duginets et al., 2024), modernization of the national accounting and auditing system using digital transformation tools (Shapovalova et al., 2023), improving the teaching of ethics (Accounting Insights Team, 2024), and providing professional accounting and auditing communities with resources to integrate ethical standards and best practices into the work of public companies, private businesses, and government organizations (Gisby, 2022).

Professional ethics and spiritual intelligence are vital elements of accountants' professionalism. Ethics establish behavioral standards that regulate accountants' interactions with clients and the public, fostering trust and accountability. Spiritual intelligence, which integrates physical and spiritual aspects of an individual, helps accountants think creatively, broadly, and adapt to change. With spiritual intelligence, accountants can rethink and improve regulations, leading to more effective work and ethically motivated decision-making (Wiyarni et al., 2024).

The role of professional accountants in building trust, the ethical challenges they face, and how the International Code of Ethics for Professional Accountants helps them overcome these challenges (IFAC, 2018) will always remain relevant topics for discussion. Current publications highlight trends in the evolving landscape of ethics in accounting, particularly in response to technological changes, emerging risks and conflicts of interest, and the growing need for educational innovations and solutions to pressing issues. One major unresolved issue in the professional ethics of accountants in EU countries is balancing accountant independence with external pressure. Despite the existence of high ethical standards and a developed international code, accountants in practice often face influence from company management, clients, or even government bodies. Such pressure can lead professionals to compromise their ethical standards, especially in areas like auditing, reporting transparency, detecting financial violations, compliance with sanctions, and more.

Research Hypothesis is borrowing the experience of EU countries in maintaining and ensuring high standards of professional ethics for accountants

will enhance transparency, accountability, and independence in the accounting profession in Ukraine. This is particularly critical as Ukraine integrates into the European space amid modern challenges such as war, corruption, international sanctions, and heightened business reporting requirements.

This hypothesis can be tested by examining how specific practices and ethical standards implemented in EU countries can be adapted to the Ukrainian context. This would strengthen ethics in the accounting profession and reduce the risk of ethical violations under conditions of uncertainty and conflicts of interest.

The aim of the research is to outline the positive experience of EU countries in supporting and ensuring high standards of professional ethics for accountants in modern conditions, which can be successfully implemented in Ukraine.

To achieve this aim, the following tasks, corresponding to the structure of the main part of the research, were formulated, such as: the first section describes the theoretical foundations and principles of professional ethics for accountants outlined in the International Code of Ethics for Professional Accountants and the dynamics of their changes; the second section presents the results of the analysis of the practices and initiatives of EU countries in supporting and enhancing ethical standards for professional accountants; the third section defines how Russia's military aggression, international sanctions, and new financial transparency requirements have affected ethical standards and practices in accounting in EU countries; the fourth section is devoted to assessing the potential for implementing the experience, unique and most effective practices, and ethical standards of EU countries in the accounting profession in Ukraine. The conclusions set out proposals for improving the ethical standards of accountants in Ukraine.

These tasks aim to structure the research and identify how the experience of EU countries can be utilized to support professional ethics for accountants in Ukraine.

The research methods include analyzing scientific literature and regulatory acts, conducting a comparative analysis of standards, employing a systematic approach to assessing the experience of European countries, performing content analysis of professional organizations' activities, synthesizing best practices for maintaining high ethical standards, using deduction and comparison to evaluate the potential for adapting European experience in Ukraine, and applying a heuristic approach to formulating conclusions and assessing the results of implementing European best practices in the Ukrainian context. These methods enable the systematization of European countries' experiences and an assessment of the feasibility of implementing effective practices in Ukraine to ensure compliance with high standards of professional ethics for accountants amidst modern challenges.

The article examines the requirements and key changes introduced to the International Code of Ethics for Professional Accountants; the features,

experiences, and initiatives of European countries in supporting professional ethics for accountants; current challenges, military conflicts, and sanctions that have influenced ethical standards and practices in accounting in EU countries, including associated risks; and key aspects of the European experience in ensuring accountants' ethics, offering practical recommendations for Ukraine.

1. The International Code of Ethics for Professional Accountants

The International Code of Ethics for Professional Accountants (Including International Independence Standards) (IFAC, 2018) sets out the key ethical principles that professional accountants should adhere to. The Code reflects the profession's commitment to protecting the public interest, emphasizing the need for transparency, integrity, objectivity, competence, confidentiality and professional conduct. The five fundamental ethical principles for professional accountants include: integrity – being honest and straightforward; objectivity – maintaining impartial judgment free from bias, conflicts of interest, or undue influence; professional competence and due care – upholding high standards of knowledge, skill, and diligence; confidentiality – respecting the confidentiality of information acquired in professional contexts; and professional behavior – adhering to relevant laws and standards, acting in the public interest, and avoiding any conduct that could bring discredit to the profession (*Figure*).

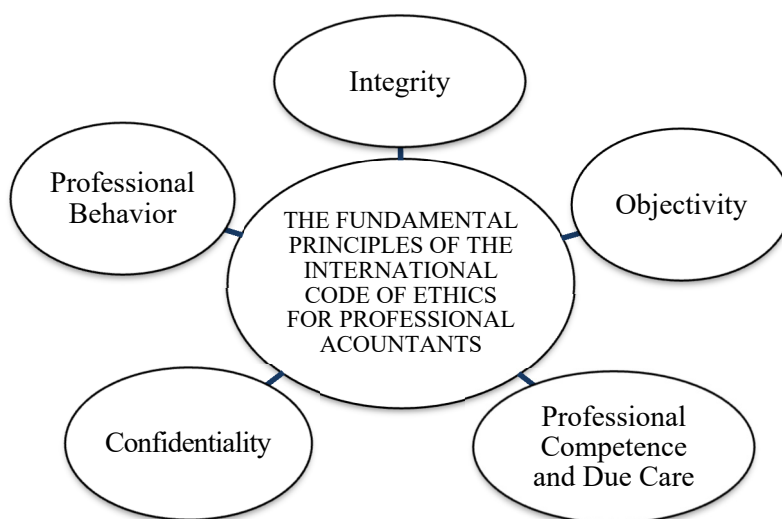


Figure. Five fundamental principles of the International Code of Ethics for Professional Accountants

Source: compiled by the authors on the basis of (IFAC, 2018).

In accordance with the conceptual framework, the Code provides guidance for identifying, evaluating and addressing potential threats that may compromise compliance with these ethical principles or affect the accountant's independence. The guidance includes tools for assessing risks, such as conflicts of interest, pressures from clients or the work environment.

Depending on the circumstances, the Code provides steps that may range from eliminating the threat to implementing safeguards that help maintain the accountant's professional objectivity. The Code is continually updated to reflect new professional standards, changes in technology, and new challenges in the areas of transparency and accountability.

The Handbook of the International Code of Ethics for Professional Accountants (including International Independence Standards) has undergone significant updates over the years, aimed at enhancing ethical standards for accountants worldwide.

In 2020, the handbook included key revisions such as updates to Part 4B to align with the IAASB's standards on assurance engagements and adjustments to promote a professional mindset, emphasizing the ethical expectations of accountants in Sections 100, 110, 120, and 220. These changes aimed to strengthen the focus on ethical responsibility and the mindset required of accountants in a complex financial environment.

By 2022, updates included changes related to non-assurance services (NAS), fee-related provisions, and the objectivity of engagement quality reviewers (EQR). Additionally, quality management amendments were added to align with the IAASB's standards on quality management.

The 2023 Handbook of the International Code of Ethics for Professional Accountants Published by the International Ethics Standards Board for Accountants (IESBA) (IESBA, 2023, September 19) reflects recent changes, including modifications to align with the International Auditing and Assurance Standards Board's standards and new provisions emphasizing the roles and judgments expected of professional accountants. Notably, it includes updates to the definition of "engagement team" in the Code to align with changes to the same term in the IAASB's International Standards on Auditing (ISAs) and International Standards on Quality Management (ISQMs).

Key changes include updated and enhanced requirements regarding objectivity in quality reviews, guidance on fee-related matters, and rules for providing non-assurance, non-financial advisory services. Implementation of the following updates is scheduled for December 2024, including the revised definition of "public interest entity" (PIE), changes to the definitions of "audit client" and "group audit client" arising from the updated definitions of "listed entity" and PIE, as well as provisions related to technology (IESBA, 2023, September 19).

The upcoming 2024 Handbook (IESBA, 2024, August 29) includes updates such as changes to the definition of "public interest entity," now encompassing a broader range of mandatory categories, including a new category of "publicly traded entity" replacing "listed entity", and revised definitions of "audit client" and "group audit client". It also introduces provisions regarding the use of modern technologies. At the end of the handbook, IESBA-approved amendments to the Code are outlined, which will come into effect after June 2025 and include provisions on "Tax Planning and Related Services".

In the 2024 Handbook of the International Code of Ethics for Professional Accountants, the International Ethics Standards Board for Accountants (IESBA, 2024, August 29) introduced updates related to technology. These changes expand the existing Code of Ethics, considering the growing impact of technology on the work of professional accountants and auditors.

The key provisions regarding technology include new requirements for accountants to address specific ethical risks associated with the use of technology. In particular, these provisions focus on data confidentiality, the need for proper information protection, and ensuring the reliability and accuracy of data in processes undergoing automation and digitalization. The Board emphasizes the importance of maintaining objectivity and professional competence, especially in the application of artificial intelligence and analytics technologies. These updates were developed in response to modern challenges in the field, such as cybersecurity and the ethical use of data, which are critically important for accountants and auditors increasingly relying on automated tools. The amendments aim to enhance ethical professional conduct in accounting, ensuring greater alignment with contemporary working conditions.

2. Experience of European countries in supporting professional ethics of accountants

The review of the EU countries' experience in supporting and maintaining high standards of professional ethics for accountants encompasses a wide range of sources. These include descriptions of legislative requirements, practices of professional organizations, and initiatives aimed at implementing ethical standards and responsible business practices.

A foundational aspect is compliance with legislative requirements and EU Directives on accounting and auditing, particularly regarding principles of transparency, accountability, and responsibility. Regulatory demands contribute to improving the quality of accounting information and fostering trust in the profession through stringent requirements for auditor independence (Semenova & Shapovalova, 2021).

Professional organizations, such as Accountancy Europe, ACCA, ICAEW, and national associations like FAR in Sweden and Wirtschaftsprüferkammer in Germany, play a key role in upholding ethics (Zaucha et al., 2024). Significant attention is given to how these organizations implement the IESBA International Code of Ethics for Professional Accountants, promoting integrity, objectivity, and independence among professionals. Their role is considered essential for maintaining high ethical standards amid global integration and increased international accountability for accountants (Accountancy Europe, 2024).

EU countries actively support the development of an ethical culture through the promotion of ESG reporting and sustainable development. This

is particularly evident in the Netherlands and Sweden, where accounting associations encourages professionals to integrate social and environmental aspects into financial reporting. Studies emphasize that incorporating sustainability into the profession aligns with ethical standards and enables accountants to act as agents of change in society (Accountancy Europe, 2024).

Anti-corruption initiatives and anti-money laundering measures are widely implemented across EU countries, providing valuable insights for Ukraine. For instance, Germany and France employ robust control measures to combat financial crimes. These initiatives not only support ethical behavior among accountants but also ensure proper oversight by the state and professional organizations, enhancing trust in the profession (IFAC, 2021, April 1).

The importance of international coordination is underscored, as Accountancy Europe, in partnership with IFAC, works toward implementing unified ethical standards across Europe. This ensures the harmonization of standards and approaches to ethics among EU member states, fostering a cohesive professional culture among accountants (Panteleiev, 2020).

Alongside global trends, European countries demonstrate unique approaches to supporting accountants’ ethics, reflecting their legislative traditions, cultural mindset, economic development levels, and experience in corporate transparency (*Table 1*).

Table 1

Overview of EU Countries’ Experience in Supporting and Ensuring High Standards of Professional Ethics for Accountants

Country	Feature	Ethical initiative
Germany	In Germany, the Federal Chamber of Auditors (Wirtschaftsprüferkammer), which regulates the activities of auditors and accountants, plays a significant role in upholding the ethics of accountants. The country has one of the strictest systems of control over compliance with ethical standards	Accountants must follow strict rules of objectivity, requiring independence from the companies they audit. In addition, Germany places great emphasis on confidentiality and data security, which is especially important in the face of global cyber threats
France	In France, there is a significant emphasis on the professional training of accountants through the National Council of Accountants (Ordre des Experts-Comptables) and the Compagnie Nationale des Commissaires aux Comptes (CNCC), which oversees the audit	These organizations oblige professionals to adhere to a Code of Ethics, as well as specific requirements for independence. France also has strict standards for the transparency of financial reporting, which helps prevent corruption and fraud. Professional standards focus on social responsibility, especially in public procurement and companies with public participation
Italy	Italy has a specific system of professional ethics, regulated by the National Council of Accountants (Consiglio Nazionale dei Dottori Commercialisti e degli Esperti Contabili, CNDCEC) and other associations. These organizations implement ethical standards aimed at increasing transparency and preventing corruption	The CNDCEC actively supports anti-corruption initiatives and obliges its members to comply with the rules of ethical conduct in all aspects of financial reporting. Italian accountants must also adhere to high standards of objectivity and integrity, especially in public sector reporting

End of Table 1

Country	Feature	Ethical initiative
Austria	Austria has a strong system of control over the professional ethics of accountants, regulated by The Austrian Chamber of Tax Advisors and Public Accountants (KSW), Institute of Austrian Chartered Accountants (IWP). These organizations regulate mandatory certification and professional training for accountants and auditors. Accountants in Austria must adhere to standards based on the international IESBA Code of Ethics	KSW actively promotes the maintenance of high ethical standards through regular audits and mandatory training to maintain the license. KSW also monitors compliance with the provisions on confidentiality, objectivity and avoidance of conflicts of interest, which is of great importance for the local market. A system of disciplinary measures in case of violation of ethical standards guarantees the accountability of accountants to society
Sweden	In Sweden, there is a strong focus on transparency and ethical responsibility in the corporate sector. The Swedish Institute of Chartered Accountants (FAR) is implementing rules to strengthen the role of ethics in accounting and auditing	In Sweden, accountants must adhere to the principles of independence and responsibility. The FAR introduces recommendations on business transparency and ethical management. There is also increased attention to social responsibility, including environmental reporting and sustainable development
Netherlands	The Netherlands is one of the leading EU countries in ensuring financial transparency. The Royal Institute of Chartered Accountants (NBA) sets high ethical standards and offers support for the professional development of accountants	The Netherlands actively supports the ideas of sustainable development and corporate social responsibility, and accountants must take these principles into account in financial reporting. Accountants are also provided with additional support to increase the level of transparency and combat money laundering. The NBA places particular importance on client confidentiality and ethical independence
Spain	In Spain, the role of professional ethics in accounting is monitored by the Institute of Chartered Accountants of Spain (ICJCE). This organization ensures compliance with ethical requirements and obliges members to adhere to a Code of Ethics that is aligned with the international standards of IFAC and IESBA	The ICJCE introduces educational programs that focus on ethical training and objectivity of auditors. Special emphasis is placed on combating conflicts of interest and auditor independence to maintain confidence in financial reporting. Spain also includes elements of corporate social responsibility in the professional training of accountants, contributing to raising standards of transparency and social responsibility
Denmark	In Denmark, the professional ethics of accountants are regulated by the Danish Auditing Board (FSR), which is responsible for certification and maintenance of ethical standards. Danish legal requirements take into account the provisions of the international standards of IESBA and IFAC, promoting the professional independence and responsibility of accountants	Denmark has strict requirements for the education and training of auditors to ensure that they comply with ethical standards. Particular attention is paid to the disclosure of conflicts of interest and independence, as well as monitoring the quality of auditors' work. The FSR also organizes events to exchange best practices to support ethical behavior, transparency and social responsibility
United Kingdom	The United Kingdom (although no longer a member of the EU) has a major influence on accounting and auditing standards in Europe and the world. Organizations such as the Institute of Chartered Accountants in England and Wales (ICAEW) and the Association of Chartered Certified Accountants (ACCA) set strict requirements for the ethical training of accountants, including mandatory certification and continuing education	The organizations require accountants to adhere to the IFAC Code of Ethics and have established standards that help avoid conflicts of interest and ensure the independence of auditors. The well-known "Principle of Reliability" requires accountants to always put the public interest above their own

Source: compiled by the authors on the basis of and processing (Accountancy Europe, 2024; IFAC, 2021, April 1; Zaucha et al., 2024; Kytaichuk, 2024; Shaub, 2020; Panteleiev, 2020).

Thus, the EU's experience in supporting the professional ethics of accountants encompasses both legislative and organizational mechanisms aimed at ensuring high-quality services, transparency, and accountability. Each country has its specific initiatives tailored to local needs and national requirements, which can serve as valuable insights for Ukraine in improving its own system for supporting professional ethics in accounting and auditing.

3. Modern Challenges Impacting Ethical Standards and Accounting Practices in EU Countries

Ethical standards for professional accountants in the EU have gained significant importance in the face of global challenges such as economic instability, wars, sanctions, climate change, stricter anti-money laundering requirements, and new cybersecurity threats. War and sanctions have intensified the need for transparent and accountable reporting to prevent corruption and maintain economic stability in conditions of restricted market access.

European countries also face difficulties in ensuring the professional ethics of accountants. In some regions and countries, corruption and lack of transparency are relatively widespread, significantly complicating compliance with ethical standards. The shortcomings and inconsistencies in legislation across certain jurisdictions regarding the oversight of ethical compliance hinder the implementation of effective control mechanisms.

In Europe, there is an increasing emphasis on disclosing non-financial and diverse types of information, with new directives and standards on non-financial reporting and sustainability reporting coming into effect. Climate change necessitates the enhanced adoption of ESG reporting. All this increases the obligations of accountants regarding sustainable development and accountability for the environmental impact of companies, preventing distortions and abuses in the form of greenwashing (Semenova, 2024).

Technological challenges, including cyber threats, highlight the need to maintain confidentiality and ensure the reliability of financial data (Bondarenko & Sytnichenko, 2023), which is especially important in the digital age when financial violations can lead to global consequences. The use of automation and artificial intelligence also adds challenges, as it reduces opportunities for critical judgment and integrated thinking (Korol, 2024), which is essential for integrity.

At the same time, conflicts of interest that often arise in connection with the advisory functions of accountants require improvements in regulatory measures to preserve independence and objectivity. In crisis conditions, such as war or sanctions, accountants face additional pressure, which sometimes necessitates compromises in reporting. Insufficient support from professional organizations, particularly in the form of training and monitoring, also weakens adherence to standards.

The critical analysis of the uniqueness of the experience of European countries in ensuring ethical standards for accountants covers several aspects. First, some experts believe that EU approaches are excessively regulated, creating a significant administrative burden on accounting firms, especially small companies. Requirements for transparency, constant reporting, and strict adherence to standards can be burdensome and excessively costly. Moreover, despite the introduction of high ethical standards, including the International Code of Ethics for Professional Accountants (IESBA Code), conflicts of interest and even corruption still occur, which indicates possible limitations in the effectiveness of existing tools.

Another aspect of criticism concerns the implementation of ethical standards, which are often insufficiently adapted to the local cultural and economic conditions of individual EU member states. Unified requirements do not always take into account the peculiarities of national labor markets, which may lead to formal compliance without real improvements in ethical practices. Additionally, dynamic challenges such as cybersecurity and privacy protection, which have become particularly relevant with the development of technology, have exposed the insufficient readiness of some European systems to make rapid changes and adaptations.

4. The impact of sanctions and the risks of military conflicts on the adherence to ethical principles by European accountants

Sanctions against Russia and the war it has waged against Ukraine have significantly impacted the professional ethics of accountants in the European Union, as they have changed the conditions and approaches to accounting practices. Key aspects of this impact relate to ensuring transparency, objectivity, accountability to society, and the necessity of complying with sanctions legislation. Professional accountants and auditors must carefully evaluate business transactions to ensure that companies comply with sanctions restrictions while adhering to international ethical standards. Sanctions also create challenges regarding objectivity and independence, as they require assessing counterparties for potential sanctions risks or deciding whether to terminate cooperation with certain clients, which may create a conflict between the company's commercial interests and ethical requirements. In EU countries actively supporting the sanctions regime, European accounting associations provide special recommendations for accounting sanctions risks, helping accountants develop transparent reports and avoid activities that could lead to violations of sanctions (Kytaichuk, 2024). Therefore, the European experience in this area is very valuable for Ukraine (*Table 2*).

Table 2

The European Experience in Overcoming Military Risks, Sanctions, and Conflicts of Interest, and Ensuring Proper Ethical Standards for Accountants

Key aspects of ensuring the ethics of accountants	European experience in overcoming challenges and threats from military risks, sanctions and conflict of interest
Transparency and accountability in reporting	European accountants are required to ensure that their clients do not violate sanctions restrictions. This includes thorough due diligence on counterparties for their involvement in the Russian market or connections to sanctioned entities. Professional accounting bodies in the EU have developed guidelines for auditors and accountants to help them work responsibly in the new environment. Ensuring transparent reporting under sanctions is an important requirement, which is important for maintaining public trust in the accounting profession
Maintaining independence and objectivity	The sanctions have presented European accountants with the ethical challenge of balancing the commercial interests of clients with compliance with sanctions legislation. Professional associations in EU countries (e.g. Germany, France and the Netherlands) stress the importance of auditors' objectivity and independence in order to avoid situations where auditors may be subject to pressure from clients seeking to avoid the consequences of sanctions
Social Responsibility	The war has also prompted the European professional community to reconsider its ethical principles in light of social responsibility. The stance of many accounting firms in supporting Ukraine is significant, including ceasing work with clients in Russia and adopting a zero-tolerance policy towards supporting the aggressor. These measures are not only a response to sanctions, but also a clear desire to support social justice
Updating Ethical Standards and Adapting to Modern Challenges and Changes	EU countries adhere to international standards such as the IFAC Code of Ethics, but are also constantly adapting them to new challenges. For example, the UK and Germany have developed additional standards for digital ethics and ethics in the context of technological transformation. This includes restrictions on the use of artificial intelligence and new recommendations on cybersecurity in the financial audit sector, which contribute to data protection and confidentiality
Support from Professional Organizations	Professional bodies such as Accountancy Europe and other national associations provide support, guidance and recommendations for working under sanctions. They provide accountants with specific guidance on managing risks related to war and sanctions, helping them make ethically responsible decisions

Source: compiled by the authors on the basis of and processing (Johnson, 2020; Shawver & Miller, 2018; Golov et al., 2022; IFAC, 2021; Fomina et al., 2022; Korol et al., 2024; IESBA, 2024, August 29; Kytaichuk, 2024).

Thus, the European experience in ensuring the ethics of accountants in times of military risks, sanctions and conflicts of interest is based on several key aspects: transparency and responsibility in financial reporting, independence and objectivity in work, social responsibility, updating ethical standards in accordance with modern challenges, as well as constant support from professional organizations. These factors strengthen the role of accountants in ensuring reliability and integrity in financial matters, help reduce corruption risks and increase confidence in the financial system in crisis situations. Ukraine can borrow European approaches to transparency under sanctions by developing clear guidelines for accountants to do business with companies that potentially violate international law. Thus, the adaptation of EU best practices in Ukraine will help accountants to work responsibly, minimizing risks and ensuring ethical transparency in modern conditions.

5. Key aspects of European experience in ensuring the ethics of accountants: practical recommendations for Ukraine

In order for Ukraine to successfully adapt the best European experience in supporting and ensuring high standards of professional ethics for accountants, it is necessary to implement a number of specific steps aimed at strengthening the role of professional standards and ethical training of specialists. The proposed specific measures and steps for implementation in Ukraine are presented in *Table 3*.

Table 3

Introduction of European experience in ensuring the ethics of professional accountants in Ukraine

Measures and steps	Characteristics
Introduction of ethical standards based on the International Code of Ethics for Professional Accountants (IESBA Code)	Many EU countries have adapted this code, which sets high ethical standards for accountants. The use of such a code ensures the unity and universality of standards, as well as clear requirements for transparency, objectivity, confidentiality and professional conduct. Supplementing at the national level regulatory documents, regulations, instructions, explanations that would accompany the implementation of the IESBA Code will help Ukrainian accountants work according to international standards, which will contribute to transparency and increase trust in the financial statements of Ukrainian companies at the international level. This is especially important for attracting foreign investment, as investors will be able to rely on a high level of ethics in financial reporting
Establishment of an independent ethical oversight body	In European countries, independent ethical oversight bodies are effective, which verify the quality of accounting and auditing services provided and compliance with ethical standards. For example, in the Netherlands, the AFM (Dutch Authority for the Financial Markets) and in the UK, the FRC (Financial Reporting Council) independently supervise compliance with ethical standards for accountants and provide mandatory investigation of violations, which significantly increases the level of responsibility of accountants and auditors
Adaptation of ethical standards to crisis conditions	Given the experience of EU countries that have special provisions for working in crisis situations, it is important for Ukraine to develop instructions for accountants in situations where standards may be difficult to apply due to war or sanctions restrictions. This will help maintain trust in the profession and adhere to ethical standards even in difficult political and economic situations
Development of mechanisms to reduce and prevent conflicts of interest	The introduction of mandatory rotation of auditors and the companies they work with can significantly reduce the risk of conflicts of interest, which is a common ethical problem in the profession. In the Netherlands, for example, laws require regular changes of audit firms for large enterprises, which creates additional protection against potential pressure on auditors. Ukraine should also consider the possibility of establishing independent ethics committees in large companies to verify the actual rotation of auditors through ties to related parties, to review and help resolve conflicts of interest, providing accountants with protection from external pressure from management or clients
Obligation to disclose conflicts of interest	European standards require professional accountants to identify and disclose possible conflicts of interest, which reduces the risk of unethical behavior. This promotes transparency and allows clients and stakeholders to be confident in the accountant's impartiality
Anti-corruption initiatives and combating money laundering	The EU Anti-Money Laundering and Anti-Corruption Directives oblige the accounting profession to report suspicious financial transactions, including through special reporting channels. This reduces risks for accountants and contributes to the stability of the financial system. Similar requirements are enshrined among the responsibilities of the chief accountant in the Law of Ukraine "On Accounting and Financial Reporting in Ukraine", but there is a need for clearer explanations for all accounting and reporting professionals

Measures and steps	Characteristics
Integration of Ukrainian professional organizations into the European space	Participation of Ukrainian accounting associations in organizations such as Accountancy Europe will help Ukraine integrate its ethical standards into the pan-European context. This will allow Ukrainian accountants to be competitive at the international level, and will also facilitate access to up-to-date information and resources on ethics. Many EU countries have long coordinated their ethical standards at the European level, which helps to create a consistent approach to accounting, reporting and auditing. Ukraine should involve its professional community in such international initiatives in order to borrow innovative approaches in a timely manner
Supporting professional ethics through training and certification	Professional ethics training programs are an integral part of accountants' training in many European countries, such as France and Germany. Ukrainian professional associations should organize mandatory refresher courses for accountants and auditors, focusing on ethical dilemmas, social responsibility and reporting on environmental, social and governance aspects (ESG reporting). European organizations actively support such training programs and certification to improve professional ethics, which helps accountants better understand new standards and be prepared for ethical challenges. This will not only improve the qualifications of specialists, but also contribute to the formation of a responsible professional community in Ukraine
Supporting transparency through the development of corporate social responsibility	European countries, such as France, support high ethical standards through requirements for social responsibility and ESG reporting, which reflects the impact of companies on society and the environment. Ukraine should encourage accountants and companies to implement similar standards, which will ensure transparency, increase investor and public confidence, and promote responsible business conduct
Forming a rating and blacklist of violators of ethical rules	Forming a rating and blacklist of accountants who have violated ethical standards increases transparency and accountability in the profession. This allows clients to avoid unscrupulous professionals, motivates accountants to adhere to standards, and makes it easier for regulators to monitor ethical compliance. For Ukraine, the introduction of such tools based on European experience would help strengthen trust in the profession

Source: compiled by the authors on the basis of and processing (Bardash et al., 2023; Kytaichuk, 2024; Gisby, 2022; Bezverkhyi & Poddubna, 2023; Umantsiv et al., 2023; Fomina et al., 2022; IESBA, 2024, August 29; IFAC, 2018).

Thus, by adapting advanced European experience, Ukraine will be able to create a sustainable system of supporting ethical standards in accounting, which will increase trust in the profession both at the national and international levels.

Conclusions

In the research of accountants' professional ethics, unresolved issues remain related to the adaptation of ethical standards to modern challenges, such as globalization, digitalization, the use of artificial intelligence, as well as new reporting requirements for environmental, social and managerial (ESG) criteria. Also conflicts of interest and the independence of accountants are important, who often face pressure from clients or work in a highly competitive environment, which makes it difficult to ensure their real independence. It is especially difficult to maintain ethics in political and economic crises, including wars and sanctions, when ethical standards must be adapted to new circumstances. A separate problem is strengthening the role of accountants in ensuring social responsibility and transparency of reporting, which is important for compliance with ESG standards.

The value of European experience is important for the implementation and realization of Ukraine's European integration aspirations in ensuring high standards and requirements for professional ethics of accountants.

Problems and difficulties in ensuring proper professional ethics of accountants in the EU countries are mainly associated with non-compliance with regulatory requirements and, as a result, with scandals in the field of audit and confirmation of quality and reliability, conflicts of interest in working with state-owned companies, money laundering, non-compliance with sanctions, cyber attacks, as well as insufficient effectiveness of the ethical supervision and control system for timely detection of fraud. Another problem is the difference in cultural and economic characteristics in the EU countries, which affects the uneven level of implementation and compliance with ethical standards. All this shows that even high ethical standards do not always guarantee compliance with professional ethics in practice, especially in the face of rapid changes and new challenges. Therefore, it is necessary to improve and adapt ethical standards, providing a more flexible approach to their implementation in different EU countries, including Ukraine.

The introduction of European experience in Ukraine in ensuring ethical standards for professional accountants is an important step towards improving the quality and transparency of financial services. The inclusion of ethical standards developed on the basis of the International Code of Ethics (IESBA Code), the creation of an independent ethical oversight body, the adaptation of standards to crisis conditions, the development of mechanisms for preventing conflicts of interest and the mandatory disclosure of such conflicts – all this contributes to increasing confidence in the accounting profession and strengthening the reliability of financial reporting. Initiatives that include anti-corruption measures, anti-money laundering, the development of corporate social responsibility and the formation of ratings of ethical violators are the basis for building a modern, stable ethically oriented accounting system. These recommendations also contribute to deeper integration of Ukrainian professional organizations into the European space and increase their professional level, which, in turn, will strengthen the stability and transparency of the Ukrainian economy in the face of modern challenges.

Prospects for further research are a deeper analysis of the effectiveness of ethical supervision and the integration of new technologies in ensuring the ethics of the accounting profession in Ukraine in the face of modern challenges and threats.

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