The object of research is the financial security of business projects in the context of the digital transformation of the economy. The issue tackled relates to the increasing frequency of internal and external financial threats that undermine business stability while conventional management methods do not take into account the new challenges of the digital economy.

Methods of financial security management have been proposed that integrate classical approaches (administrative, economic, organizational, mathematical, socio-psychological) with digital technologies – artificial intelligence, Big Data, blockchain, and cloud platforms. Such integration provides multi-level protection against risks, allows for timely identification of threats, increases the accuracy of financial forecasting, as well as contributes to the adaptability and efficiency of management decisions.

The results make it possible to solve the task of increasing the financial stability of business projects in a changing environment through the comprehensive approach and adaptability of the model, which is based on a combination of systemic and interdisciplinary approaches with the active use of digital tools. The proposed structural diagram of the financial security management model of business projects makes it possible to minimize losses, increase investment attractiveness, and devise effective anti-crisis strategies.

Comparative analysis based on empirical data and international experience has revealed a significant advantage of digital models: the efficiency of systems using intelligent technologies exceeds the results of conventional approaches by an average of 30%. In particular, it was established that the use of adaptive digital models ensures operational identification of risks, increases the accuracy of financial forecasting, and minimizes the likelihood of crisis scenarios.

Practical areas for improving management strategies for financial security of business projects have been outlined, in particular through the development of digital infrastructure, automation of control, introduction of a dynamic budgeting system, as well as predictive and analytical risk management models

Keywords: financial security, business project, risk management, artificial intelligence, blockchain, digital technologies

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CONSTRUCTION OF A MANAGEMENT MODEL FOR FINANCIAL SECURITY OF BUSINESS PROJECTS IN THE CONTEXT OF DIGITALIZATION

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1. Introduction

The concept of financial security of business projects is gaining particular importance in the context of growing instability of financial markets, high volatility of investment flows, and intensification of external and internal threats. The modern economic environment is characterized by significant challenges caused by both global crises and regional political or economic upheavals, which is why ensuring financial security is addressed as an urgent task for the stable functioning of business. Successful management of business projects involves not only effective planning and implementation of measures but also constant monitoring of the state of financial resources, identification of risks, and development of adaptive strategies to protect them from potential dangers.

Despite numerous scientific developments on determining the essence of financial security, its systemic threats, as well as mechanisms for ensuring it, the issues of practical integration of digital technologies in this area remain insufficiently researched. It is urgent that we need to improve models for assessing the effectiveness of such tools as artificial intelligence, Big Data, and blockchain, since in the absence of unified standards and methodological approaches, their implementation in the practical activities of business projects is limited. These innovative technologies have the potential to significantly increase the accuracy of financial analysis, automate risk management processes, and provide a high level of transparency of financial flows, which is extremely important for ensuring business sustainability [1].

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World experience clearly demonstrates the positive impact of digital innovations on increasing the financial stability of enterprises. Most studies focus on the macro level and the analysis of the impact of digital technologies on the state or large business, while managing the financial security of individual business projects requires a deeper and more detailed analysis at the micro level. In addition, it is increasingly important to take into account factors such as financial inclusion and digital accessibility, which significantly affect the ability of small and medium-sized businesses to effectively manage financial risks [2]. This aspect is especially relevant in the context of the expansion of the use of mobile and online financial services, which increase the accessibility of finances, but at the same time create new security challenges.

Therefore, the relevance of specific research is justified by the complexity of modern economic conditions and the growth of digitalization in financial security management. The results of such research could contribute to the development of effective models and methods that would increase the accuracy of risk management, adaptability of business processes, and the stability of enterprises under changing economic conditions.

2. Literature review and problem statement

Financial security of business entities is considered as part of the financial security of the state as enterprises create added value that affects the gross domestic product of the country [3]. It was found that there is insufficient methodological consistency in the definition of financial security, in particular, the lack of unified approaches to taking into account both external and internal threats. This complicates the formation of effective mechanisms for its provision in various functional areas of the economy.

In [4], financial security is defined as a state of protection of the financial interests of the economic system from threats, which is ensured by the efficiency of economic relations and the implementation of financial development guidelines. However, the issue of specifying and systematizing the factors that complicate the achievement of such a state remains open, which requires further research.

In [5], the financial security of an enterprise is defined as the ability to withstand financial risks through control and management aimed at sustainable development. The issues of adapting existing management tools to modern challenges, in particular under conditions of increased uncertainty and digital transformations, remain unresolved.

A number of researchers are engaged in the analysis of the financial security of enterprises and enabling it in the war and post-war recovery period [6, 7]; in particular, they focus on a systemic approach to financial security management, which includes interconnected elements of functional integrity. The lack of consideration of digital challenges, cyber risks, and rapid changes in the financial environment in these approaches is the main drawback that reduces their effectiveness under current conditions.

Analysis of scientific sources reveals a significant impact of digital technologies on increasing the level of financial security. In particular, in work [8] it is noted that modern digital technologies, such as artificial intelligence, machine learning, and cloud solutions, can be integrated into business risk management and increase the financial stability of enterprises. At the same time, it was found that the research does not address the complexity of integrating digital innovations into classical management systems and does not sufficiently consider the adaptation of business projects to the digital environment.

In [9], a theoretical model of the financial security mechanism of an enterprise, adapted to the digital economy, is substantiated, indicating the advantages and threats of digitalization. However, the issue of standardization of methods for assessing the effectiveness of digital tools is not settled, which limits their practical use.

In work [10], the specificity in the formation and implementation of financial security of enterprises in the digital economy is revealed, focusing on its adaptive nature. However, the influence of external factors, in particular global cyber threats, on the adaptability of financial security in different types of enterprises is not studied.

In [11, 12], financial inclusion is considered as a factor in strengthening financial security at the macro level. At the same time, the mechanism for integrating these capabilities into management practices at the level of individual business projects remains unexplained, as well as the risks associated with cyber threats and fraud in connection with the mass implementation of financial inclusion are not analyzed.

In [13], attention is focused on the impact of artificial intelligence on the financial performance of financial institutions. Despite the establishment of a positive impact of AI on risk management and internal control mechanisms, the problem of practical implementation of these technologies at small and medium-sized businesses projects remains unresolved.

According to [14], more than 60% of companies in 2024 noted an increase in financial threats associated with cyber risks and market volatility. In this regard, the search for innovative management models that would be adapted to such challenges is not highlighted in detail.

All this allows us to argue that existing methods of financial security management require significant improvement due to the impact of digitalization and changes in the financial environment. The use of digital technologies and tools is proposed as an effective direction for enhancing security; however, the lack of unification of standards for assessing their effectiveness complicates practical implementation. The task of integrating these tools into conventional management systems remains unresolved, which is a critical condition for increasing business sustainability in a dynamic environment.

Thus, an unresolved set of problems has been identified: the lack of a systematic approach, standardization, and adaptation of digital tools in financial security management at the level of business projects.

3. The aim and objectives of the study

The purpose of our study is to build a model of financial security management of business projects in the context of digital transformation, which combines modern digital tools and ensures stability, flexibility, and long-term viability of the business and its adaptation to financial risks. This will make it possible to identify financial risks in a timely manner, automate the monitoring of financial flows, increase business stability, and devise effective financial security management strategies.

To achieve the goal, the following tasks were set:

– to determine the features of existing financial security management methods and the effectiveness of digital tools;

– to substantiate the role of digital technologies (artificial intelligence, Big Data, and blockchain) in reducing risks and increasing the effectiveness of financial security management;

– to propose a structural diagram of the financial security management model of business projects.

4. The study materials and methods

The object of our study is the financial security of business projects in the context of the digital transformation of the economy. The subject of the study is applied mechanisms for managing the financial security of business projects using digital technologies (AI, Big Data, blockchain, cloud computing) to reduce internal and external risks.

The hypothesis of the study assumes that the integration of classical methods of financial security management with digital technologies ensures higher efficiency of protecting business projects in a turbulent and dynamic environment.

It is assumed that business projects operate under complex conditions of interaction with the external and internal environment where risks are both systemic and random in nature. To simplify the study, it is assumed that digital tools have the ability to adapt to operational processes in business without significantly affecting their basic structure.

A comprehensive interdisciplinary approach is applied. It combines systemic, structural-functional, comparative, analytical-statistical, and graphical research methods. The system approach allowed us to consider the financial security of business projects as a multi-level dynamic system that interacts with the external and internal environment, and the structural-functional approach allowed us to detail the elements of management and their functional relationships in ensuring financial stability. The comparative method was used to analyze the effectiveness of classical and digital financial security management tools based on international and domestic research. The analytical and statistical method allowed us to interpret digital material, in particular the performance indicators of various models, as well as to assess the impact of the implementation of innovative technologies (AI, Big Data, blockchain) on reducing risks and increasing the financial stability of business projects.

5. Results of investigating the models of financial security management of business projects

5. 1. Features of financial security management methods and determination of the effectiveness of digital tools

Financial security management methods act as applied means of implementing the functional content of mechanisms adapted to a specific stage of the business project life cycle, industry specificity, institutional environment, and nature of threats. The methodological diversity of approaches to management is due to the need for interdisciplinary coverage of the management object and ensuring its systemic stability (Fig. 1).

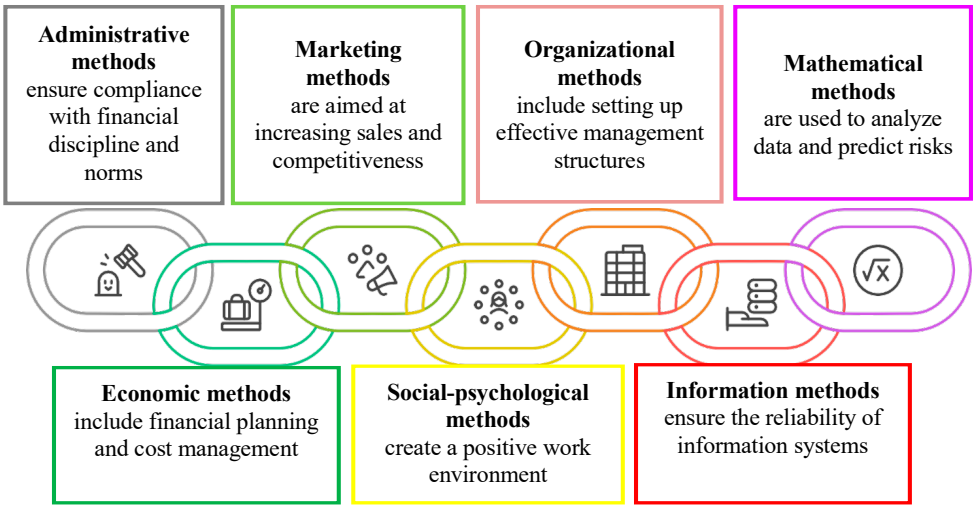

Fig. 1. Methods for managing the financial security of business projects

In the context of the digitalization of the economy and growing challenges in the field of financial security of business projects, a method of financial security management is proposed, based on the combined application of existing methods with the integration of digital tools. Through preventive strategies and automated analytical platforms, this method is manifested in the design of a multi-level system that provides not only control and protection of financial resources but also an active response to threats.

Administrative methods in this system play the role of instruments of imperative influence, guaranteeing strict adherence to financial discipline, compliance with regulations and internal standards. And this is the basis of institutional regulation of the financial architecture of a business project. The implementation of digital control systems makes it possible to increase the reliability of procedures and minimize the risks of unauthorized interference in financial flows. Marketing methods are built into the outer shell of the model, contributing to the growth of profitability through the expansion of market segments and the activation of sales processes, which has a positive effect on financial revenues [15].

Organizational methods within this approach ensure the optimization of management structures and processes through decentralization of authority, the introduction of matrix and project-oriented management systems. It is also necessary to take into account the development of internal controlling, which becomes a tool for preventive detection and neutralization of risk deviations. This contributes to increasing the reactivity of the enterprise to the requirements of the external environment and the optimal use of financial and intellectual resources.

The effectiveness of the implementation of business projects is determined using mathematical methods, which are gaining significant importance under the conditions of digitalization of management processes. Mathematical methods, in particular modeling of risk situations, probabilistic analysis, and forecasting of critical scenarios, play an important role in the management system. They make it possible to quantitatively justify strategies for protecting a business project and adapt management measures based on real data under current conditions. The synergy of such mathematical tools with digital information systems improves the quality of financial risk management.

Economic methods form the financial basis of protection, ensuring the rational use of resources and minimizing oper-

ating costs. This component focuses on the balance between stability and efficiency of business activities.

An important component is socio-psychological methods that increase staff loyalty and create a positive psychological climate, which helps eliminate risks associated with the human factor, such as internal conflicts, staff turnover, and loss of productivity. They contribute to increasing the overall effectiveness of the financial security management system.

Under today's conditions, in addition to classical methods, it is necessary to distinguish digital ones, which act not only as a technical but also as a strategic tool for managing financial security. After all, they are based on the principles of transparency, accessibility, reliability, and relevance of data used in the process of control, audit, monitoring, and forecasting. A high level of information support ensures analytical accuracy of management decisions, promotes the implementation of business intelligence systems, intelligent data analysis, and ERP solutions that integrate the management of all key resources of a business project. According to research, the effectiveness of methods is defined as follows: classical methods – 60%; digital methods – 90% (Fig. 2).

Fig. 2 shows that digital methods of financial security management through the use of AI, Big Data, blockchain, and cloud platforms significantly exceed the effectiveness of conventional approaches.

The value of digital methods is in their integration with various management tools, which allows the enterprise to ensure timely detection of threats, prompt response, and long-term viability of the business project. These methods of financial security management are distinguished by their complexity, multi-level character, and integration of classical and digital tools. The main features of these methods are the combination of administrative, organizational, marketing, mathematical, economic, and socio-psychological approaches with the use of digital technologies, which increases their effectiveness and adaptability to changes in the external environment.

The definition and systematization of these features allows us to clearly understand that they form the basis for the further development of our model of financial security management. Without taking into account the identified characteristics, it is impossible to build an effective system that ensures timely detection of threats, prompt response, and long-term sustainability of the business project.

5. 2. Role of digital technologies in constructing a model for managing the financial security of business projects

From the perspective of financial security, a business project acquires the status of a tool for managing forecasted financial flows, sources of financing, risk factors, and financial stability standards. After all, it must reflect not only target profitability indicators but also measures to minimize losses, anti-crisis scenarios, adaptation mechanisms in case of economic turbulence or external shocks. The cybersecurity index of the world's leading countries is shown in Fig. 3.

Under conditions of high instability of the external environment and complicated access to financial resources, the critical element is the integration of a financial security management model into the structure of the business project.

Special attention in this system should be paid to digital control tools that provide automation of monitoring and timely detection of anomalies in financial flows. They also contribute to the implementation of innovative directions in risk assessment using Big data, artificial intelligence, and blockchain solutions.

It is reasonable to consider AI since it is one of the basic digital control tools that plays a fundamental role in maintaining the financial security of business processes. Its application allows for continuous monitoring of financial transactions, prompt detection of anomalous deviations, formation of adaptive strategies for countering risks, and increasing resilience to internal and external threats. Global market assessments also confirm the growing role of AI in financial management. According to IMARC Group, in 2023 the global financial market based on artificial intelligence technologies reached 14.6 billion US dollars. And by 2032 it is expected to grow to 87.7 billion US dollars at an average annual growth rate of 20.9% [14]. This indicates the extremely high potential of AI in transforming financial security mechanisms and ensuring strategic business flexibility in the digital economy (Fig. 4).

Companies around the world are increasingly investing in artificial intelligence, with IT and marketing leading the way. 60% of companies worldwide are using AI-based automation to improve management decision-making. AI-based analytics in leading companies could increase profits by 25%. Integration of digital technologies in financial security management is illustrated in Fig. 5.

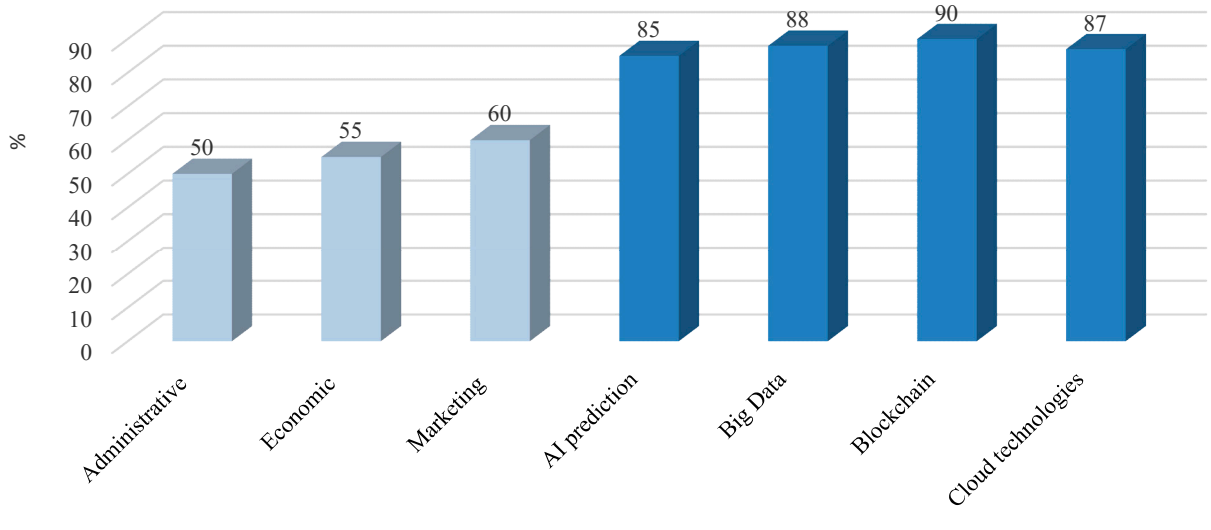

Fig. 2. Effectiveness of methods for managing the financial security of business processes
Source: based on [3, 16–18]

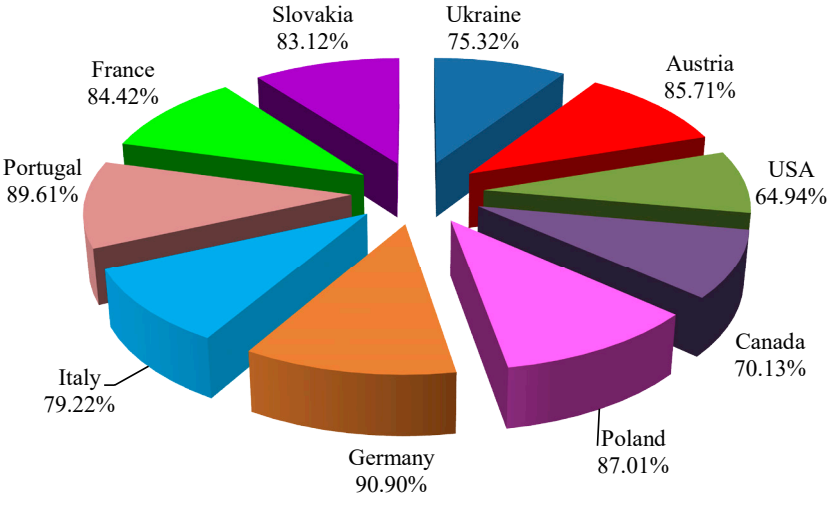

Fig. 3. Level of cybersecurity of countries [13]

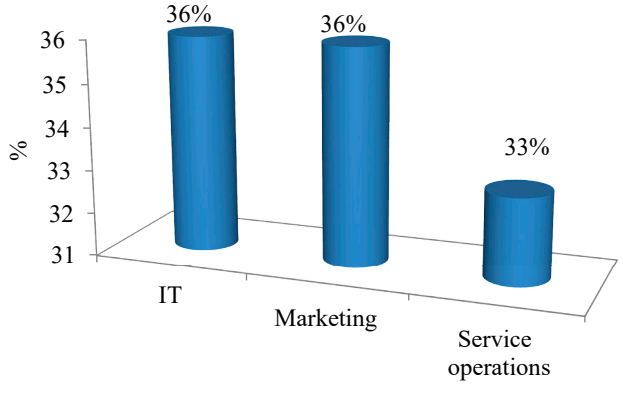

Fig. 4. Enterprise investment in artificial intelligence

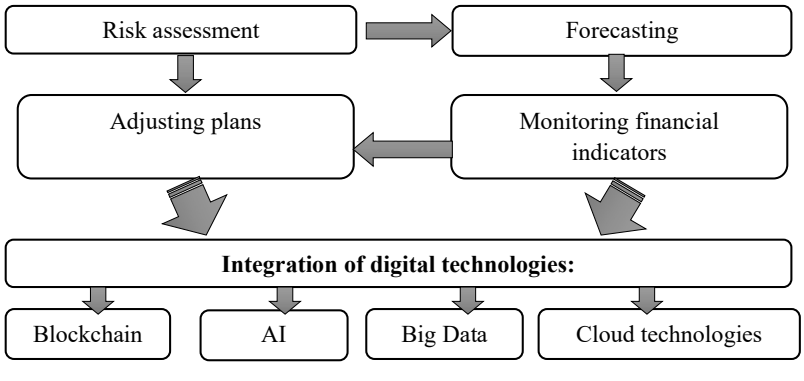

Fig. 5. Integrating digital technologies in financial security management

This diagram illustrates a cyclical process where risk assessment and forecasting interact with monitoring and adjustment of plans, supported by digital technologies for fast and accurate decision-making. The use of AI and Big Data makes it possible to increase the accuracy of financial flow assessment, ensure continuous data analysis, as well as the formation of adaptive response strategies. Blockchain solutions guarantee transparency and reliability of financial transactions.

As a result of the application of these management mechanisms, the following can be achieved: stabilization of financial activities, minimization of losses, increased flexibility in management decisions, increased investment attractiveness of a business project, as well as an increase in the system's ability to adapt in response to external challenges.

5. 3. Structural scheme of the model for managing the financial security of business projects in the context of systemic transformations

The structure of the integrated management model represents a multi-level system of response to internal and external threats that determine the risks of reducing the financial stability of a business project. It is in this context that it is advisable to consider the mechanisms for managing the financial security of business processes, taking into account systemic challenges, shown in Fig. 6.

Internal threats encompass a number of endogenous factors, among which the most important are inefficient resource management, fraud, personnel incompetence, and high levels of internal debt. At the same time, external threats are the result of the destructive effects of the macroeconomic and political-institutional environment and include economic instability, fiscal burden, competition, military-political tension, labor migration, and technogenic risks.

The central place in the structure of the model is occupied by the category "Financial security of a business project", which functions as a system-forming element that accumulates all areas of management activity aimed at ensuring the sustainability and profitability of the project under conditions of uncertainty. The implementation of the concept of financial security is carried out through the integration of a number of management mechanisms that act as instruments of stabilizing influence. Among them, the main ones are:

– risk management – to identify, assess and minimize the impact of financial threats;

– strategic financial planning forms long-term goals and reserves for stability;

– anti-crisis management ensures the operational restructuring of financial flows in critical situations;

– financial reserving – aimed at mobilizing internal resources in the event of deterioration in solvency or profitability.

A methodical approach to the formation of management decisions using the controlling mechanism in the financial security management system of enterprises is advisable [19]. The structural diagram of the financial security management model of business projects is shown in Fig. 7.

This model is based on a combination of integration of mechanisms that ensure effective management of financial security of business projects. The upper integration consists of the macro level (state), meso level (region), micro level (enterprise). At the macro level, a legislative framework for financial stability, monitoring, control, and currency stability is created. At the meso level, regional infrastructure development programs are developed, funds are created to support business projects, partnerships are established with banks, investors and territorial communities. At the micro level, the financial literacy of the population, which is aimed at protecting their savings and the ability to manage their finances, internal audit and compliance, risk management, are

important. In the long term, it is important to ensure synergy between state, local, and private sources of financing [20].

Taking into account the dynamism of the business environment and the multifactorial risks that accompany it, we understand that the adaptive capacity of management systems is a determining factor in ensuring financial stability. That is why the change management model, which focuses on constant interaction with the external environment and provides for a flexible response to transformational challenges through adaptive mechanisms at strategic and tactical levels, is of urgent importance. The application of this model allows us to consider financial security not as a static state but as a dynamic process that continuously evolves in response to changes in the institutional, social, and economic context.

Along with this, it is important to implement an integrated approach that synthesizes the tools of financial, economic, legal, and information-technological support, thereby creating a comprehensive methodological basis for making balanced management decisions. Such an approach allows us to reduce systemic risks, improve the quality of analytics, and ensure the appropriate level of legal compliance, which together form a reliable foundation for the long-term financial sustainability of the project.

The main modules for the effective functioning of horizontal integration business processes in the financial security system cover interrelated areas of activity. In particular, the analytical module provides threat monitoring, forecasting, and financial analysis. The organizational module is aimed at creating specialized financial security centers. The legal module is important, which guarantees compliance with the law, the implementation of anti-corruption mechanisms and compliance. As for the technological module, it involves the use of Big Data, digital platforms, and fintech tools. The anti-crisis module includes the formation of reserve funds, the development of recovery plans, and debt restructuring mechanisms, which in combination ensures the stability and continuity of the system. Given the critical role of resource management, it is advisable to separately highlight the components of the proposed model, namely asset and liability management. They are aimed at optimizing the capital structure, increasing the efficiency of asset use and ensuring the balancing of obligations with financial capabilities. These important components of the model allow us to reduce the level of liquidity, avoid financial imbalances, and ensure stable cash flow. Such approaches become especially relevant under conditions of limited access to sources of financing and growing debt burden.

In turn, the compliance management component of the model is considered as a preventive management tool, which is focused on compliance with regulatory requirements, internal regulatory discipline, and ethical standards. Ensuring legal compliance is considered an important component of financial security since violation of compliance not only leads to legal sanctions but also significantly undermines the reputational capital of the enterprise [21]. Joint activities of all stakeholders are required in the construction of an innovative business model of the future [22]. This requires the implementation of constant monitoring of the regulatory environment and adaptation of internal policies in accordance with changes in the external legislative landscape.

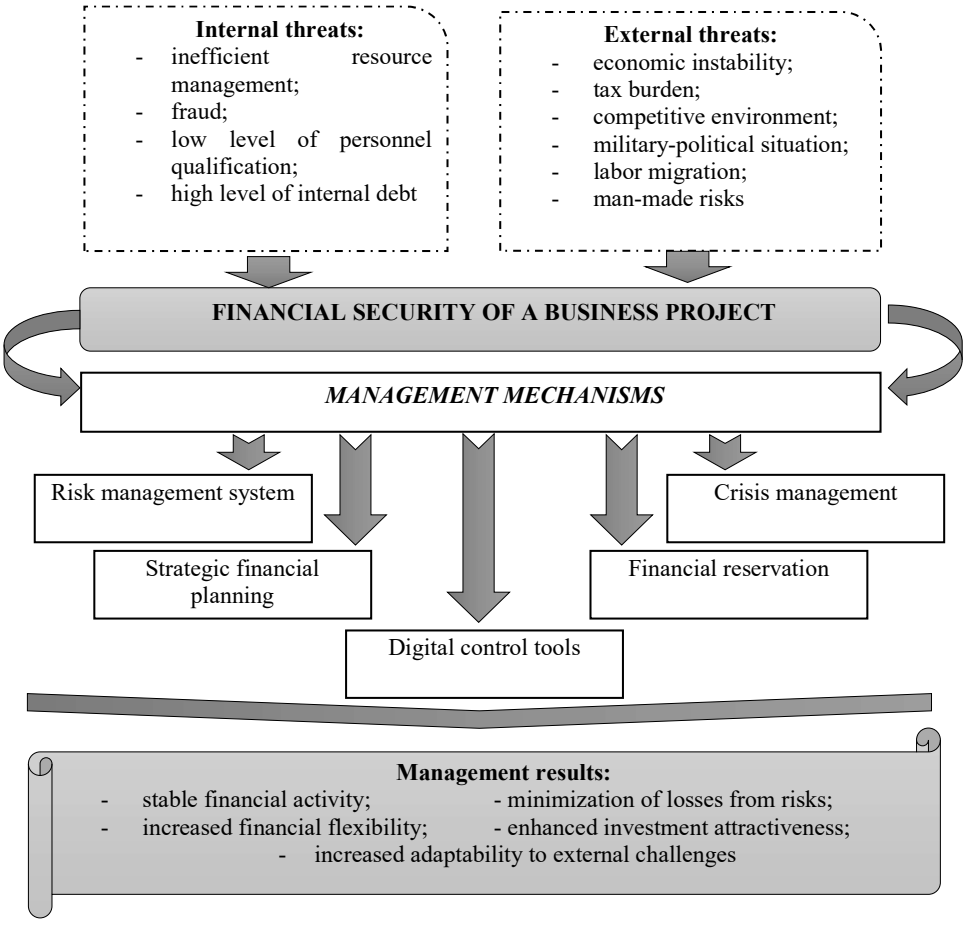

Fig. 6. Mechanism for managing the financial security of business projects taking into account systemic challenges

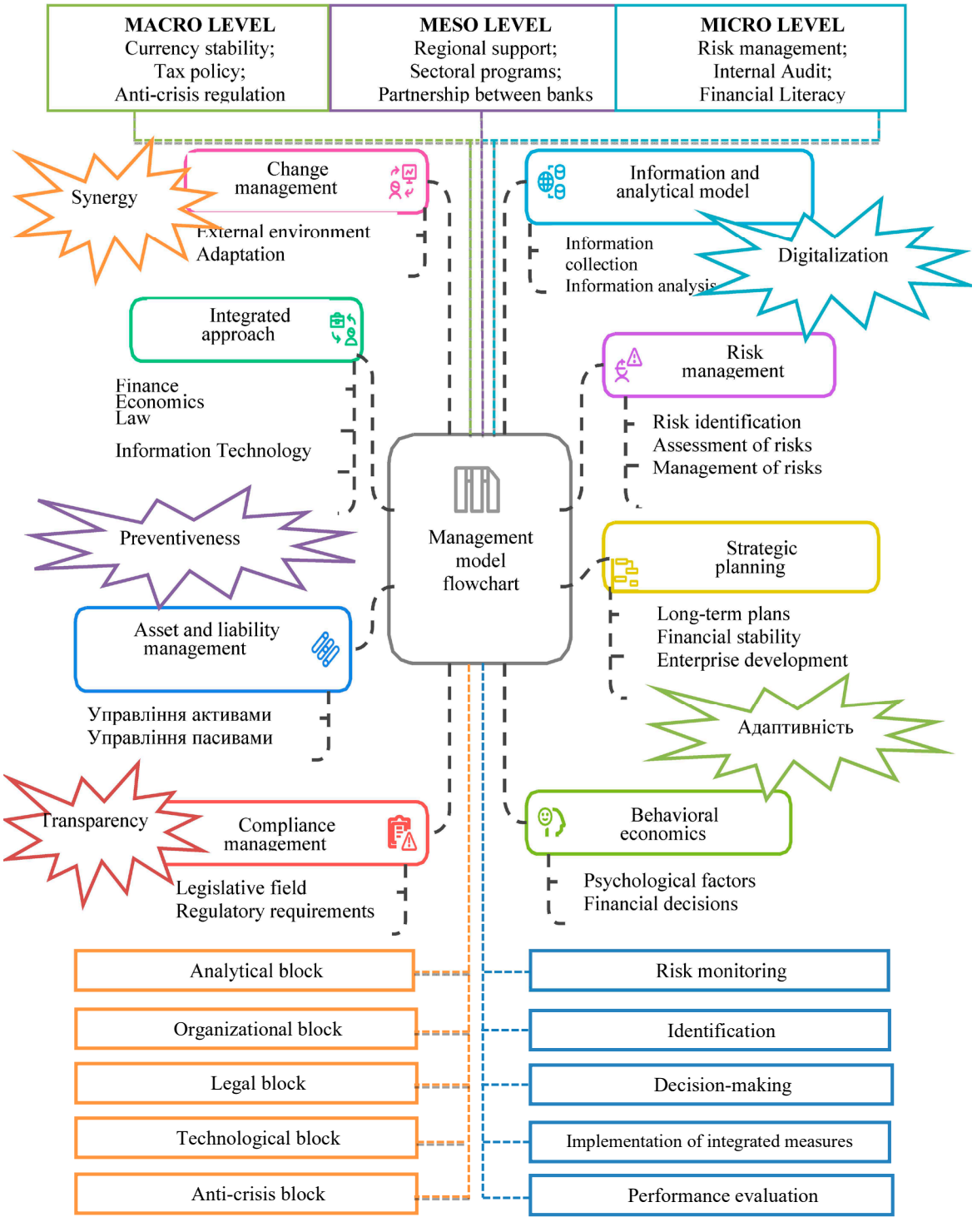

Fig. 7. Structural diagram of the financial security management model for business projects

6. Discussion of results related to constructing a model for managing the financial security of business projects

The integration of methods for managing the financial security of business projects, which are shown in Fig. 1, is based on a protection system based on digital tools. The organizational method optimizes management, the mathematical method assesses risks and forecasts, the economic method ensures the efficiency of resource use, the administrative method is responsible for discipline, the marketing method promotes sales and profit, and the socio-psychological method is responsible for staff motivation.

Digital methods exceed conventional approaches to financial security management due to high application rates. In particular, AI (85%) – analytics and forecasting, Big Data (88%) – risk identification, blockchain (90%) – transparency of financial transactions, and cloud platforms (87%) – scalability of the protection system (Fig. 2). Such values allow us to understand that digital technologies are promising and strategically important in strengthening the financial security of business projects.

Ukraine's cybersecurity index is 75.32%, compared to leading countries in the world, with the highest figures in Germany, Portugal, Poland, Austria, and France (Fig. 3). This indicates the implementation of effective digitalization measures in Ukraine. It should be noted that many global companies in the IT and marketing sectors are increasing their investments in artificial intelligence (Fig. 4). The integration and use of digital technologies increases the accuracy and reliability of financial flow assessment, risk assessment, forecasting, adjustment and monitoring of financial indicators (Fig. 5). In practice, this is manifested in reducing the time required to process results and minimizing costs.

Thus, at the level of each component of the financial security management system, digital technologies solve specific tasks that, in aggregate, provide reliable protection of business projects from financial threats.

The mechanism for managing the financial security of business projects (Fig. 6) and their functioning involves a sequential process that begins with monitoring risks at the macroeconomic, market, and corporate levels. It continues with the identification of threats, in particular currency fluctuations, fraud, tax pressure, or debt risks, and includes assessment and forecasting using scenario modeling and stress tests. This is followed by the development of integrated solutions at all levels – from state regulators to internal strategies of enterprises. Implementation occurs through legal, financial, organizational, and technological measures, and the final stage is feedback, which provides an assessment of effectiveness.

In addition, one of the central positions in the financial security system is risk management, which provides a full cycle of interaction with risks – from their identification and quantitative assessment to the formation of a portfolio of tools for their neutralization. Effective implementation of risk management makes it possible not only to minimize losses but also transform some of the risks into potential sources of growth, through rational management of uncertainty and making strategic decisions based on scenario forecasting. This idea is closely correlated with the work of scientists [4, 8].

The structural diagram of the financial security management model for business projects in Fig. 7 combines macro-, meso-, and micro-level mechanisms, thereby ensuring systemic interaction of state institutions, regional structures, and enterprises. Such a model is practical, comprehensive, and multi-level in nature, integrates classical and digital methods, allows for multi-level protection against internal and external risks. At the macro level, when implementing business projects, the company interacts with state institutions in the field of tax regulation, currency control, and also takes into account anti-crisis regulatory measures, which creates stable external conditions for financial activities. At the meso level, the company participates in joint development programs, establishes cooperation with banks, funds, and territorial communities, which provides support for investment projects. At the micro level, internal risk management, audit and compliance mechanisms are used, which reduce the likelihood of fraud, minimize internal risks, increase the transparency of operations, and form the financial literacy of personnel.

The application of the principles developed in the model allows one to design a transparent management system that is focused on preventive detection of threats, digital transformation of processes, and ensuring synergy of actions at all levels of management. The key principles of the developed model are prevention, which involves the identification of risks, and synergy, which ensures coordinated actions of the state, business, and the population. The principle of adaptability allows one to quickly respond to changes in the external environment. Important principles are digitalization, which involves the use of IT solutions for monitoring and forecasting, as well as transparency, which guarantees the presence of clear control and reporting mechanisms. In practical terms, this is manifested in the company's ability not only to counteract financial threats but also quickly recover from crisis situations, while maintaining financial stability and stable competitiveness.

Our study has certain limitations regarding industry-specific features of the scale of enterprises or regional differences in the level of digitalization. Taking into account the rapid evolution of technologies (AI, blockchain, Big Data), the relevance of individual solutions will require their constant adaptation to changes.

The disadvantages of such a study may be the dependence of the results on rapid technological changes. In the future, these disadvantages can be eliminated by regularly updating the models in accordance with changes in digital technologies.

An important area for further research is the development of management models that combine financial, legal, information technology, and socio-psychological tools. This could increase the sustainability of business projects, ensure their long-term viability and competitiveness in the global market.

The practical implementation of our approaches will contribute to increasing investment attractiveness, minimizing financial losses, and forming a culture of financial security in the corporate environment.

7. Conclusions

1. We have found that financial security management methods are characterized by their specificity. Administrative methods ensure compliance with financial discipline and form the institutional basis of control. Organizational methods increase adaptability through optimization of management structures and internal control. Marketing methods support the growth of income and market positions. Mathematical methods allow quantitative justification of decisions in real time, predicting risks. Economic methods optimize the use of resources, balancing stability and efficiency. Socio-psychological methods reduce risks associated with the human factor. The key feature is the integration of digital methods with classical ones, which, thanks to artificial intelligence, big data, blockchain, and cloud technologies, significantly increases the transparency, accuracy, and adaptability of financial security management, ensuring effective threat detection and rapid response.

2. The introduction of digital tools – such as artificial intelligence, Big Data, blockchain – provides increased monitoring accuracy, responsiveness, automation of compliance management processes, and optimization of financial flow management. The experience of leading international companies confirms that digital methods can increase the efficiency of financial security management by up to 90%, while classical approaches provide only 60% efficiency. The use of adaptive models that allow for dynamic response to changes in the risk profile of the business, as well as information and analytical systems to support management decisions, is of particular relevance.

3. The application of the structural diagram of the model in practice allows the enterprise to significantly increase the accuracy of financial planning and resource control, ensure timely identification and response to risks. This makes it possible to reduce financial losses from crisis situations, optimize the use of working capital, increase the creditworthiness and investment attractiveness of the enterprise. This also allows one to gain trust from partners and stakeholders. The structural scheme of the model is relevant for medium and large businesses that require systematic management of financial threats and seek to implement modern digital risk management technologies. This model scheme is suitable for adaptation to the specific needs of different industries and scales of activity. In combination, the specified structure of the model as the basis for the model itself forms a conceptual framework for managing the financial security of business projects, which combines adaptability, legal compliance, risk tolerance, strategic coherence, and psychological validity of decisions made. Therefore, the implementation of the proposed structural scheme of the model makes it possible not only to improve financial security management but also become an element of a long-term strategy for sustainable business development.

Conflicts of interest

The authors declare that they have no conflicts of interest in relation to the current study, including financial, personal, authorship, or any other, that could affect the study, as well as the results reported in this paper.

Financing

The study was conducted without financial support.

Data availability

All data are available, either in numerical or graphical form, in the main text of the manuscript.

Use of artificial intelligence

The authors confirm that they did not use artificial intelligence technologies when creating the current work.

References

1. Bubenko, P. T., Hlukhariev, S. M., Dymchenko, O. V. (2021). Finansova bezpeka innovatsiynoho biznesu yak faktor ekonomichnoho rozvytku. Kharkiv: KhNUMH im. O. M. Beketova, 164. Available at: https://eprints.kname.edu.ua/60193/1/14%20экз%20Фінансова%20безпека%202021_ПЕЧ_11%20МН.pdf
2. Varnalii, Z. S., Cheberyako, O. V., Mykytiuk, O. P., Bondarenko, S. M. (2024). Actuality of the financial security of business entities of Ukraine under in the war and post-war period. Academic Review, 1 (60), 123–140. https://doi.org/10.32342/2074-5354-2024-1-60-9
3. Berzhanir, I. (2023). Financial security management of enterprises in modern conditions. Zeszyty Naukowe Politechniki Częstochowskiej. Zarządzanie, 50 (1), 20–30. https://doi.org/10.17512/znpcz.2023.2.02
4. Nosan, N., Nazarenko, S. (2022). Financial security management in economic security systems at different levels of management systems: methodological problems. Financial and Credit Activity Problems of Theory and Practice, 6 (41), 138–146. https://doi.org/10.18371/fcaptp.v6i41.251418
5. Marusiak, N., Bak, N. (2022). Financial security of the enterprise and threats of its loss in the modern economic environment. Ekonomika Ta Derzhava, 2, 109. https://doi.org/10.32702/2306-6806.2022.2.109
6. Varnalii, Z., Bondarenko, S. (2023). Financial security of Ukrainian enterprises during the war and post-war period. University Economic Bulletin, 56, 106–113. https://doi.org/10.31470/2306-546x-2023-56-106-113
7. Koval, N., Korniyuk? K. (2024). Ensuring the financial security of the enterprise in the conditions of war: problems and features. Agrosvit, 4, 152–158. https://doi.org/10.32702/2306-6792.2024.4.152
8. Zakharkin O. O., Boiko A. B., Sokol Л. B. (2023). Digital Technologies and Tools for the Financial Security of Business. Problems of Modern Transformations. Series: Economics and Management, 10. https://doi.org/10.54929/2786-5738-2023-10-08-02
9. Mekhed, A., Varnalii, Z. (2021). Financial security of enterprises in the digital economy. Socio-Economic Relations in the Digital Society, 3 (42), 55–61. https://doi.org/10.18371/2221-755x3(42)2021253524
10. Lesun, S. (2024). Financial security of enterprises and its features in the conditions of the digital economy. Problems and Prospects of Economics and Management, 3 (39), 341–352. https://doi.org/10.25140/2411-5215-2024-3(39)-341-352
11. Zachosova, N., Herasymenko, O., Shevchenko, A. (2018). Risks and possibilities of the effect of financial inclusion on managing the financial security at the macro level. Investment Management and Financial Innovations, 15 (4), 304–319. https://doi.org/10.21511/imfi.15(4).2018.25
12. Zachosova, N., Babina, N., Zanora, V. (2018). Research and methodological framework for managing the economic security of financial intermediaries in Ukraine. Banks and Bank Systems, 13 (4), 119–130. https://doi.org/10.21511/bbs.13(4).2018.11
13. Maslii, O., Buriak, A., Chaikina, A., Cherviak, A. (2025). Improving conceptual approaches to ensuring state economic security under conditions of digitalization. Eastern-European Journal of Enterprise Technologies, 1 (13 (133)), 35–45. https://doi.org/10.15587/1729-4061.2025.319256
14. Cheng, X., Du, A. M., Yan, C., Goodell, J. W. (2025). Internal business process governance and external regulation: How does AI technology empower financial performance? International Review of Financial Analysis, 99, 103927. https://doi.org/10.1016/j.irfa.2025.103927

15. Vysotskyy, Y. (2025). The Process of Forming Accounting and Analytical Support for Management of the Enterprise's Economic Security. Problems of Modern Transformations. Series: Economics and Management, 17. https://doi.org/10.54929/2786-5738-2025-17-09-02
16. Bhattacharya, J. (2025). AI in Blockchain: Key Statistics and Insights. SEO Sandwitch. Available at: https://seosandwitch.com/ai-blockchain-stats/
17. Azarenkova, G., Vepretska, S. (2024). System for ensuring the financial security of the enterprise. FINANCIAL AND CREDIT SYSTEMS: PROSPECTS FOR DEVELOPMENT, 4 (15), 32–42. https://doi.org/10.26565/2786-4995-2024-4-03
18. Five digital tools to enhance your cash management advice (2024). Flagstone. Available at: https://www.flagstoneim.com/advisers/learn/wealth-management-opportunities/five-digital-tools-to-enhance-your-cash-management-advice
19. Pronoza, P., Kuzenko, T., Sablina, N. (2024). Implementation of financial control tools in the adaptive management of enterprise financial security. Eastern-European Journal of Enterprise Technologies, 1 (13 (127)), 33–40. https://doi.org/10.15587/1729-4061.2024.294765
20. Agres, O., Sodoma, R., Ilchyshyn, I., Kovalchuk, O., Shmatkovska, T. (2025). Regional development project management: financial aspect. Technology Audit and Production Reserves, 3 (4 (83)), 87–92. https://doi.org/10.15587/2706-5448.2025.330027
21. Koncevičs, R., Peņicina, L., Gaidukovs, A., Darģis, M., Burbo, R., Auziņš, A. (2017). Comparative Analysis of Business Process Modelling Tools for Compliance Management Support. Applied Computer Systems, 21 (1), 22–27. https://doi.org/10.1515/acss-2017-0003
22. Sodoma, R., Lesyk, L., Hryshchuk, A., Dubynetska, P., Shmatkovska, T. (2022). Innovative development of rural territories and agriculture in Ukraine. Scientific Papers. Series «Management, Economic Engineering in Agriculture and rural development», 22 (4), 685–696. Available at: https://managementjournal.usamv.ro/pdf/vol.22_4/Art73.pdf