**XIV Міжнародна науково-практична дистанційна конференція**
**«Облік, оподаткування і контроль: теорія та методологія»**
**5 грудня 2025 року, м. Тернопіль**

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## THE ROLE OF ARTIFICIAL INTELLIGENCE IN INCREASING AUDIT EFFICIENCY AND EXPANDING FINANCIAL INCLUSION

The development of the digital economy and the growth of financial transactions significantly change the conditions for the functioning of control and supervision systems. Auditing in the modern environment goes beyond the traditional verification of financial statements and is increasingly focused on risk analysis, assessing the effectiveness of processes and ensuring trust in financial information. At the same time, the problem of financial inclusion is becoming more relevant, which involves equal access to financial services for different social groups, regardless of income level, place of residence or digital literacy. In this context, artificial intelligence is gaining particular importance as a tool capable of transforming both audit activities and mechanisms for expanding financial accessibility.

The use of artificial intelligence technologies in auditing opens up new opportunities for processing large data sets, automating analytical procedures and detecting atypical transactions that are difficult to identify using traditional methods. Algorithmic analysis of financial information allows you to increase the accuracy of audit conclusions, reduce time spent on inspections and reduce the influence of the subjective factor. This is especially important in the context of the digitalization of financial services, when the number of transactions and users is growing much faster than the capabilities of classic control tools. At the same time, artificial intelligence contributes to the formation of a more inclusive financial environment. Analytical

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models used in the financial sector allow you to assess the solvency of clients based on alternative data sources, expanding access to financial products for individuals and groups that previously remained outside the formal financial system. In such an environment, audit plays a key role in ensuring transparency, fairness and compliance of the use of intelligent technologies with ethical and legal norms. Thus, the combination of artificial intelligence, audit, and financial inclusion forms a new paradigm of control and trust in the financial system.

Based on individual elements of research [1-4], it is possible to identify individual features of the use of artificial intelligence technology in auditing and determine the impact on the expansion of financial inclusion. Thus, the introduction of artificial intelligence into financial and control processes leads to qualitative changes in the methodology and practice of auditing. Unlike traditional automation tools, artificial intelligence technologies are based on the ability of systems to analyze significant arrays of heterogeneous data, identify hidden dependencies and adapt to changes in the environment. It is this property that determines their key role in increasing the efficiency of audit procedures, especially in the context of digitalization of the financial sector.

One of the basic features of the use of artificial intelligence in auditing is the transition from selective verification to a continuous analysis of financial transactions. Algorithmic models allow you to cover the entire array of transactions, which significantly reduces the risk of undetected errors or violations. This approach changes the very logic of audit control, as the emphasis is shifted from formal confirmation of reporting indicators to a deep analysis of financial flows and behavioral patterns of market participants.

Another important feature is the ability of AI-based systems to identify atypical transactions not only by formal features, but also by taking into account the context. This allows auditors to assess risks taking into account the specifics of business models, regional characteristics and socio-economic factors. As a result, the audit becomes more analytical and turns into a tool for preventive risk management.

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The use of artificial intelligence is also essential for expanding financial inclusion. Analytical algorithms allow using alternative sources of information to assess the financial behavior of individuals who do not have a full credit history or access to traditional financial institutions. This contributes to the inclusion of wider segments of the population in the financial system and the formation of more equitable mechanisms for access to financial services.

In this context, audit serves as a balance between technological efficiency and social responsibility. Artificial intelligence, on the one hand, increases the speed and accuracy of decision-making, and on the other hand, requires control over compliance with the principles of transparency, non-discrimination and legality. A feature of modern auditing is the need to assess not only financial results, but also the correctness of the functioning of intellectual models, their compliance with regulatory requirements and ethical standards. Another important aspect is the reduction of information asymmetry between participants in financial relations. Thanks to the use of artificial intelligence, auditors receive tools for deeper data analysis, which increases trust in financial information and contributes to the stability of the financial system. This is especially relevant for segments focused on small businesses and socially vulnerable groups of the population, where risks are higher and access to quality control is traditionally limited.

Based on the above, we will define the role of artificial intelligence in auditing and the possibilities of expanding financial inclusion. Thus, one of the key roles of artificial intelligence in auditing is the transformation of approaches to data analysis. Algorithmic models allow processing of significant amounts of financial information without the need for selective checks, which significantly reduces the likelihood of missing significant errors or violations. As a result, the audit acquires a systemic nature, focused not only on confirming reporting, but also on a deep understanding of financial processes and risks.

The role of artificial intelligence in improving the quality of risk-based auditing is also important. Analytical algorithms are able to detect hidden relationships between

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indicators, analyze the behavioral characteristics of participants in financial transactions, and form predictive assessments. This allows auditors to move from reactive control to proactive risk management, which is especially relevant in conditions of instability in financial markets.

Along with improving the efficiency of auditing, artificial intelligence performs an important socio-economic function, contributing to the expansion of financial inclusion. Thanks to the use of alternative data sources and intelligent models for assessing financial behavior, financial institutions are able to involve individuals and groups that previously remained outside the formal financial system in their services. In this process, auditing ensures control over the correctness of the application of such models, preventing discriminatory practices and violations of the principles of justice. The role of auditing in the context of the use of artificial intelligence also consists in ensuring transparency and trust. Intelligent systems, despite their effectiveness, require proper control by specialists who are able to assess the validity of algorithmic decisions and their compliance with regulatory and ethical requirements. Thus, auditing acts as a balancing mechanism between technological innovations and public interests. In addition, artificial intelligence helps to reduce information asymmetry between participants in financial relations. Deeper data analysis and improved financial information quality strengthen trust in financial institutions, which is an important prerequisite for expanding financial inclusion. For small businesses, the self-employed and socially vulnerable groups, this means increased access to financial resources and protection from opaque decisions.

Thus, the role of artificial intelligence in increasing the efficiency of auditing and expanding financial inclusion lies in a complex combination of technological, economic and social aspects. Its implementation is not limited to the automation of procedures, but forms a new model of audit control, focused on analytical depth, prevention and social responsibility. It is in this combination that artificial intelligence becomes a tool not only for increasing the efficiency of financial control, but also for the sustainable development of the financial system as a whole.

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