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ARTIFICIAL INTELLIGENCE AND CLOUD ACCOUNTING SYSTEMS: RELIABILITY OF REPORTING AND CYBERSECURITY

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Аннотация: В статье рассматриваются особенности внедрения искусственного интеллекта и облачных бухгалтерских информационных систем в целях повышения надежности финансовой отчетности и обеспечения кибербезопасности в условиях цифровой трансформации экономики. Исследование основано на систематическом анализе научных источников и опирается на теорию социотехнических систем, что позволяет комплексно оценить взаимодействие технологических, организационных и человеческих факторов. Установлено, что интеграция ИИ и облачных решений способствует автоматизации учетных процессов, повышению точности финансовых данных и снижению рисков мошенничества, однако эффективность их применения напрямую зависит от уровня цифровой зрелости организаций, подготовки кадров и качества нормативного регулирования. Сделан вывод о необходимости сбалансированного внедрения данных технологий с учетом социально-экономической специфики Узбекистана.

Ключевые слова: искусственный интеллект, облачные бухгалтерские системы, финансовая отчетность, кибербезопасность, цифровая трансформация.

Abstract: The article examines the features of implementing artificial intelligence and cloud-based accounting information systems in order to enhance the reliability of financial reporting and ensure cybersecurity in the context of the digital transformation of the economy. The study is based on a systematic analysis of scientific sources and relies on the theory of sociotechnical systems, which makes it possible to comprehensively assess the interaction of technological, organizational, and human factors. It has been established that the integration of AI and cloud solutions contributes to the automation of accounting processes, improves the accuracy of financial data, and reduces the risks of fraud; however, the effectiveness of their application directly depends on the level of digital maturity of organizations, staff training, and the quality of regulatory frameworks. The study concludes that there is a need for a balanced implementation of these technologies, taking into account the socio-economic specifics of Uzbekistan.

Keywords: artificial intelligence, cloud-based accounting systems, financial reporting, cybersecurity, digital transformation.

Annotatsiya: Maqolada iqtisodiyotning raqamli transformatsiyasi sharoitida moliyaviy hisobotlarning ishonchliligini oshirish va kiberxavfsizlikni ta’minlash maqsadida sun’iy intellekt hamda bulutli buxgalteriya axborot tizimlarini joriy etishning xususiyatlari ko‘rib chiqilgan. Tadqiqot ilmiy manbalarni tizimli tahlil qilishga asoslangan bo‘lib, sotsiotexnik tizimlar nazariyasiga tayangan holda texnologik, tashkiliy va inson omillari o‘rtasidagi o‘zaro ta’sirni kompleks baholash imkonini beradi. Sun’iy intellekt va bulutli yechimlarning integratsiyasi buxgalteriya hisobini avtomatlashtirishga, moliyaviy ma’lumotlar aniqligini oshirishga hamda firibgarlik xavflarini kamaytirishga xizmat qilishi aniqlangan. Biroq, ularning samaradorligi tashkilotlarning raqamli yetuklik darajasi, kadrlar tayyorgarligi va me’yoriy-huquqiy tartibga solish sifatiga bevosita bog‘liqdir. Tadqiqotda O‘zbekistonning ijtimoiy-iqtisodiy xususiyatlarini

inobatga olgan holda ushbu texnologiyalarni muvozanatli joriy etish zarurligi haqida xulosa qilingan.

Kalit so‘zlar: sun’iy intellekt, bulutli buxgalteriya tizimlari, moliyaviy hisobot, kiberxavfsizlik, raqamli transformatsiya.

Introduction

Digital transformation is one of the key directions of socio-economic development in modern states. In Uzbekistan, digitalization processes are actively affecting the financial sector, accounting practices, and the corporate reporting system, driven by the need to enhance transparency, efficiency, and trust in financial information. In this context, the implementation of artificial intelligence (AI) and cloud-based accounting information systems is becoming particularly relevant, as they are viewed as tools for modernizing accounting processes and strengthening data protection.

The use of AI makes it possible to automate routine accounting operations, minimize the influence of the human factor, and provide deeper analytical insights into financial indicators. Cloud technologies, in turn, create conditions for real-time data access, scalability of accounting systems, and centralized information security management. However, alongside their obvious advantages, these technologies also generate new risks related to cyber threats, algorithmic bias, and insufficient staff readiness to operate in a digital environment.

For Uzbekistan, these challenges are especially significant, as digital solutions are being implemented unevenly across organizations, while the regulatory framework and the level of digital competencies among specialists are still evolving. Therefore, a comprehensive analysis of the impact of AI and cloud-based accounting systems on the reliability of financial reporting and cybersecurity, taking into account national conditions, is essential.

Theoretical Foundations of the Study: The Sociotechnical Approach

The theory of sociotechnical systems views an organization as a set of interrelated technical and social elements whose effectiveness is achieved only through their coordinated development. In the context of accounting, this means that the implementation of AI and cloud systems cannot be considered solely as a technological process—it requires adaptation of organizational structures, transformation of professional roles, and the development of a culture of digital responsibility.

From a technical perspective, AI enables automation of financial data processing, anomaly detection, and support for managerial decision-making based on large volumes of information. Cloud-based accounting systems complement these capabilities by providing a unified digital platform for storing, processing, and transmitting accounting information. However, without proper staff training, clear regulations, and ethical standards, these technologies may not enhance reporting reliability and may even lead to new forms of systemic errors.

Analysis of Scientific Literature on the Research Topic

In contemporary research, increasing attention is being paid to the application of artificial intelligence and cloud technologies in accounting and financial reporting.

Aisyah P. N. and DP R. T. (2025) examine the impact of integrating artificial intelligence and cloud-based accounting information systems on improving the reliability of financial reporting and the level of cybersecurity in the digital economy. The authors emphasize the role of accounting process automation, the use of intelligent algorithms for processing financial data, and the reduction of human error. The study highlights that AI contributes to greater reporting transparency and timely detection of anomalies and potential security threats, while requiring a developed digital infrastructure and appropriate regulatory frameworks.

In the study by Ionescu L. (2021), the main focus is on the use of big data analytics tools and machine learning algorithms in cloud-based accounting information systems. The author analyzes the potential of these technologies to improve the quality of managerial decision-making, forecast financial indicators, and optimize internal control. Special attention is given to the advantages of the cloud environment, including scalability, data accessibility, and integration of analytical tools, as well as risks related to data protection and confidentiality.

The work of Alnaimat M. A., Korsun I., Lutsenko K., Khodorkovskyi O., and Artemchuk M. (2025) is devoted to the transformation of accounting and financial management under the influence of artificial intelligence in the digital environment. The authors consider AI as a key factor in increasing the efficiency of financial management, automating routine operations, and improving the analytical functions of accounting departments. The article emphasizes that the implementation of intelligent technologies enhances the accuracy of financial data and reduces operational risks, while requiring adaptation of organizational processes and professional skill development.

Thus, the analysis of scientific sources shows that the integration of artificial intelligence, big data analytics, and cloud technologies is regarded by foreign researchers as a promising direction for the development of accounting information systems. At the same time, the literature stresses the need for a comprehensive approach to implementation, taking into account technological, organizational, and human resource factors, as well as the specific characteristics of national economies.

Research Methods

This study employs a qualitative research method using a Systematic Literature Review (SLR). The choice of this method is обусловлен the objective of conducting a comprehensive analysis of scientific publications devoted to the integration of artificial intelligence (AI) and cloud-based accounting information systems (CAIS) in the context of improving financial reporting reliability and ensuring cybersecurity.

The systematic literature review was conducted in accordance with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, ensuring transparency, reproducibility, and methodological rigor in the source selection process. The review procedure included several consecutive stages: identification of relevant publications, initial screening, assessment according to inclusion and exclusion criteria, and final analysis of selected studies.

The primary source of data for scientific publications was the Scopus database, from which peer-reviewed articles relevant to the research topic were selected. The inclusion criteria covered studies addressing the application of AI and cloud-based accounting information systems in financial reporting, cybersecurity, and digital accounting, as well as works containing theoretical

or empirical elements relevant to sociotechnical systems (STS) theory. Duplicate publications, non-peer-reviewed sources, and studies not aligned with the research objectives were excluded.

The selected articles were subjected to qualitative content analysis aimed at identifying key themes, concepts, benefits, and risks associated with the implementation of AI and CAIS. The analysis was conducted through the lens of sociotechnical systems theory, allowing for an assessment of the interaction between technical components (AI, cloud technologies, cybersecurity) and social components (human factors, organizational readiness, ethical governance, and regulatory frameworks).

The synthesized literature results were structured according to the following areas: reliability of financial reporting, cybersecurity, potential vulnerabilities, and factors of successful integration of AI and CAIS. This approach ensured a holistic understanding of the phenomenon under study and made it possible to formulate conclusions and recommendations based on the body of existing scientific evidence.

The sociotechnical approach makes it possible to identify a key issue in the implementation of digital solutions in Uzbekistan's accounting system—the gap between the technological potential of these solutions and their practical use within organizations.

The Role of Artificial Intelligence in Enhancing the Reliability of Financial Reporting

Artificial intelligence significantly transforms the process of financial reporting by automating accounting procedures, reducing errors, and increasing the speed of information processing. Machine learning algorithms are capable of analyzing large volumes of accounting data, detecting inconsistencies, and forecasting financial risks, which is particularly important for improving reporting reliability.

In the context of Uzbekistan, the application of AI may help address issues such as insufficient standardization of accounting processes and high dependence on manual data entry. At the same time, the lack of sufficient experience in working with intelligent systems and limited algorithm transparency create risks of incorrect interpretation of results and reduced trust in automated reporting.

Therefore, AI implementation requires not only technical investment but also the development of professional competencies among accountants and auditors capable of supervising and interpreting the outputs of intelligent systems.

Cloud-Based Accounting Information Systems and Cybersecurity

Cloud-based accounting information systems provide centralized data storage, real-time access to financial information, and reduced IT infrastructure costs. For small and medium-sized enterprises in Uzbekistan, such systems offer opportunities to use modern accounting solutions without significant capital investment.

From a cybersecurity perspective, cloud platforms offer advanced data protection mechanisms, including encryption, multi-factor authentication, and automatic security updates. However, transferring data to third parties and dependence on external service providers require enhanced oversight and clear regulatory control.

Insufficient attention to information security issues, a shortage of trained specialists, and a weak cybersecurity culture may lead to financial data breaches and undermine trust in digital accounting systems. Therefore, establishing a comprehensive cyber risk management framework in the accounting sector is a priority for Uzbekistan.

Potential Risks and Consequences of the Lack of Digital Integration

The absence of systematic implementation of AI and cloud-based accounting systems in Uzbekistan may result in continued inefficiency of accounting processes, increased operational costs, and reduced organizational competitiveness. Furthermore, the use of fragmented and outdated systems increases the vulnerability of financial data to cyber threats and limits opportunities for analysis and forecasting.

Conversely, unbalanced implementation of technologies without considering social and organizational factors may intensify risks of algorithmic bias, automated reporting errors, and staff resistance to change. This confirms the necessity of applying a sociotechnical approach, which предполагает the simultaneous development of technology, human capital, and institutional frameworks.

Conclusion

The study demonstrates that the integration of artificial intelligence and cloud-based accounting information systems holds significant potential for improving the reliability of financial reporting and strengthening cybersecurity in the digital economy. For Uzbekistan, these technologies can become an important instrument for modernizing accounting practices and enhancing transparency in financial processes.

At the same time, their effective implementation is possible only through the coordinated development of technical solutions and social mechanisms, including professional training, improvement of the regulatory framework, and the formation of a culture of digital responsibility. Ignoring these aspects may lead to increased systemic risks and reduced trust in financial information. Therefore, the further development of digital accounting in Uzbekistan should be based on the principles of sociotechnical integration and sustainable innovation management.

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