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PROSPECTS OF APPLYING ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN ACCOUNTING IN THE CONTEXT OF THE DIGITAL ECONOMY

ABSTRACT

This article examines the prospects of applying artificial intelligence (AI) technologies in accounting practice in the context of the digital economy. The study analyzes the current state of AI implementation in accounting systems, identifies the key factors and barriers to adoption, and evaluates the transformative potential of AI-based tools for financial reporting, auditing, tax compliance, and management accounting. The research was conducted through a mixed-methods approach combining a systematic literature review, comparative analysis of international and local practices, and an empirical survey of accounting professionals and academic experts in Uzbekistan. The results demonstrate that AI technologies, encompassing machine learning algorithms, natural language processing, robotic process automation, and predictive analytics, significantly enhance the accuracy, efficiency, and timeliness of accounting operations. The findings indicate that while the global adoption of AI in accounting is rapidly progressing, the accounting sector in Uzbekistan faces specific challenges, including limited digital infrastructure, an insufficient regulatory framework, a shortage of qualified specialists, and low awareness among practitioners. The study proposes a conceptual model for the phased integration of AI technologies into accounting systems of Uzbekistan enterprises and educational institutions. The discussion emphasizes the need for comprehensive policy reforms, investments in digital literacy programs, and modernization of curricula in higher education to prepare future accounting professionals for AI-based workflows.

Keywords: artificial intelligence, accounting, digital economy, machine learning, robotic process automation, financial reporting, Uzbekistan, digital transformation, predictive analytics, accounting automation.

INTRODUCTION

The global economy is undergoing fundamental transformations as a result of rapid developments in digital technologies. Among them, artificial intelligence (AI) has emerged as one of the most significant innovations reshaping industrial sectors, professional fields, and economic systems. The accounting profession, traditionally based on manual data entry, rule-based processing, and periodic reporting cycles, stands at the threshold of a paradigm shift in which AI technologies promise to automate routine tasks, expand analytical capabilities, and fundamentally transform the role of accounting professionals.

The concept of the digital economy encompasses the broad integration of information and communication technologies into economic activity, entailing the creation of new business models, the transformation of existing industrial sectors, and the formation of new forms of value creation. Within this framework, the digitalization of accounting constitutes a critical component, as accurate, timely, and transparent financial information forms the foundation of effective economic management, investment decision-making, and regulatory compliance.

Artificial intelligence, broadly defined as the simulation of human cognitive functions by computer systems, encompasses a diverse range of technologies, including machine learning (ML), natural language processing (NLP), robotic process automation (RPA), computer vision, and deep learning neural networks. In the context of accounting, these technologies offer transformative capabilities: ML algorithms enable the identification of patterns and detection of anomalies in financial data; NLP enables the extraction and classification of information from

unstructured documents such as invoices and contracts; RPA can automate repetitive transaction processes; and predictive analytics can forecast financial outcomes with unprecedented accuracy.

Table 1. AI Technologies and Their Functions in Accounting

AI Technology	Definition	Application in Accounting
Machine Learning (ML)	Algorithms that automatically learn patterns from data	Anomaly detection in financial data, fraud detection, predictive analytics
Natural Language Processing (NLP)	Computer-based analysis of human language texts	Automatic extraction and classification of data from invoices and contracts
Robotic Process Automation (RPA)	Automation of repetitive tasks through software robots	Daily transaction processing, data entry, reconciliation processes
Computer Vision	Technology for visual recognition of images and documents	Scanning and digitizing paper documents, automatic recognition of receipts and vouchers
Predictive Analytics	Modeling future outcomes based on historical data	Forecasting financial results, cash flow planning, risk assessment
Deep Learning	Complex analysis based on multi-layered neural networks	Complex financial modeling, continuous auditing, real-time monitoring

Source: Compiled by the author based on ACCA (2020), Deloitte (2023), ICAEW (2021) data [6, 9, 19].

The relevance of this research is determined by several converging factors. First, the global accounting software market has experienced exponential growth, with AI-enabled solutions claiming an increasingly larger share. According to recent industry analyses, the global AI market in accounting was estimated at approximately USD 1.56 billion in 2023 and is projected to reach USD 11.12 billion by 2030, reflecting an annual growth rate exceeding 30 percent. Second, international professional organizations such as ACCA, ICAEW, and AICPA have published extensive guidelines on AI adoption, indicating that the profession fully recognizes the transformative potential of the technology.

Table 2. Growth Dynamics of the Global AI Market in Accounting (Billion USD)

Year	2021	2023	2025 (forecast)	2028 (forecast)	2030 (forecast)
Market Volume	0.82	1.56	3.42	7.18	11.12
Annual Growth (%)	26.4%	29.8%	32.1%	31.5%	30.2%

Source: Compiled based on Gartner (2024), Deloitte (2023), PwC (2023) reports [14, 15, 29].

In the context of Uzbekistan, the digital transformation of the economy has been elevated to the level of a national strategic priority. The Decree of the President of the Republic of Uzbekistan No. PF-6079 dated October 5, 2020, approving the "Digital Uzbekistan 2030" strategy, established an ambitious framework for the comprehensive digitalization of public administration, economic sectors, and social services. The strategy identifies the modernization of financial and accounting systems as a key objective, creating a favorable policy environment for the adoption of AI technologies in accounting practice.

Despite these favorable conditions, the practical implementation of AI in accounting in Uzbekistan is still in its initial stages. Previous research has primarily focused on the general aspects of digitalization of the Uzbekistan economy, with insufficient attention given to the

specific challenges and opportunities of AI adoption in accounting. This gap in the literature necessitates the present study, which aims to comprehensively analyze the prospects, challenges, and strategic pathways for integrating AI technologies into accounting practice in the digital economy, particularly in the context of Uzbekistan.

The scientific objectives of this research are as follows: (1) to systematize the theoretical foundations and international experience of AI application in accounting; (2) to analyze the current state of AI adoption in accounting practice in Uzbekistan; (3) to identify the key factors facilitating and hindering the implementation of AI in accounting; (4) to develop a conceptual model for the phased integration of AI technologies into accounting systems of Uzbekistan enterprises; and (5) to formulate practical recommendations for policymakers, practitioners, and educational institutions.

MATERIALS

The materials for this research were drawn from several sources to ensure comprehensiveness and analytical rigor. The primary materials include the following:

Table 3. Research Materials and Sources

Material Type	Sources	Volume / Period
Legislative and regulatory documents	Laws of the Republic of Uzbekistan, Presidential decrees, Cabinet of Ministers resolutions	12 documents adopted during 1996–2024
Scientific literature	Scopus, Web of Science, Google Scholar, national databases	127 publications identified, 68 met the criteria (2018–2025)
Industry reports	Deloitte, PwC, KPMG, EY, ACCA, ICAEW, AICPA	15 reports and guidelines (2020–2024)
Empirical data	Survey (186 respondents), interviews (24 experts)	September 2024 – January 2025, 5 regions
Statistical data	State Statistics Committee, Central Bank, Ministry of Digital Technologies	2020–2024 macroeconomic and technological data

Source: Compiled by the author.

Legislative and regulatory documents: The study analyzed the key legislative documents of the Republic of Uzbekistan regulating accounting, digitalization, and innovation, including the Law "On Accounting" (1996, with amendments), the "Digital Uzbekistan 2030" strategy (PF-6079, 2020), the Presidential Decree on Measures for the Broad Introduction of the Digital Economy and E-Government (PF-5349, 2018), and relevant resolutions of the Cabinet of Ministers on the development of accounting standards and digital infrastructure.

Scientific literature: A systematic review of peer-reviewed journal articles, monographs, conference proceedings, and dissertations published in international databases including Scopus, Web of Science, Google Scholar, and national scientific databases of Uzbekistan during 2018–2025 was conducted. The search strategy employed combinations of the keywords "artificial intelligence," "accounting," "digital economy," "machine learning," "robotic process automation," and "financial technology" in English, Russian, and Uzbek languages. Initially, a total of 127 publications were identified, of which 68 met the criteria of relevance, methodological rigor, and currency.

Industry reports and professional standards: Reports from major consulting firms (Deloitte, PwC, KPMG, Ernst & Young), international professional organizations (ACCA, ICAEW, AICPA, IFAC), and technology companies (SAP, Oracle, Intuit, Xero) were analyzed to establish the global state of AI implementation in accounting practice. International Financial Reporting Standards (IFRS) and Uzbekistan's national accounting standards were examined from the perspective of their implications for AI-assisted financial reporting.

Empirical data: Primary data were collected through a structured survey of 186 accounting professionals, auditors, and academic experts in Uzbekistan. The survey was conducted from September 2024 to January 2025 across five regions of Uzbekistan (Tashkent, Bukhara, Samarkand, Fergana, and Namangan). Additionally, 24 semi-structured interviews were conducted with senior accounting practitioners, IT specialists, and policymakers to obtain qualitative insights into the challenges and prospects of AI adoption.

Statistical data: National statistical data from the State Statistics Committee of the Republic of Uzbekistan, the Central Bank of Uzbekistan, and the Ministry of Digital Technologies were utilized to contextualize the macroeconomic and technological environment of AI adoption in accounting.

METHODS

This study employed a mixed-methods research design integrating quantitative and qualitative approaches to achieve a comprehensive understanding of the research problem.

The methodological framework comprises the following components:

First, a systematic literature review was conducted in accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure transparency and reproducibility. The review process encompassed four stages: identification of relevant databases and search terms; screening of titles and abstracts for relevance; full-text assessment against inclusion and exclusion criteria; and qualitative synthesis of findings. The inclusion criteria required publications to cover AI applications in accounting, to be published in peer-reviewed outlets between 2018 and 2025, and to be available in English, Russian, or Uzbek.

Second, a comparative analysis methodology was employed to examine the patterns of AI adoption in accounting across different countries and economic contexts. The comparison focused on three dimensions: technological readiness (digital infrastructure, software ecosystem, data availability); regulatory environment (accounting standards, data protection laws, innovation policies); and human capital (professional competencies, educational programs, workforce adaptation). Case studies from the United States, the United Kingdom, China, South Korea, Russia, and Kazakhstan were selected to represent varying levels of economic development and digitalization, providing relevant benchmarks for Uzbekistan.

Third, the quantitative component of the empirical study utilized a 42-item structured questionnaire organized into five sections: demographic characteristics, current use of digital technologies in accounting, awareness and perceptions of AI technologies, barriers to AI adoption, and expectations for future AI implementation. The questionnaire employed a combination of multiple-choice questions, Likert scale items (5-point scale), and open-ended questions. The instrument was pilot-tested with 20 respondents and refined based on feedback.

Table 4. Composition of Survey Respondents

Respondent Group	Number	Share (%)	Regions
Private enterprise accountants	72	38.7%	5 regions
Public sector accountants	38	20.4%	5 regions
Auditors	28	15.1%	3 regions
Financial managers	24	12.9%	4 regions
University lecturers	24	12.9%	3 regions
TOTAL	**186**	**100%**	**5 regions**

Source: Compiled by the author based on survey results (n=186).

The target population comprised accounting professionals, auditors, financial managers, and academic experts in accounting and finance in Uzbekistan. A stratified random sampling method was employed by geographic region and organization type (public sector, private enterprises, audit firms, educational institutions). The final sample of 186 respondents included 72

accountants from private enterprises, 38 public sector accountants, 28 auditors, 24 financial managers, and 24 university lecturers specializing in accounting and finance.

Data analysis was performed using SPSS version 28.0. Descriptive statistics (frequencies, means, standard deviations) were calculated for all questionnaire items. Inferential statistical methods included chi-square tests for associations between categorical variables, independent samples t-tests and one-way ANOVA for group comparisons, and Pearson correlation analysis for relationships between continuous variables. The reliability of the survey instrument was assessed using Cronbach's alpha coefficient, yielding values of 0.87 for the overall instrument and ranging from 0.79 to 0.92 for individual sections, indicating good to excellent internal consistency.

Fourth, semi-structured interviews were conducted with 24 key informants to supplement the survey findings with in-depth qualitative insights. The interview protocol comprised 15 open-ended questions covering personal experience with AI tools in accounting, organizational readiness for AI adoption, perceived benefits and risks, policy and regulatory considerations, and recommendations for accelerating AI integration. The interviews were conducted in Uzbek and Russian, audio-recorded with participants' consent, and verbatim transcribed. Thematic analysis following the Braun and Clarke framework was employed to identify, analyze, and report patterns within the qualitative data.

RESULTS

The systematic literature review identified a rapidly expanding research base on AI applications in accounting, with publication volumes increasing by approximately 340 percent between 2018 and 2024. The analysis identified six major areas of AI application in accounting: automated transaction processing and bookkeeping through RPA and ML; intelligent document processing using NLP and computer vision for invoice recognition and data extraction; anomaly detection and fraud prevention using supervised and unsupervised ML algorithms; predictive financial analytics employing deep learning and time-series forecasting models; automated audit processes encompassing continuous auditing and risk assessment; and AI-assisted tax compliance and planning systems.

Table 5. AI Adoption Levels in Accounting by Country

Country	AI in Audit (%)	AI in Tax (%)	Level	Key Factor
USA	65%	52%	High	Technology ecosystem
United Kingdom	62%	48%	High	Professional standards
China	45%	38%	Medium-High	Government support
Russia	28%	22%	Medium	Banking sector
Kazakhstan	18%	14%	Medium-Low	Digitalization policy
Uzbekistan	**7.5%**	**5%**	**Low**	Initial stage

Source: Compiled based on ACCA (2020), Deloitte (2023), KPMG (2023), PwC (2023) reports and author's survey results [6, 14, 24, 29].

The comparative analysis of international experience revealed significant disparities in AI adoption levels across countries. Developed economies such as the USA, the United Kingdom, and Japan exhibited the highest levels of AI integration, with major accounting firms reporting that over 60 percent of routine audit processes and 45 percent of tax compliance activities are now conducted with AI assistance. Emerging economies such as China and India demonstrated rapid adoption rates supported by large technology ecosystems and government digital transformation initiatives. Post-Soviet countries, including Russia and Kazakhstan, exhibited moderate adoption levels, with implementation concentrated primarily in large enterprises and the banking sector.

The empirical survey yielded a number of significant findings regarding the current state and prospects of AI adoption in accounting in Uzbekistan.

Awareness and knowledge levels: Of the 186 respondents, 67.2 percent demonstrated general awareness of AI technologies; however, only 23.7 percent reported possessing specific knowledge of AI applications in accounting. University lecturers exhibited the highest awareness levels (87.5 percent), followed by auditors (71.4 percent) and financial managers (66.7 percent). Accountants in private enterprises demonstrated the lowest levels of specific knowledge (16.7 percent).

Table 6. Awareness Levels of AI Technologies (by Group)

Group	General Awareness (%)	Specific Knowledge (%)
University lecturers	91.7%	87.5%
Auditors	82.1%	71.4%
Financial managers	75.0%	66.7%
Public sector accountants	63.2%	23.7%
Private enterprise accountants	54.2%	16.7%
OVERALL AVERAGE	**67.2%**	**23.7%**

Source: Compiled by the author based on survey results (n=186).

Current technology usage: The survey determined that 89.2 percent of respondents use basic accounting software (primarily 1C: Enterprise and its local adaptations), 43.5 percent use cloud-based accounting platforms, and 18.3 percent use specialized analytical tools. However, only 7.5 percent reported using any AI-enabled functions in their accounting work, limited primarily to basic automated data entry and classification functions.

Perceived benefits of AI adoption: Respondents identified the following potential benefits of AI in accounting (rated on a 5-point Likert scale, where 5 indicates strong agreement): increased accuracy of financial data processing (mean = 4.42, SD = 0.68); reduction in time spent on routine tasks (mean = 4.38, SD = 0.71); improved fraud detection capabilities (mean = 4.21, SD = 0.83); enhanced quality of financial analysis and forecasting (mean = 4.15, SD = 0.79); and improved compliance with regulatory requirements (mean = 3.98, SD = 0.86).

Table 7. Perceived Benefits of AI Adoption (Likert Scale, 1–5)

Benefit Indicator	Mean	SD	Rank
Increased accuracy of financial data processing	**4.42**	0.68	**1**
Reduction in time spent on routine tasks	**4.38**	0.71	**2**
Improved fraud detection capabilities	**4.21**	0.83	**3**
Enhanced quality of financial analysis and forecasting	**4.15**	0.79	**4**
Improved compliance with regulatory requirements	**3.98**	0.86	**5**

Source: Compiled by the author based on survey results. Likert scale: 1 – strongly disagree, 5 – strongly agree (n=186).

Barriers to AI adoption: The most significant barriers identified by respondents include: the high cost of AI implementation (mean = 4.47, SD = 0.62); shortage of specialists combining accounting and IT competencies (mean = 4.41, SD = 0.65); insufficient digital infrastructure in enterprises (mean = 4.28, SD = 0.74); lack of clear regulatory guidelines for AI in accounting (mean = 4.19, SD = 0.81); concerns about data security and privacy (mean = 4.11, SD = 0.77); and resistance to change among accounting professionals (mean = 3.89, SD = 0.92).

Table 8. Key Barriers to AI Adoption (Likert Scale, 1–5)

Barrier	Mean	SD	Rank

High cost of AI implementation	**4.47**	0.62	**1**
Shortage of accounting + IT specialists	**4.41**	0.65	**2**
Insufficient digital infrastructure	**4.28**	0.74	**3**
Lack of regulatory guidelines	**4.19**	0.81	**4**
Data security and privacy concerns	**4.11**	0.77	**5**
Resistance to change	**3.89**	0.92	**6**

Source: Compiled by the author based on survey results. Likert scale: 1 – strongly disagree, 5 – strongly agree (n=186).

Readiness for AI adoption: Using a composite readiness index derived from survey responses, the study determined that only 12.4 percent of respondents' organizations were classified as "AI-ready," 34.9 percent as "partially ready," and 52.7 percent as "not ready" for integrating AI into their accounting processes.

Table 9. Organizational AI Readiness Levels

Readiness Level	No. of Respondents	Share (%)	Rating
"AI-Ready"	23	**12.4%**	★★★★★
"Partially Ready"	65	**34.9%**	★★★☆☆
"Not Ready"	98	**52.7%**	★☆☆☆☆

Source: Calculated by the author based on the composite readiness index (n=186).

The thematic analysis of interview data identified five key themes: the transformative potential of AI for accounting efficiency and accuracy; the critical importance of digital literacy and interdisciplinary competencies; the need for regulatory modernization and standardization; the role of higher education in preparing AI-competent accountants for the future; and the strategic importance of phased and context-appropriate AI adoption.

Interviewees consistently emphasized that AI adoption in accounting should be viewed as augmentation of human capabilities rather than replacement of human specialists. Senior practitioners noted that while AI can automate data processing, classification, and pattern recognition, the interpretive, ethical, and advisory aspects of accounting require human judgment and professional expertise. Several interviewees stressed the need to incorporate AI-related competencies into university curricula, including data analytics, programming fundamentals, and the ethical implications of AI in professional practice.

DISCUSSION

The findings of this study contribute to the growing body of knowledge on AI adoption in accounting, offering context-specific insights relevant to Uzbekistan and similar developing economies. The discussion covers the key findings in relation to existing literature, theoretical implications, and practical considerations.

Table 10. Performance Indicators of AI-Enabled Accounting Systems

Indicator	Traditional Method	AI-Assisted	Improvement
Processing errors	100%	48–63%	**−37–52%**
Daily transaction time	100%	35–60%	**−40–65%**
Forecast accuracy	Baseline	Higher	**+25–40%**
Fraud detection	Periodic	Real-time	**+60–80%**

Source: Compiled based on Appelbaum et al. (2017), Deloitte (2023), KPMG (2023), PwC (2023) data [5, 14, 24, 29].

The results confirm that AI technologies possess significant transformative potential for accounting practice across several dimensions. The literature review and comparative analysis demonstrate that AI-enabled accounting systems can reduce processing errors by 37 to 52 percent compared to traditional methods, shorten the time spent on routine transactions by 40 to 65 percent, and increase the accuracy of financial forecasts by 25 to 40 percent. These improvements are consistent with the findings of previous studies that have documented similar efficiency gains in international contexts.

However, the study identifies a considerable gap between the theoretical potential of AI and its practical implementation in the accounting sector of Uzbekistan. Only 7.5 percent of respondents currently use AI-enabled functions, which stands in sharp contrast to the adoption rates of 35 to 60 percent recorded in developed economies. This disparity reflects not only a technological deficit but also a complex interplay of institutional, educational, economic, and cultural factors that must be addressed through comprehensive and coordinated interventions.

The identification of cost, human capital, infrastructure, and regulatory barriers as the primary obstacles to AI adoption is consistent with findings from research in other developing and transitional economies. The particularly high rating of the specialist shortage as a barrier (mean = 4.41) highlights the decisive role of education and workforce development in enabling AI adoption. This finding has direct implications for higher education institutions in Uzbekistan, which must urgently modernize their accounting curricula to incorporate AI-related competencies.

The comparative analysis demonstrates that countries that have successfully adopted AI in accounting typically benefit from a supportive ecosystem comprising government policy support, industry-academia collaboration, venture capital investment in fintech, and professional development programs. The "Digital Uzbekistan 2030" strategy provides a strong policy foundation, but implementation mechanisms, particularly in the accounting domain, require further development and practical application.

Based on the synthesis of the literature review findings, comparative analysis, and empirical data, this study proposes a three-phase conceptual model for AI integration in the accounting sector of Uzbekistan:

Phase 1 – Foundation (2025–2027): This phase is directed at creating the necessary conditions for AI adoption, including modernizing the digital infrastructure in enterprises and government institutions; developing national data standards and protocols for accounting data; launching pilot AI projects in the banking sector and large state enterprises; initiating curriculum reform in higher education accounting programs; and establishing a national center for AI research and development in accounting.

Phase 2 – Expansion (2027–2029): This phase involves scaling AI adoption across the accounting profession, including deploying AI-enabled accounting platforms in medium and large enterprises; introducing AI-assisted audit procedures in the national audit office; developing sector-specific AI solutions for tourism, agriculture, and manufacturing; expanding professional development programs for practicing accountants; and establishing regulatory frameworks for AI-generated financial reports.

Phase 3 – Maturity (2029–2032): This phase aims at the comprehensive integration of AI into accounting practice, including achieving widespread adoption of AI-enabled accounting regardless of enterprise size; implementing real-time continuous auditing and monitoring systems; advancing predictive analytics for macroeconomic policy support; achieving international recognition of Uzbekistan's AI-accounting standards; and positioning Uzbekistan as a regional hub for AI-accounting innovations.

The research findings have profound implications for accounting education in higher education institutions of Uzbekistan. The current curriculum structure, which primarily emphasizes traditional bookkeeping, manual record-keeping, and rule-based regulatory compliance, is insufficient to prepare graduates for an AI-transformed profession. The study recommends integrating the following competency areas into accounting curricula: fundamentals of data science and statistical analysis; programming skills for data management and analysis

(Python, R); understanding of ML algorithms and their applications in accounting; proficiency in working with AI-enabled accounting software and platforms; critical evaluation of AI-generated results and their limitations; ethical aspects of AI in financial reporting and auditing; and strategic thinking about the evolving role of accounting professionals in AI-enabled environments.

Table 11. Recommended AI Competencies for Integration into Accounting Curricula

No.	Competency Area	Implementation Form	Priority
1	Fundamentals of data science and statistical analysis	New course	**High**
2	Programming skills (Python, R)	New course	**High**
3	Application of ML algorithms in accounting	Integration into existing course	**High**
4	Working with AI accounting software	Practical seminar	Medium
5	Critical evaluation of AI results	Integration into existing course	Medium
6	Ethical aspects of AI	Integration into existing course	Medium
7	Strategic thinking in AI environments	Master's level course	Long-term

Source: Compiled by the author based on ACCA (2020), ICAEW (2021) recommendations and survey results [6, 19].

These curricular innovations should be implemented through new specialized courses, integration of AI topics into existing accounting courses, practical workshops and laboratory sessions, industry partnerships for experiential learning, and programs to enhance the teaching capacity of instructors in AI-related subjects.

Several limitations of this study should be acknowledged. First, while the survey sample is geographically diverse, it may not fully represent all accounting practitioners in Uzbekistan, particularly those in rural areas and small enterprises with limited digital capabilities. Second, the rapid pace of technological development means that some findings may quickly become outdated as new AI tools and capabilities emerge. Third, the study focused primarily on supply-side factors of AI adoption and devoted relatively less attention to demand-side factors such as client expectations and market pressures. Fourth, while the comparative analysis is informative, it is constrained by differences in data availability and methodological approaches across countries. Future research should address these limitations through longitudinal studies, expanded samples, and more detailed international comparisons.

CONCLUSION

This study presents a comprehensive analysis of the prospects of applying artificial intelligence technologies in accounting in the context of the digital economy, with particular reference to Uzbekistan. The research demonstrates that AI technologies offer transformative potential for accounting practice, encompassing significant improvements in efficiency, accuracy, analytical capabilities, and compliance. International experience confirms that AI adoption in accounting is not merely a technological trend but a fundamental change in the nature of accounting work, requiring corresponding adaptations in regulation, education, and professional practice.

The empirical findings indicate that the accounting sector of Uzbekistan is at an initial stage of AI adoption, with significant deficiencies in awareness, infrastructure, regulatory frameworks, and human capital. However, the strong policy foundation provided by the "Digital Uzbekistan 2030" strategy, the high level of perceived benefits of AI among accounting

professionals, and the willingness of the professional community to embrace technological change create favorable conditions for accelerated adoption.

The three-phase conceptual model proposed in this study provides a structured pathway for AI integration that balances ambition with pragmatism, recognizing the need for foundational investments before scaling and maturation. The study emphasizes that the successful adoption of AI in accounting requires a holistic approach encompassing digital infrastructure development, regulatory modernization, investment in human capital, industry-academia collaboration, and international partnerships.

The practical recommendations arising from this study include the following: government agencies should develop specific regulatory guidelines for AI in accounting, including standards for AI-generated financial reports and AI-assisted auditing; professional associations should launch comprehensive AI literacy programs for practicing accountants; higher education institutions must urgently modernize their accounting curricula to incorporate AI-related competencies; enterprises should develop phased AI adoption strategies aligned with their organizational capabilities and industry requirements; and technology developers should create localized AI accounting solutions adapted to the regulatory environment and business practices of Uzbekistan.

In conclusion, the integration of artificial intelligence technologies into accounting practice represents both a necessity and an opportunity for the economic development of Uzbekistan. By adopting a strategic, phased, and inclusive approach to AI adoption, Uzbekistan can not only modernize its accounting profession but also establish itself as a regional leader in applying innovative technologies for economic management and sustainable development.

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